

2016 Minerals Yearbook

BELGIUM

THE MINERAL INDUSTRY OF BELGIUM

By Sinan Hastorun

The mineral industry in Belgium was primarily a manufacturer and processor of metals, having largely transitioned away from mining minerals. As there was no extraction of metal ores in the country, raw materials for its metal refining industry were sourced from imports or secondary scrap. In 2016, Belgium was the world's 4th-ranked selenium producer (excluding the United States), 5th-ranked arsenic and indium producer, and 20th-ranked (tied with the United Kingdom) lime producer. The country accounted for 6% of the world's selenium output, and 3% each of the world's output of arsenic and indium. Within the European Union (EU), Belgium was a significant processor of cobalt, primary and secondary copper, lead, pig iron, steel, and zinc. For the United States, Belgium was an important import source of antimony, bismuth, gemstones, germanium, mica, rhenium, and tellurium. Belgium was also an important export destination of iron oxide pigments from the United States. The city of Antwerp was an important global trading center for diamond and the second largest port in Europe (tables 1, 2; U.S. Commercial Service, 2017; U.S. International Trade Administration, 2017, p. 1; Anderson, 2018a, b; George, 2018; Jasinski, 2018; Klochko, 2018a, b; Olson, 2018; Polyak, 2018; Schnebele, 2018; Tanner, 2018; Thomas, 2018).

Minerals in the National Economy

The real gross domestic product (GDP) of Belgium increased by 1.7% in 2016 compared with that of 2015; the nominal GDP was \$474 billion. In 2015 (the latest year for which comprehensive data were available), the output of the industry, energy, and water sector accounted for 15.1% of the GDP. Manufacturing output contributed 12.8% of the GDP, of which metallurgy and metal manufacturing made up 1.7%. Mining and quarrying contributed only 0.1% of the GDP (National Bank of Belgium, 2017, p. 5, 12; U.S. Commercial Service, 2017).

In 2016, mining and quarrying output increased by 2.3% and industrial production, by 4.6%. Coke and refined petroleum products output increased by 10.6% and nonmetallic mineral products output, by 1.8%. Base metals output decreased by 3.8%, and fabricated metals output, by 0.5% (Statbel, 2018).

The mineral industry of the Flanders region produced principally industrial minerals, such as clay, loam, and sand and gravel by open pit mining. Mineral commodities, primarily industrial minerals, were the region's second-ranked export category. The mineral extraction industry in Vlaanderen (Flanders) employed directly about 3,500 people. The Wallonie (Wallonia) region produced primarily metals and metallic products. Manufacturing accounted for a higher share of the value added to the economy of Wallonia than did mineral extraction (Environment, Nature, and Energy Department, 2017, p. 5–6; European Commission, 2018a, b).

Government Policies and Programs

No national mining law was in place in Belgium. The management of mineral resources, with the exception of those on the continental shelf in the North Sea, was the responsibility of the three geographic regions of Belgium: Flanders, Wallonia, and the Brussels capital region. The central Government was responsible for the security of the energy supply and nuclear energy, whereas the regional Governments were responsible for overseeing the distribution of natural gas and electricity conducted by the private sector. The legal regulations governing primary industrial mineral resources and extraction activities were as follows: In Flanders, the Flemish Parliament Act on Surface Mineral Resources provides the legislative framework for the Flemish Minerals Policy and mandates the development of a general surface mineral resources plan as well as surface mineral resource summaries, specifically for sand and clay. The Vlaams Reglement Betreffende de Milieuvergunning (VLAREM) [Flemish Regulations On Environmental Permits] form the legal basis for the environmental regulatory process with respect to any activities or projects having to do with the extraction of sand and gravel and brick clay that could have an impact on the environment. In Wallonia, decree *Carrières* [Careers] of July 4, 2002, provides guidelines for obtaining environmental permits, and the “Code Wallon de l'Aménagement du Territoire, de l'Urbanisme et du Patrimoine” (CWATUPE) [Walloon Code of Town and Country Planning, Urbanism and Heritage] sets land use rules that are applicable to quarries. For offshore activities, the “Act On the Exploration and Exploitation of Non-Living Resources of the Territorial Sea and the Continental Shelf” of June 13, 1969, as modified on January 20, 1999, and April 22, 1999, provides specifics regarding concessions, royalties, and supervision with respect to the extraction of sand and gravel (European Commission, 2017; European Union, 2017a, b).

Production

The refining of copper, minor metals (cadmium, cobalt, germanium, selenium, tellurium, and tin, among others), and zinc and the production of steel and steel products were the leading activities of the mineral industry in Belgium. In 2016, the production of pig iron increased by 15%; secondary lead, by 8%; and crude (raw) steel, by 6%. The production of primary zinc (smelter) decreased by 9%; primary copper (refined), by 4%; secondary tin, by 3%; and hot-rolled steel products and secondary copper (refined), by 2% each. Among the industrial minerals, nitrogen output decreased by 12% (table 1).

Structure of the Mineral Industry

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 companies based in other EU member states.

Mineral Trade

Belgium exported a total \$382.5 billion¹ in goods and services in 2016, which was an increase of 0.5% compared with that of 2015, and it imported a total of \$357.6 billion worth of goods and services, which was a decrease of 0.6%. In 2016, mineral products were the fifth-ranked export category of Belgium, accounting for 7.5% of total exports; the value of mineral product exports decreased by 16.3% compared with that of that of 2015. Base metals exports made up 6.9% of total exports and decreased in value by 2.6%, whereas exports of precious metals and stones accounted for 4.7% of the total and increased in value by 5%. In 2016, mineral products were the fourth-ranked import category; these imports accounted for 11.2% of total imports and decreased in value by 16.2% compared with that of 2015. Base metals imports made up 6.6% of total imports and decreased in value by 2.5%, whereas imports of precious metals and stones accounted for 4.7% of total imports and increased in value by 4.7% (Belgian Foreign Trade Agency, 2017a, p. 1, 4, 5).

In 2016, Belgium was a leading exporter of multiple minerals and mineral products globally. The country was the world's leading exporter of zinc bars, rods, profiles, and wire, accounting for 48.9% of world exports, as well as master alloys of copper (38%), and dolomite (30.8%). It was the second-ranked exporter of nitric acid (accounting for a 16.3% share of the world's exports); kaolin and other kaolinitic clays (13.2%); articles of asbestos cement (11.6%); and copper wire (7.4%) and the third-ranked exporter of worked and nonworked diamond (12.5%); quicklime, slaked lime, and hydraulic lime (8.6%); and nitrites and nitrates (7.5%). Belgium ranked ninth globally in exports of steel, which were shipped to more than 160 countries. Diamond, which was the country's leading mineral export, was valued at \$15.3 billion in 2016 (Belgian Foreign Trade Agency, 2017a, p. 6; 2017b, p. 3–8; U.S. International Trade Administration, 2017, p. 1; World Steel Association, 2017b, p. 27).

Commodity Review

Metals

Cobalt and Specialty Metals.—N.V. Umicore S.A., which was one of the world's leading metal recyclers and processors, produced about 1,500 metric tons (t) of refined cobalt in Olen, Belgium. In 2016, the company increased its global cobalt production to 3,164 t from 3,080 t in 2015; this output included the refined cobalt production from its facilities in Belgium and China. Umicore did not report the breakdown of its cobalt output by country and thus its production in Belgium

is estimated. Olen was a cobalt and specialty materials plant where Umicore produced arsenic trioxide, cobalt and cobalt compounds, manganese compounds, and nickel compounds. In 2016, the company installed a new cobalt-refining facility in Olen that would increase its ability to recycle cobalt and nickel-bearing residues. In the summer of 2016, a new wastewater treatment facility opened, and four wind turbines were commissioned on the site with a total capacity of 14 megawatts. In October 2016, the windmills began providing energy to the plant. Future projects included a production facility for large germanium wafers. Umicore was also in the process of expanding the capacity of its major metals recycling plant in Hoboken to 500,000 metric tons per year (t/yr) from 350,000 t/yr. The company recovered base metals (copper, lead, and nickel), precious metals (gold, iridium, palladium, platinum, rhodium, ruthenium, and silver), secondary metals (antimony, bismuth, and tin), and special metals (indium, selenium, and tellurium) in Hoboken (Umicore Group, 2015; 2017a–c; Cobalt Institute, 2017).

Copper, Lead, and Tin.—Metallo Belgium, which was a subsidiary of Metallo Group, had a production capacity of about 10,000 metric tons per month (t/mo) of copper anodes and about 3,000 t/mo of copper cathodes at its plant in Beerse. The company also produced about 2,000 t/mo of soft and hard lead ingots and up to 1,000 t/mo of tin ingots. Metallo Group, which had facilities in Belgium and Spain, was the leading producer of pure tin in Europe; the product was entirely “low lead” (less than 100 parts per million) and was registered on the London Metal Exchange (LME) as “MC” brand. The company refined metal products by casting anode copper into anode molds to supply the tank house, resulting in cathodes. Tin and lead were separated from the anode copper in a first step, and, in a second step, tin and lead were separated from each other through vacuum distillation (Metallo Group, 2017; Taylor, 2017).

Iron and Steel.—In 2016, Belgium was the 20th-ranked crude steel producer globally, producing 7.7 million metric tons (Mt) compared with 7.3 Mt in 2015. All output was continuously cast steel. About 70% of the country's crude steel output was produced by oxygen process, and the remaining 30% was produced using electric arc furnaces. Belgium exported 16.7 Mt of semifinished and finished steel products in 2016 compared with 15.2 Mt in 2015 and ranked 9th globally; it imported 13 Mt in 2016, which ranked it 11th globally. The country imported 6.6 Mt of iron ore in 2016. It exported 3.5 Mt of ferrous scrap in 2016 compared with 3.2 Mt in 2015, and it imported 4.1 Mt of ferrous scrap compared with 4.2 Mt in 2015 (World Steel Association, 2017a, p. 53; 2017b, p. 9, 10, 11, 20, 22, 27).

ArcelorMittal S.A. of Luxembourg, which was the world's leading producer of steel in 2016, was also the leading producer of steel and steel products in Belgium from four sites. NLMK Group of Russia, which had two steel product plants in Belgium, was another major steel producer in the country. ArcelorMittal was in the process of constructing the first commercial-scale production facility in Europe in Belgium to produce bioethanol from steel mill waste. The “Steelanol” (steel + ethanol) project would use a patented process from LanzaTech to convert carbon monoxide (CO) gas generated from steelmaking at the Ghent plant into ethanol, which could be used as biofuel

¹Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR 0.94=US\$1.00 for 2016.

and thus reduce the environmental impact of steel production. Construction began in October 2015 and bioethanol production was expected to start in mid-2017 with a total capacity of 47,000 t/yr of ethanol. In January 2016, ethanol production was successfully tested on a live steel waste-gas stream at the Ghent plant (Biovox, 2016; Steelanol, 2016; World Steel Association, 2017b, p. 8).

Zinc.—Nyrstar N.V. (a leading producer of zinc globally) operated the Balen smelter, which was one of the world's largest zinc smelters in terms of production quantity. In 2016, the company's Balen and Overpelt smelters produced 236,000 t of zinc metal and the Balen smelter produced 317,000 t of sulfuric acid. The two facilities were located 18 kilometers apart and were complementary and highly integrated. Cathodes produced at Balen and Auby, France, were transported to the centralized melting and casting facilities in Overpelt. The Overpelt site included one of Europe's largest oxide washing facilities for the pretreatment of purchased secondary material prior to supplying it to Nyrstar's smelters in Europe. The Balen smelter produced zinc from the feedstock of both zinc concentrates and recycled zinc secondary feed materials. Balen's zinc concentrates were sourced from suppliers worldwide. The Balen and Overpelt operations produced special high-grade (SHG) zinc and a range of high-value alloy products, such as diecasting alloy. Balen also produced copper cement and a leach product that contained lead and precious metals and was sold as a raw material to secondary smelters (Nyrstar N.V., 2017, 2018).

Industrial Minerals

Cement.—Four cement-producing companies operated eight plants with a total production capacity of 8.4 million metric tons per year (Mt/yr) in Belgium in 2016. S.A. Cimenteries CBR (a subsidiary of HeidelbergCement Group of Germany) was Belgium's leading cement producer, with a total capacity of 3 Mt/yr. The company acquired the 0.75-Mt/yr-capacity Espabel grinding unit in Ghent in 2014. Renamed Ghent II, the Espabel plant also had the capacity to produce 150,000 t/yr of white cement. Cimenteries closed the 210,000-t/yr-capacity Harmignies white cement plant because of low demand. In October 2016, Compagnie des Ciments Belges-CCB S.A., which was the third-ranked cement producer in Belgium, was acquired by Aalborg Portland SA of Denmark from Italcementi of Italy as required by HeidelbergCement's acquisition of the latter. Cemminerals NV was in the process of constructing a new grinding mill in Kluizendok at the Port of Ghent; the mill would have a production capacity of 700,000 t/yr and was scheduled to begin operations in 2018 (HeidelbergCement Group, 2016; International Cement Review, 2017, p. 52–53).

Diamond.—The city of Antwerp remained the trading hub of the global diamond market. Belgium's top trading partners were, in diamond, in descending order, the United States, Hong Kong, and India. In 2016, the quantity of Antwerp's trade in diamond increased by 5%. A total of 202 million carats of rough and polished diamond valued at \$48 billion was traded in Antwerp. In 2016, 5.4 million carats of polished diamond valued at \$11.8 billion was exported from Antwerp, which was a decrease of 9% in amount and 10% in value compared with that of 2015. Six million carats of polished diamond valued at \$11.4 billion

was imported to Antwerp, which was a decrease of 7% in amount and 10% in value. Exports of rough diamond totaled 100.8 million carats valued at \$12.7 billion, which was an increase of 5% in terms of amount and 11% in terms of value. Imports of rough diamond totaled 90 million carats valued at \$12.1 billion, which was an increase of 7% in terms of amount and 9% in terms of value (Rapaport News, 2016; Antwerp World Diamond Centre, 2017).

The Antwerp diamond industry experienced a recovery in 2016 after reduced trading in 2015 owing to declining global demand worldwide. In particular, the rough diamond market, which formed the heart of the diamond trade, made a strong recovery. The Antwerp World Diamond Centre (AWDC) worked to bring more rough diamond onto the Antwerp market. Although the overall declining trend on the polished diamond market persisted in 2016, AWDC reinforced Antwerp's position on the rough diamond market by increasing the number of rough diamond tenders. To this end, AWDC sought out new markets in such diamond-producing countries as Brazil and maintained its existing relationships with leading producers, such as ALROSA of Russia. The downward trend in polished diamond trading remained a consistent phenomenon across the international diamond trade in 2016. This was mainly owing to decreased trade with India and low economic growth in the BRIC countries of Brazil, Russia, India, and China (Antwerp World Diamond Centre, 2017).

Mineral Fuels and Related Materials

Refined Petroleum Products.—Belgium had four active refineries located in Antwerp with a total crude distillation capacity of about 782,000 barrels per day (bbl/d), which was equivalent to 39 Mt/yr. Capacity utilization was about 93%. The desulfurization capacity of the refineries had been increased to about 780,000 bbl/d in 2013 in order to comply with the new EU specifications on reduced sulfur content for gasoline and diesel. The two largest refineries, which were owned by Total S.A. of France and Exxon Mobil Corp. of the United States, were among the largest in Europe and produced a high yield of light and middle distillates. The refined petroleum products output of the four refineries was sufficient to meet domestic demand for diesel, gasoline, jet kerosene, and residual fuels; however, production was lower than domestic consumption of ethane, liquefied petroleum gases (LPG), and naphtha. Belgium relied on imports for all its crude petroleum needs, including natural gas liquids (NGLs) and refinery feedstocks. Russia was the leading source of the country's petroleum imports (International Energy Agency, 2016, p. 59–64).

Outlook

Belgium is likely to remain a leading metal processor and major diamond trader globally and retain its significant role in international cargo handling of mineral products through its Ports of Antwerp and Zeebrugge. The continuing improvement of the global economy and international trade will have a positive effect on the production and trading activities of Belgium's mineral industry. The country's production of base metals, precious metals, and special metals is expected to

increase with Umicore's capacity expansion in Hoboken and Olen. Cement and steel output may show an increase if faster economic growth occurs in Europe.

References Cited

- Anderson, C.S., 2018a, Selenium: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 146–147.
- Anderson, C.S., 2018b, Tellurium: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 166–167.
- Antwerp World Diamond Centre, 2017, Antwerp diamond trade grows 5% in 2016 after difficult 2015: Antwerp World Diamond Centre, February 1. (Accessed March 2, 2018, at <https://www.awdc.be/en/antwerp-diamond-trade-grows-5-2016-after-difficult-2015>.)
- Belgian Foreign Trade Agency, 2017a, Foreign trade statistics—01-12/2016: Brussels, Belgium, Belgian Foreign Trade Agency, 8 p. (Accessed March 2, 2018, at http://www.abh-ace.be/sites/default/files/Trimestrial_notes_and_brochures/com122016eng_0.pdf.)
- Belgian Foreign Trade Agency, 2017b, Most important products exported by Belgium in 2016: Brussels, Belgium, Belgian Foreign Trade Agency, 16 p. (Accessed March 2, 2018, at http://www.abh-ace.be/sites/default/files/Statistics/Most_important_Belgian_export_products/belgiums_most_important_export_products-2016.pdf.)
- Biovex, 2016, Biofuel production from steel mill waste—Steelanol: Biovex, February 16. (Accessed March 1, 2018, at <https://biovox.eu/insights/detail/biofuel-production-from-steel-mill-waste-steelanol>.)
- Cobalt Institute, 2017, Cobalt production statistics: Cobalt Institute. (Accessed March 1, 2018, at <https://www.cobaltinstitute.org/statistics.html>.)
- Environment, Nature and Energy Department [Flanders], 2017, Mineral resources in Flanders: Flanders, Belgium, Environment, Nature, and Energy Department, 24 p. (Accessed February 28, 2018, at <http://ebf.vlaanderen.be/publications/documents/27876>.)
- European Commission, 2017, Country summaries—Belgium: Brussels, Belgium, European Commission. (Accessed March 1, 2018, at <https://ec.europa.eu/assets/jrc/mininventory/country-summaries8c77.html?country=Belgium>.)
- European Commission, 2018a, Flanders—Industry: Brussels, Belgium, European Commission. (Accessed March 1, 2018, at <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/flanders>.)
- European Commission, 2018b, Wallonia—Industry: Brussels, Belgium, European Commission. (Accessed March 1, 2018, at <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/wallonia>.)
- European Union, 2017a, Belgium—Energy: European Committee of the Regions, European Union. (Accessed March 1, 2018, at <https://portal.cor.europa.eu/divisionpowers/Pages/Belgium-Energy.aspx>.)
- European Union, 2017b, Belgium—Introduction: European Committee of the Regions, European Union. (Accessed March 1, 2018, at <https://portal.cor.europa.eu/divisionpowers/Pages/Belgium-Introduction.aspx>.)
- George, M.W., 2018, Arsenic: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 24–25.
- HeidelbergCement Group, 2016, HeidelbergCement completes sale of assets in Belgium to Cementir Holding in the context of the Italcementi acquisition: HeidelbergCement Group press release, October 25. (Accessed March 2, 2018, at <https://www.heidelbergcement.com/en/pr-25-10-2016>.)
- International Cement Review, 2017, Belgium, in *The global cement report* (12th ed.): Dorking, United Kingdom, International Cement Review, p. 52–53.
- International Energy Agency, 2016, Energy policies of IEA countries—Belgium 2016 review: Paris, France, International Energy Agency, April, 173 p. (Accessed February 27, 2018, at https://www.iea.org/publications/freepublications/publication/Energy_Policies_of_IEA_Countries_Belgium_2016_Review.pdf.)
- Jasinski, S.M., 2018, Mica (natural): U.S. Geological Survey Mineral Commodity Summaries 2018, p. 108–109.
- Klochko, Kateryna, 2018a, Antimony: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 22–23.
- Klochko, Kateryna, 2018b, Bismuth: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 34–35.
- Metallo Group, 2017, Metallo Belgium: Metallo Group. (Accessed March 2, 2018, at <https://www.metallo.com/about>.)
- National Bank of Belgium, 2017, Report 2016—Detailed statistical tables: Brussels, Belgium, National Bank of Belgium, February, 41 p.
- Nyrstar N.V., 2017, Resources for a changing world—Balén/Overpelt smelter: Nyrstar N.V., 2 p. (Accessed March 2, 2018, at <http://www.nyrstar.com/~media/Files/N/Nyrstar/operations/melting/fact-sheet-balen-overpelt-en.pdf>.)
- Nyrstar N.V., 2018, Balén/Overpelt—Belgium: Nyrstar N.V. (Accessed March 2, 2018, at <http://www.nyrstar.com/en/about-us/operations/metals-processing>.)
- Olson, D.W., 2018, Gemstones: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 66–67.
- Polyak, D.E., 2018, Rhenium: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 134–135.
- Rapaport News, 2016, Belgium's diamond trade slumps in June: Diamonds.net, June 12. (Accessed October 13, 2018, at <https://www.diamonds.net/News/NewsItem.aspx?ArticleID=57545&ArticleTitle=Belgium+Diamond+Trade+Slumps+in+June>.)
- Schnebele, E.K., 2018, Iodine: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 80–81.
- Statbel, 2018, Production in industry: Brussels, Belgium, Statbel, February. (Accessed February 28, 2018, at <https://statbel.fgov.be/en/themes/indicators/production/production-industry#figures>.)
- Steelanol, 2016, Ethanol production successfully tested on live steel waste gas stream of ArcelorMittal Gent: Steelanol, January 13. (Accessed March 1, 2018, at <http://www.steeanol.eu/en/news/ethanol-production-in-gent-successfully-tested-on-real-steel-waste-gas-stream>.)
- Tanner, A.O., 2018, Iron oxide pigments: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 90–91.
- Taylor, Brian, 2017, Innovation and reinvention: Recycling Today. (Accessed March 2, 2018, at <http://magazine.recyclingtoday.com/article/scrap-metals-supplement-2017/innovation-and-reinvention.aspx>.)
- Thomas, C.L., 2018, Germanium: U.S. Geological Survey Mineral Commodity Summaries 2018, p. 68–69.
- Umicore Group, 2015, Umicore set to invest in cobalt refining and recycling plant in Olen, Belgium: Umicore Group press release, September 30, 1 p. (Accessed March 2, 2018, at <http://www.umicore.com/pdf/umicore-set-to-invest-in-cobalt-refining-and-recycling-plant-in-olen-belgium.pdf>.)
- Umicore Group, 2017a, Hoboken expansion—A major investment tackles a global challenge: Umicore Group. (Accessed March 2, 2018, at <http://www.umicore.com/en/cases/hoboken/>.)
- Umicore Group, 2017b, Olen—Charging for the future: Umicore Group. (Accessed March 2, 2018, at <http://annualreport.umicore.com/performance/case-studies/olen-charging-for-the-future/>.)
- Umicore Group, 2017c, Precious metals refining: Umicore Group. (Accessed March 2, 2018, at <http://pmr.umicore.com/>.)
- U.S. Commercial Service, 2017, Belgium—Market overview: Brussels, Belgium, U.S. Commercial Service, July 5. (Accessed March 1, 2018, at <https://www.export.gov/article?id=Belgium-Market-Overview>.)
- U.S. International Trade Administration, 2017, Steel exports report—Belgium: Washington, DC, U.S. Department of Commerce Global Steel Trade Monitor, December, 8 p. (Accessed February 26, 2018, at <https://www.trade.gov/steel/countries/pdfs/2017/q3/exports-belgium.pdf>.)
- World Steel Association, 2017a, Steel statistical yearbook 2017: Brussels, Belgium, World Steel Association, November, 123 p. (Accessed February 25, 2018, at <https://www.worldsteel.org/en/dam/jcr:3e275c73-6f11-4e7f-a5d8-23d9bc5c508f/Steel+Statistical+Yearbook+2017.pdf>.)
- World Steel Association, 2017b, World steel in figures 2017: Brussels, Belgium, World Steel Association, 30 p. (Accessed February 25, 2018, at <https://www.worldsteel.org/en/dam/jcr:0474d208-9108-4927-ace8-4ac5445c5df8/World%2520Steel%2520in%2520Figures%25202017.pdf>.)

TABLE 1
BELGIUM: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2012	2013	2014	2015	2016
METALS					
Cobalt, refinery production, Co content ^e	-- ^r	-- ^r	1,300 ^r	1,500 ^r	1,500
Copper:					
Refinery production:					
Primary	234,000 ^r	229,000 ^r	228,300 ^r	226,100 ^r	217,900
Secondary	158,000 ^r	158,000 ^r	159,000 ^r	152,500 ^r	148,800
Smelter production, secondary	118,600 ^r	150,600	143,100	141,000	143,800
Indium, refinery production, primary, In content kilograms	30,000	30,000	28,000	20,000	20,000 ^e
Iron and steel:					
Pig iron thousand metric tons	4,073 ^r	4,343	4,388 ^r	4,248	4,869
Crude steel do.	7,301 ^r	7,093 ^r	7,331 ^r	7,257 ^r	7,687
Products, hot-rolled do.	8,917	8,293	8,392	8,938 ^r	8,735
Lead, refinery production, secondary	119,000	129,000	132,000	130,000 ^r	141,000
Tin, smelter production, secondary	11,400	10,300	9,700	8,800	8,500
Zinc, smelter production, primary, slab	250,000	252,000	262,000	260,000	236,000
INDUSTRIAL MINERALS					
Cement, hydraulic thousand metric tons	6,280	6,119	6,364	6,275 ^r	6,255
Lime	1,404,256	1,404,256	1,481,226	1,400,000 ^e	1,400,000 ^e
Nitrogen, ammonia, N content	794,000	885,000	817,000	861,000	755,000
Sulfur, all forms and sources, unspecified, S content	382,100	396,900	400,000 ^e	400,000 ^e	400,000 ^e
MINERAL FUELS AND RELATED MATERIALS					
Petroleum, refinery production:					
Diesel thousand 42-gallon barrels	93,802 ^r	82,948 ^r	99,733 ^r	100,143 ^r	106,000 ^e
Gasoline do.	38,402 ^r	35,758 ^r	38,939 ^r	41,848 ^r	44,000 ^e
Jet fuel, kerosene do.	14,425 ^r	11,871 ^r	13,211 ^r	13,370 ^r	14,000 ^e
Kerosene, other do.	271 ^r	201 ^r	155 ^r	216 ^r	200 ^e
Liquefied petroleum gas do.	6,728 ^r	6,682 ^r	8,201 ^r	7,784 ^r	8,000 ^e
Naphtha do.	15,536 ^r	19,021 ^r	21,117 ^r	18,594 ^r	20,000 ^e
Fuel oil do.	35,787 ^r	33,970 ^r	38,088 ^r	36,664 ^r	39,000 ^e
Total do.	205,000 ^r	190,000 ^r	219,000 ^r	219,000 ^r	231,000

^eEstimated. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through March 2, 2018. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the commodities listed, secondary aluminum, arsenic, bismuth metal, dolomite, kaolin, manganese compounds, nickel compounds, quicklime, selenium, sodium sulfate, and worked and natural stone may have been produced in Belgium, but available information was inadequate to make reliable estimates of output.

TABLE 2
BELGIUM: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cadmium, metal	metric tons	N.V. Umicore S.A.	Hoboken	1,800
Cement		Major companies, of which:	Plants, of which:	
Do.		Cimenteries CBR S.A. (Heidelberg Cement Group)	Major plants at Lixhe, Antoing, and Ghent	3,000
Do.		Holcim Belgique S.A. (LafargeHolcim Ltd.)	Plants at Obourg and Antwerp	2,100
Do.		Compagnie des Ciments Belges-CCB S.A. (Aalborg Portland S.A.)	Plant at Gaurain-Ramecroix	1,800
Do.		VVM NV (CRH plc.)	Plants at Ghent and Antwerp	1,500
Cobalt, refined	metric tons	N.V. Umicore S.A.	Refinery at Olen	1,500 ^c
Copper, secondary		Metallo Belgium (Metallo Group)	Smelter at Beerse	160
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
Do.		Metallo Belgium (Metallo Group)	Smelter at Beerse	12
Limestone		Carneuse 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 barrels per day	Total S.A.	Refinery at Antwerp	332,900
Do.	do.	ExxonMobil Petroleum & Chemical B.V.B.A. (Exxon Mobil Corp., 100%)	do.	307,000
Do.	do.	Belgian Refining Corp. (Gunvor Group)	do.	102,100
Do.	do.	ATPC (Vitol Group)	do.	39,900
Salt		Zoutman N.V.	Plant at Roeselare	200
Sand, silica		SRC-Sibelco S.A.	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
Sulfur		Nyrstar N.V.	Smelter at Balen	350
Tin		Metallo Belgium (Metallum Group, 100%)	Smelter at Beerse	12
Zinc, metal		Nyrstar N.V.	Smelter at Balen	290 ^c
Do.		do.	Smelter at Overpelt	350 ^c

^cEstimated. Do., do. Ditto.