

## 2015 Minerals Yearbook

**BELGIUM AND LUXEMBOURG [ADVANCE RELEASE]** 

# THE MINERAL INDUSTRIES OF BELGIUM AND LUXEMBOURG

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#### **BELGIUM**

The real gross domestic product (GDP) of Belgium in 2015 increased to \$458.7 billion from \$452.3 billion in 2014, or by an estimated 1.4%. The country reported an estimated unemployment rate of 8.7% in 2015 and an inflation rate of 0.6%. The country's budget deficit amounted to 2.9% of the GDP and its national debt was equivalent to 106.9% of the GDP. Belgium ranked seventh in the EU in terms of GDP (following the Netherlands), and the output value of Belgium's entire industrial sector accounted for 22.3% of the GDP in 2015. The National Bank of Belgium reported that the country's economic recovery continued at a moderate pace during the first 6 months of 2015, but a period of deteriorating business and household confidence in the second half of the year slowed the rate of growth (National Bank of Belgium, 2015; U.S. Central Intelligence Agency, 2016).

The mineral industry in Belgium had transitioned from a producer of raw materials, principally coal, to a manufacturer and processor of metals and steel. Because Belgium had ceased mining for metallic minerals, the country imported the raw materials necessary for its metal-refining industry or obtained them from secondary scrap recovery. In 2015, Belgium was a significant regional processor of cobalt, primary and secondary copper, lead, pig iron, steel, and zinc; however, in terms of percentage of total world production of these commodities, Belgium's production was not among the most significant world producers. Belgium also produced industrial minerals and petroleum refinery products, and Antwerp was an important trading center for the world diamond industry (tables 1, 2).

#### **Minerals in the National Economy**

Steel production and the metal-processing industry were significant to the Belgian economy. Measured by the tonnage of production, Belgium was the 21st-ranked steel producer in the world in 2015. ArcelorMittal S.A. of Luxembourg was the main producer of steel and steel products in Belgium; it had four sites—one each in Liege, Geel, Genk, and Gent—as well as a wholly owned subsidiary, Industeel Belgium S.A., located in Charleroi. ArcelorMittal produced crude steel, rolled and flat steel products, and galvanized steel. NLMK Group of Russia was another significant steel producer in Belgium; it owned two steel product plants, one in Clabecq and a second in La Louviere, which produced principally rolled products (table 2; World Steel Association, 2015, p. 9).

In 2015, Umicore Group was one of the world's leading metal recyclers and processors. It was headquartered in Brussels, and it had one of its largest units in Hoboken (a suburban area of Antwerp). Umicore Hoboken was the home of the Umicore Precious Metals Refining facility, at which it recovered

automotive and industrial catalysts, electronic scrap, fuel cells, and 17 precious and nonferrous metals from industrial residues. Umicore also had a cobalt and specialty materials plant in Olen, where it produced arsenic trioxide, cobalt and cobalt compounds, manganese compounds, and nickel compounds, among other products (Umicore Group, 2016).

Nyrstar N.V. was a leading producer of zinc in the world in terms of the quantity of output; it had a plant in Balen and another one located 18 kilometers away in Overpelt. The Balen smelter had a capacity of 290,000 metric tons per year (t/yr), which made it one of the largest zinc smelters in the world in terms of the quantity of production, and the Overpelt facility was the among the largest oxide washing facilities in Europe. The Balen-Overpelt complex produced principally cement copper, sulfuric acid, zinc, and zinc alloys (Nyrstar N.V., 2016, p. 52).

According to the Antwerp World Diamond Centre (AWDC), Antwerp was the center of the world's open rough diamond market. In 2015 Antwerp's total diamond trade value amounted to \$48.3 billion, which was a decrease from the \$58.8 billion traded in the previous year. Polished diamond trade represented an important share of all Belgium's exports outside the EU in 2015 (Antwerp World Diamond Centre, 2016a, b).

#### **Government Policies and Programs**

Belgium is a federal state with a federal legislature, and it is also divided into three linguistic communities and three geographic regions, all with their respective legislatures. Flanders is the sole exception within this legal framework, as the Flemish language community and the Flemish region legislature united in 1980. After 1980, the general laws regarding mineral exraction and administration have been administered under the legislative powers of each region. These regions are Vlaanderen (Flanders), Wallonie (Wallonia), and the Brussels capital region. The main mining law dates from 1810, with modifications in 1914, 1920, and 1929. In 1980, each region became responsible for its own mineral resources, and in 2015, each region had its own laws and regulations regarding mineral concessions and all matters related to mineral exploration and extraction (European Union, 2014; Service Géologique de Wallonie, 2014).

#### **Production**

In 2015, Belgium's production of primary cobalt increased by 7.8%, and that of secondary lead, by 3.8%. Production of refined copper decreased by 2.2%, and that of pig iron, by 2%. Crude steel production declined by 1.7%, and that of hot-rolled steel products, by 1%. The refining of copper, minor metals (cadmium, cobalt, germanium, selenium, tellurium, and tin, among others), and zinc and the production of steel were the leading mineral industries in Belgium (table 1).

According to the Flemish Environment, Nature and Energy Department, the industrial minerals clay, loam, and sand and gravel were the only mineral resources that were extracted and commercialized in the Flemish region. The mineral extraction industry in Flanders employed directly about 3,500 people (Flemish Environment, Nature and Energy Department, 2014).

#### **Structure of the Mineral Industry**

Belgium's mineral industry is privately owned, and although the Government in the past directly owned or directed mineral companies that it considered critical for the economy, this was not the case anymore. The Government, however, still owned and operated the main railway system in the country (la Société National des Chemins de Fer Belges, or SNCB), as well as the principal network of radio and television stations in the country (RTBF/VRT). The Government also owned the majority of one of the principal telecommunications groups in the country (Proximus) and still kept a near monopoly of telephone landlines in the country. Although the country's economy had shifted from one based on production of manufactured goods to a service economy, mineral processing and manufacturing were still relevant to the Belgian economy.

The principal mining and mineral-processing facilities in Belgium, with their locations and capacities, are listed in table 2. Most of these facilities were privately owned either by Belgian companies or other EU companies.

#### **Mineral Trade**

In 2015, Belgium exported a total \$399 billion<sup>1</sup> in goods and services, which was an increase of 1.1% compared with that of the previous year, and it imported a total of \$376 billion, which was a decrease of 0.9%. Overall, there was a net increase in Belgian exports in 2015 in the amount of \$23 million (Belgian Foreign Trade Agency, 2016, p. 1, 13.

Worldwide, Belgium accounted for 2.4% of all exports in 2015, making Belgium the 12th-ranked exporter in the world in terms of the value of exports. Belgium accounted for 2.2% of the world's imports, making it the 14th-ranked importer in the world in terms of the value of imports. Belgium exported \$226 billion worth of goods and services to the EU, or 56.8% of all its exports, and it imported \$197 billion worth of goods from EU countries, or 52.5% of all its imports. Belgium's principal export trade partners in the EU were Germany, to which Belgium exported \$68 billion (or 16.9% of its total exports); France, \$62 billion (15.5%); the Netherlands, \$46 billion (11.4%); the United Kingdom, \$36 billion (8.8%); and Italy, \$20 billion (5%). Belgium's principal export partners outside of the EU were the United States, which received \$24 billion worth of goods from Belgium, or 6% of all Belgium's exports; India, \$8.7 billion (2.2%); and China, \$7.5 billion (1.9%). Belgium's principal import trade partners in the EU were the Netherlands, from which Belgium imported \$6 billion worth of goods, or 16.7% of its total imports; Germany, \$48 billion (12.7%); France, \$36 billion (9.6%); the United Kingdom, \$19 billion (5.1%); and Ireland, \$18 billion (4.8%). Belgium's principal

import partners outside the EU were the United States, which supplied \$33 billion worth of goods, or 8.7% of all its imports; China, \$16 billion (4.3%); and Russia, \$9 billion (2.5%) (Belgian Foreign Trade Agency, 2016, p. 2, 3, 6, 7, 17).

Belgium exported a total of \$35 billion worth of mineral products in 2015, which was a decrease of about 23.8% compared with that of the previous year. It imported \$50 billion worth of mineral products, which was a 24.5% decrease from that of the previous year (Belgian Foreign Trade Agency, 2016, p. 5).

Belgium imported \$12.7 billion worth of polished diamond and exported \$13 billion in 2015, which was a decrease of 8.4% and 9.4%, respectively, compared with that of the previous year. Also, the country imported \$11.1 billion worth of rough diamond and exported \$11.5 billion in 2015, which was a decrease of 25.4% and \$26.5%, respectively, compared with that of the previous year. Belgium exported polished diamond to, in order of value exported, the United States, Hong Kong, Israel, the United Arab Emirates, and Switzerland, and it imported polished diamond from Hong Kong, the United States, India, the United Arab Emirates, Israel, and Switzerland (Antwerp World Diamond Centre, 2016a).

#### **Commodity Review**

#### Metals

**Cobalt.**—According to the Cobalt Development Institute (CDI), world production of cobalt decreased by 42,754 metric tons (t) in 2015, or by about 5%. Umicore increased its cobalt production in 2015, however, to 6,306 t from 5,850 t; the company did not indicate the reason(s) for this increase (Cobalt Development Institute, 2016, p. 3).

In September, Umicore announced plans to invest in its Olen site. The investment, which would total about \$28 million, was to be used to upgrade the cobalt refining and recycling plant. The company stated that the upgraded refining facility would allow the company to increase cobalt production as well as its ability to recycle cobalt and nickel-bearing residues. The investment plan also included efficiency measures, and the company projected that, by 2020, the site would operate with 70 fewer workers than in 2015—a reduction that the company stated would be achieved by attrition rather than by layoffs (Umicore Group, 2015, 2016).

Iron and Steel.—In July, ArcelorMittal, LanzaTech Inc. of the United States, and Primetals Technology Ltd. of the United Kingdom entered into a letter of intent to construct the first European commercial-scale production facility to create bioethanol from gases produced during the steelmaking process. The \$97 million project would be located at ArcelorMittal's steel plant in Ghent, and construction was anticipated to start at the end of 2015. Bioethanol was expected to be produced from this facility by mid-2017 and, by 2018, the plant would have a total capacity of 47,000 t/yr of ethanol (ArcelorMittal, 2015).

#### **Industrial Minerals**

**Cement.**—The Fédération de l'Industrie Cimentière Belge (FEBELCEM) [Federation of the Belgian Cement Industry] reported that construction sector production in Belgium increased

<sup>&</sup>lt;sup>1</sup>Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR0.9009=\$1.00 for 2015.

by 1.9% in 2015, and that cement consumption increased by 4.6% to 6.3 million metric tons (Mt) compared with the consumption of the previous year. This increase in consumption was likely owing to the favorable weather that allowed for an increase of new residential construction during the year. FEBELCEM also stated that cement imports into Belgium increased in 2015 to 1.5 Mt, which represented an increase of 18% compared with cement imports for the previous year. As a result of this increase, the share of imported cement in the total Belgian cement market was 23.6%. FEBELCEM also stated that employment in the construction sector decreased by 2%, but that construction of new residential projects increased by 3% and that of renovations and public construction projects also increased by 3% and 5.7%, respectively. In fact, FEBELCEM stated, the only subsector that did not show increases was that of the non-new residential construction, which actually decreased by 3% (Federation of the Belgian Cement Industry, 2016, p. 1).

**Diamond.**—AWDC reported that poor economic conditions caused demand for diamond to decrease worldwide in 2015. Because Antwerp was the largest diamond trade hub in the world, according to the AWDC, it was directly affected by this global slowdown. AWDC stated that it was looking for new technologies to meet the diamond industry's alternative financial services needs for international transactions and that it was starting a pilot program to offer international transactions that would to be transparent, and instant. A total of 60 diamond companies would be able to sign up for these pilot projects, which would run for one full year (Antwerp World Diamond Centre, 2016a, b).

#### Outlook

The improvement of world economic conditions is projected to have a positive effect on Belgium's mineral industry. Cement, diamond, and steel are very price sensitive, and an increase in their demand would, in the long term, mean an increase in their prices once capacity of production is reached in the already existing facilities. Because of the global economic slowdown, little new expansion or construction of new production capacity had been taken place in the past 5 years; however, if the economy grows and foreign demand increases, this is likely to change. Belgium will continue its role as a leading mineral processor and major world diamond trader, and the country will also remain significant in international and intra-European cargo handling of mineral products through its major Ports of Antwerp, Ghent, Ostend, and Zeebrugge.

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#### LUXEMBOURG

In 2015, the GDP of Luxembourg increased by 4.8% and the output of the manufacturing sector increased by 5.8% compared with that of 2014. The unemployment rate in Luxembourg decreased to 6.7% from 7% in 2014, the inflation rate increased by 0.5%, and the public budget ran a surplus of 1.2% of the GDP (STATEC, 2016a, p. 2; 2016b, p. 1, 3).

Luxembourg produced mostly construction minerals for domestic consumption, and the only two sectors of the mineral industry that continued to be significant in terms of world production were steel and, to a much lesser extent, cement. The iron and steel industry was Luxembourg's most economically important mineral industry sector in 2015, and steel was the country's main export commodity.

#### **Production**

Mining in Luxembourg consisted of small industrial mineral operations that produced commodities only for domestic consumption. These minerals included dolomite, limestone, sand and gravel, and slate. Information on these operations was not readily available. Some mineral commodity production data are in table 1.

#### **Structure of the Mineral Industry**

Steel producer ArcelorMittal had its headquarters in Luxembourg and plants at Differdange, Esch-Belval, and Esch-Schifflange. Cimalux S.A., which was owned by Buzzi Unicem Sp.A. of Italy, had a grinding plant at Esch-sur-Alzette and a clinker plant at Rumelange. The principal mineral facilities in Luxembourg, with their locations and capacities, are listed in table 2. All facilities were privately owned.

#### **Commodity Review**

#### Metals

Iron and Steel.—ArcelorMittal had stopped activities at the Esch-Schifflange plant since 2011 and, in February 2016, the company announced that it had begun a study for the reconversion of the land at the Esch-Schifflange site. Given that the company had stopped all activities at the plant, only about 15 employees worked there, mostly charged with keeping up the plant. The Government of Luxembourg planned to work with the company to re-zone the area to introduce new collective

infrastructures and renew the site. The 54-hectare site was granted by ArcelorMittal to the Government for redevelopment (Luxembourger Wort, 2016).

#### Outlook

Luxembourg is expected to continue to be a producer and exporter of steel. The country's industrial mineral production will likely continue to be limited to domestic consumption.

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## $\label{table 1} \textbf{TABLE 1}$ BELGIUM AND LUXEMBOURG: PRODUCTION OF MINERAL COMMODITIES $^1$

(Metric tons unless otherwise specified)

Country and commodity	2011	2012	2013	2014	2015
BELGIUM <sup>2</sup>					
Metals:					
Cobalt, primary <sup>3</sup>	3,187	4,200	5,415	5,850	6,306
Copper:					
Smelter, secondary	112,900	118,000	150,600	143,100 <sup>r</sup>	141,000
Refined, primary and secondary	394,200	396,000	387,000	387,300 <sup>r</sup>	378,600
Iron and steel:					
Pig iron thousand metric tons	4,725	4,072	4,343	4,335	4,248
Steel:					
Crude do.	8,026	7,386	7,092	7,345	7,219
Hot-rolled products do.	10,012	8,917	8,293	8,392 <sup>r</sup>	8,300 6
Lead, refined, secondary	119,000	119,000	129,000	132,000	136,000
Zinc, slab:					
Primary	282,000	250,000	252,000	262,000 <sup>r</sup>	260,000
Secondary, possibly remelted zinc <sup>e</sup>	40,000	47,000 <sup>r</sup>	48,000 <sup>r</sup>	50,000 r	50,000
Total <sup>e</sup>	322,000	297,000 г	300,000 <sup>r</sup>	312,000	310,000
Industrial minerals:					
Cement thousand metric tons	6,954	6,280	6,119	6,364 <sup>r</sup>	6,300 6
Mineral fuels and related materials:	-				
Petroleum refinery products:					
Liquefied petroleum gas thousand 42-gallon barrels	6,200	5,439	6,680	6,600 °	6,600 6
Naphtha and white spirit do.	NA	NA	NA	NA e	NA <sup>c</sup>
Gasoline do.	30,100	27,558	34,602	34,600 e	34,600 6
Kerosene do.	15,900	13,870	11,790	11,700 °	11,700 °
Kerosene, other do.	510	511	256	250 e	250 9
Distillate fuel oil do.	93,000	98,477	82,855	82,800 e	82,800 9
Refinery gas do.	NA	NA	NA	NA e	NA '
Residual fuel oil do.	35,100	37,449	32,193	32,100 °	32,100
Bitumen do.	NA	NA	NA	NA e	NA '
Total do.	180,000	183,304	168,376	168,000	168,000
LUXEMBOURG					
Metals:					
Steel:					
Crude thousand metric tons	2,521	2,232	2,090 <sup>r</sup>	2,193 <sup>r</sup>	2,129
Hot-rolled products do.	2,220	2,136 <sup>r</sup>	2,015 <sup>r</sup>	2,124 <sup>r</sup>	2,100 9
Industrial minerals:					
Cement, hydraulic <sup>e</sup>	1,198,737 <sup>r</sup>	1,132,619 <sup>r</sup>	1,092,512 <sup>r</sup>	1,057,571 <sup>r</sup>	1,000,000

<sup>&</sup>lt;sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. NA Not available.

<sup>&</sup>lt;sup>1</sup>Table includes data available through May 19, 2016.

<sup>&</sup>lt;sup>2</sup>In addition to the commodities listed, Belgium produced a number of other metals, alloys, and industrial minerals, such as bismuth metal, cadmium, coke, dead-burned dolomite, germanium, kaolin, lime, nitrogen, quicklime, secondary aluminum, secondary tin metal, selenium, sodium sulfate, sulfur, sulfuric acid, tellurium, worked and natural stone, and zinc powder, and Luxembourg produced phosphates (thomas slag), for which only aggregate output figures were available.

<sup>&</sup>lt;sup>3</sup>Production reported by N.V. Umicore S.A. includes production from China and South Africa.

### ${\it TABLE~2} \\ {\it BELGIUM~AND~LUXEMBOURG: STRUCTURE~OF~THE~MINERAL~INDUSTRIES~IN~2015} \\$

#### (Thousand metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
BELGI		and major oquity ovinois	Downer of main normals	capacity
Cadmium, metal	metric tons	N.V. Umicore S.A.	Hoboken	1,800
Cement		Major companies, of which:	Plants, of which;	8,400
Do.		Cimenteries CBR SA (HeidelbergCement Group)	Major plants at Lixhe, Mons-Obourg,	(3,200)
			Harmignies, and Ghent	
Do.		Ciments d'Obourg SA (Holcim Group)	Plant at Obourg	(2,800)
Do.		Compagnie des Ciment Belge (Ciments Français S.A.)	Plant at Gaurain-Ramecroix	(2,400)
Cobalt	metric tons	N.V. Umicore S.A.	Refinery at Olen	500
Copper, secondary		Metallo-Chimique NV (Metallum Group)	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.	Smelter at Antwerp-Hoboken	90
Do.		do.	Refinery at Antwerp-Hoboken	125
Limestone		Carmeuse S.A. (privately owned)	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	Total S.A.	Refinery at Antwerp	268,000
,	barrels per day		, 1	,
Do.	do.	ExxonMobil Petroleum & Chemical B.V.B.A. (Exxon Mobil Corp., 100%)	do.	239,000
Do.	do.	Antwerp Processing Co. (Vitol Group)	do.	125,000
Do.	do.	Belgian Refining Corp. (Guvnor Group)	do.	107,500
Do.	do.	PRA NV (Vitol Group)	do.	22,300
Salt		Zoutman NV	Plant at Roeselare	200
Sand, silica		SRC-Sibelco SA	Mines and plants at Lommel, Mol, and Maasmechelen	500
Steel:				
Crude		ArcelorMittal Liege (ArcelorMittal S.A., 100%)	Plant at Liege	3,000
Do.		ArcelorMittal Gent (ArcelorMittal S.A., 100%)	Plant at Ghent	3,000
Manufactured		NMLK Clabecq S.A. (NLMK Group, 100%)	Rolling mill at Clabecq	750
Do.		NLMK La Louviere S.A. (NLMK Group, 100%)	Rolling mill at La Louviere	900
Do.		Industeel Belgium S.A. (ArcelorMittal S.A., 100%)	Rolling mill at Charleroi	600
Do.		ArcelorMittal Genk (ArcelorMittal S.A. 100%)	Galvanizing plant at Genk-Zuid	360
Do.		Tubemeuse Industries S.A.	Tube mill at Flemalle	50
Tin		Metallo-Chimique NV (Metallum Group, 100%)	Smelter at Beerse	12
Zinc, metal		Nyrstar N.V.	Smelter at Balen	290
Do.		do.	Refinery at Overpelt	350
LUXEMB	OURG		v .	-
Cement		Cimalux S.A. (Buzzi Unicem S.p.A.).	Grinding plant at Esch-sur-Alzette and	850
		• /	clinker plant at Rumelange	1,000
Steel		ArcelorMittal Belval (ArcelorMittal S.A., 100%)	Plants at Differdange, Esch-Belval, and Esch-Schifflange	5,320

Do., do. Ditto.

<sup>&</sup>lt;sup>1</sup>Includes the capacity of the company SA Ciments de Haccourt.