



2015 Minerals Yearbook

BOSNIA AND HERZEGOVINA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF BOSNIA AND HERZEGOVINA

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Bosnia and Herzegovina was not a significant world producer of mineral commodities, although the country had substantial metallic mineral resources. Metal ores mined in Bosnia and Herzegovina included bauxite, iron, and lead-zinc ores. The metallurgical sector produced aluminum and steel. Mineral fuels produced in the country included coke, lignite, and subbituminous coal. The country's production of electricity exceeded domestic demand, and it was a net exporter of electrical energy. The country was prospective for petroleum and natural gas. Industrial minerals produced included barite, cement, clays, crushed stone, dimension stone, dolomite, gypsum and anhydrite, lime, salt, and sand and gravel (table 1; Foreign Investment Promotion Agency of Bosnia and Herzegovina, 2013, p. 6; 2015a, p. 9, 11; U.S. Department of State, 2016, p. 63).

Minerals in the National Economy

Bosnia and Herzegovina's real gross domestic product (GDP) increased by 2.8% in 2015—a growth rate that was notably higher than the 1.08% rate of growth in 2014, when the country had significant flooding. The nominal GDP in 2015 was \$15.8 billion. The economic growth in 2015 was attributed to increased economic activity in Europe, as well as increased domestic industrial activity and exports, which, together with the decrease in fuel prices, boosted incomes and consumption. The unemployment rate remained high, however, at 27.7% of the total labor force (International Monetary Fund, 2015, p. 1; 2016).

Mining and quarrying accounted for about 2.0% of the country's GDP in 2015, which was unchanged from the percentage in 2014. The mining of coal and lignite made up about 65% of total mining and quarrying sector production, in terms of value, whereas the mining of metal ores accounted for about 23%. Manufacturing accounted for about 11.6% of the GDP, which was a slight increase from the 11% share in 2014. The manufacture of base metals (those not considered precious) accounted for about 14.1% of total manufacturing output, in terms of value; the manufacture of fabricated metal products (except machinery and equipment) accounted for 8.6%; the manufacture of coke and refined petroleum products, 8.0%; and the manufacture of nonmetallic mineral products, 4.0%. Construction accounted for about 4% of the GDP in 2015, which was unchanged from the percentage in 2014 (Agency for Statistics of Bosnia and Herzegovina, 2016b, p. 3; 2016d, p. 2).

In 2015, the year-on-year rate of growth in the mining and quarrying sector overall was 3.5%. The year-on-year rate of growth in the mining of metal ores was 11.6%; that of coal and lignite, 1.9%; and that of all other mining and quarrying, 5.6%. The year-on-year rate of growth in the manufacturing sector was 4.8% in 2015; that of the manufacture of fabricated metal

products (except machinery and equipment) was 9.6%; and that of base metals was 1.3%. The year-on-year rate of growth in the manufacture of coke and refined petroleum products decreased by 1.1%; that of nonmetallic mineral products, by 0.7%; and that of the energy sector, by 0.8% (Agency for Statistics of Bosnia and Herzegovina, 2016e, p. 5).

By the end of December 2013, foreign direct investment (FDI) in the metal sector amounted to 527.8 million convertible marks (BAM) (\$358.3 million¹), of which 33.4% (176.3 million BAM, or \$119.7 million) was invested in the production of fabricated metal products (except machinery and equipment), and 9.3% (49.6 million BAM, or \$33.7 million) was invested in base metals (Foreign Investment Promotion Agency of Bosnia and Herzegovina, 2015b, p. 13).

Government Policies and Programs

The two main political entities that make up Bosnia and Herzegovina are the Federation of Bosnia and Herzegovina, which encompasses the central and western regions of the country, and the Republika Srpska (RS), which encompasses the northern and eastern regions. Each entity has its own government regulatory agencies responsible for mineral, environmental protection, and energy-related activities. In the Federation of Bosnia and Herzegovina, the Federal Ministry of Energy, Mining and Industry sets the policies for the use of natural resources and for energy. Relevant regulations governing the mining sector include the Law on Mining No. 26/10 of 2010; the Law on Geological Survey No. 9/10 of 2010; the Law on Environmental Protection No. 33/03 of 2003, as amended by law No. 38/09 of 2009; and the Law on Concessions No. 40/02 of 2002, as amended by law No. 61/06 of 2006 (Marinkovic and Dzaferovic, 2015, p. 47, 49; United Nations Environment Programme, 2016a; U.S. Central Intelligence Agency, 2016).

The Federation of Bosnia and Herzegovina established the Law on Research and Exploitation of Oil and Gas in 2013. This law governs hydrocarbon research and exploration and includes environmental regulations for hydrocarbon extraction. The Government's target for the share of national energy consumption from renewable sources was 40% by 2020; no country-wide plan was in place for development of the renewable energy sector (European Commission, 2014, p. 49; 2015, p. 53; Marinkovic and Dzaferovic, 2015, p. 49).

In the Republika Srpska, the Ministry of Industry, Energy and Mining sets the policies for the use of natural resources and for the production and use of electric energy and biofuels.

¹Where necessary, values have been converted from Bosnia and Herzegovina convertible mark (BAM) to U.S. dollars (US\$) at an average annual exchange rate of BAM1.7625=US\$1.00 for 2015; and BAM1.4739=US\$1.00 for 2014; and BAM1.4731=US\$1.00 for 2013.

The relevant regulations governing the mining sector include the Law on Mining No. 107/05 of 2005 as amended by law No. 75/10 of 2010; the Law on Energy No. 49/09 of 2009; the Law on Geological Survey No. 51/04 of 2004; and the Law on Concessions No. 20/02 of 2002, as amended by law Nos. 91/06 of 2006 and 92/09 of 2009 (United Nations Environment Programme, 2016b).

Production

In 2015, the production of kaolin increased by more than 1,000%; marble and travertine, by 194%; chalk, by 171%; silica sand and gravel, by about 130% each; alumina and construction sand, by about 47% each; bauxite, by 30%; lead (ores and concentrates), by an estimated 19%; and limestone and sodium bicarbonate, by about 10% each. The reasons for the significant increases include the completion of orders from the previous year, and, in the case of gravel production, the inclusion of new companies in the 2015 data (table 1).

In 2015, the production of granite decreased by 80%; slate, by 61%; dolomite, by 34%; bentonite and lead (secondary metal), by 17% each; gypsum and anhydrite, by 13%; zinc ore and concentrate, by an estimated 13%; and unwrought aluminum, by 10% (table 1).

Structure of the Mineral Industry

The major mineral production companies in Bosnia and Herzegovina were privately owned, with the exception of the two major coal-powered electrical-utility companies, Elektroprivreda BiH and Elektroprivreda Republike Srpske and their associated coal mines, which were owned by the Government. The government of the Federation of Bosnia and Herzegovina owned a 90.4% share of Elektroprivreda BiH, and the government of the Republika Srpska owned 100% of Elektroprivreda Republike Srpske. The Government also had a 44% stake in Aluminij d.d. Mostar (Aluminij), but announced in June that Aluminij would be put up for sale (Elektroprivreda Republike Srpske, 2009a; Sito-Sucic, 2015; JP Elektroprivreda BiH d.d. Sarajevo, 2016).

About 80% of the companies within the metal-processing sector were small companies, 15% were medium sized, and only 5% were large companies. The two leading large-scale mineral commodity producers, Aluminij and the steel producer ArcelorMittal Zenica d.o.o., accounted for most of the metal sector's output and employment. Table 2 is a list of major mineral industry facilities (table 2; Foreign Investment Promotion Agency of Bosnia and Herzegovina, 2014; U.S. Department of State, 2016, p. 61).

Mineral Trade

In 2015, the total value of Bosnia and Herzegovina's exports was 8.99 billion BAM (\$5.1 billion), which was an increase of 3.5% compared with the value in 2014. Exports to European Union (EU) countries were valued at 6.45 billion BAM (\$3.71 billion), which was 3% higher than in 2014, and exports to countries in the Central European Free Trade Agreement (CEFTA) were valued at 1.33 billion BAM (\$754.6 million), which was 1.8% lower than in 2014. The total value of imports

into Bosnia and Herzegovina in 2015 was 15.85 billion BAM (\$8.99 billion), which was a decrease of 2.1% from that of 2014. Imports from EU countries were valued at 9.95 billion BAM (\$5.64 billion), which was 1.1% higher than in 2014, and those from CEFTA countries were valued at 1.957 billion BAM (\$1.11 billion), which was 5% higher than in 2014 (Agency for Statistics of Bosnia and Herzegovina, 2016a, p. 1).

In 2015, 72% of Bosnia and Herzegovina's exports went to EU countries. The country's top five export partners were Germany (which received 16% of Bosnia and Herzegovina's exports, by value), Italy (14%), Croatia (10%), Serbia (9%), and Slovenia (8%). Also in 2015, 61% of Bosnia and Herzegovina's imports originated from EU countries. The top five import partners were Germany (which supplied 12% of Bosnia and Herzegovina's imports, by value); Italy, Serbia, and Croatia (11% each); and China (6%) (Agency for Statistics of Bosnia and Herzegovina, 2016a, p. 6–8).

In 2015, the value of exported mined and quarried mineral commodities decreased by 14.9% compared with that of 2014, to 97.06 million BAM (\$55.07 million), or 1.1% of the value of all exports. Exports of base metals were valued at 1.07 billion BAM (\$606.16 million), or 11.9% of the value of all exports; fabricated metal products (except machinery and equipment) were valued at 745.05 million BAM (\$422.73 million), or 8.3%; coke and refined petroleum products were valued at 307.78 million BAM (\$174.63 million), or 3.4%. Exports of nonmetallic mineral products, metal ores, coal and lignite, and other mining and quarrying exports were each valued at less than 1% of the value of all exports (Agency for Statistics of Bosnia and Herzegovina, 2016a, p. 19–20, 22–23).

In 2015, the value of mining and quarrying imports decreased by 26.2% to 1.13 billion BAM (\$641.5 million), or 7.1% of the value of all imports. Imports of base metals were valued at 1.02 billion BAM (\$579.73 million), or 6.4% of the value of all imports; coke and refined petroleum products were valued at 945.9 million BAM (\$536.68 million), or 6%; crude petroleum and natural gas were valued at 772.93 million BAM (\$438.55 million), or 4.9%; fabricated metal products, except machinery and equipment, were valued at 647.85 million BAM (\$367.58 million), or 4.1%; other nonmetallic mineral products were valued at 391.32 million BAM (\$222.03 million), or 2.5%; and coal and lignite were valued at 308.89 million BAM (\$175.25 million), or 1.9%. Imports of metal ores and other mining and quarrying commodities were each valued at less than 1% of the value of all imports (Agency for Statistics of Bosnia and Herzegovina, 2016a, p. 19–23).

The value of Bosnia and Herzegovina's exports to the United States decreased by 7%, to \$78.3 million in 2015 from \$84.1 million in 2014. Mineral-related exports to the United States included, in descending order of value, finished metal shapes valued at \$2.4 million; tin, \$1.3 million; iron and steel products, \$412,000; and advanced iron and steel products, \$127,000. The value of Bosnia and Herzegovina's imports from the United States decreased by 40.1%, to \$27.6 million in 2015 from \$46.1 million in 2014. Mineral-related imports from the United States included, in descending order of value, metallurgical-grade coal valued at \$7.1 million; specialized mining equipment, \$129,000; petroleum products, \$92,000;

finished metal shapes, \$69,000; manufactured mineral supplies, \$41,000; and aluminum and alumina, \$16,000 (U.S. Census Bureau, 2016a, b).

Commodity Review

Metals

Bauxite and Alumina and Aluminum.—Alumina d.o.o. Zvornik (Alumina) was the only producer of alumina in Bosnia and Herzegovina. The company's alumina plant in the industrial zone of Zvornik had a production capacity of 600,000 metric tons per year (t/yr); production in 2015 increased by 47% to 250,845 metric tons (t) from 170,646 t in 2014. The company initiated bankruptcy proceedings in April 2013, citing financial losses and increasing debt owing to the high cost of natural gas and decreases in the prices of alumina and aluminum on world markets. The company had been diversifying its production, reducing its loss-making metallurgical alumina production, and increasing production of zeolites and hydrates. In October, Alumina announced the completion of a 1.1 million BAM (\$0.6 million) project to expand the production of zeolites. The project increased the company's production capacity to 80,000 t/yr from 60,000 t/yr. In 2015, the company reported positive financial operations and cited an increase in total sales of 19% compared with that of 2014 (Zuvela, 2013; eKapija, 2015a, 2016; Alumina d.o.o. Zvornik, 2016).

The alumina plant in Zvornik was supplied with bauxite from mines in the Milici region, which were operated by Boksit a.d. Milici (Boksit). The core business of the company was the extraction of bauxite ores from open cast and underground mines, but it was also engaged in extraction of associated minerals, including quartz sand and aggregates (limestone, quartzite, and zeolites). Contracts signed between Boksit and Alumina in 2015 called for the delivery of 370,000 t of bauxite to the Alumina plant in 2015 (eKapija, 2015b; Boksit a.d. Milici, 2016).

Aluminij d.d. Mostar (Aluminij) was Bosnia and Herzegovina's only producer of primary aluminum and the country's leading exporter. The company's smelter at Mostar had a production capacity of 160,000 t/yr and produced 125,000 t of primary aluminum in 2015, which was about the same as in 2014. At the beginning of 2015, the company's debt was 213.8 million BAM (\$145 million), more than one-half of which was owed to the state-owned power company Elektroprivreda Hrvatske Zajednice Herceg Bosne (EPHZHB) d.d. Mostar; the rest was for outstanding loans and accounts. A debt agreement reached in September 2014 between the government of the Federation of Bosnia and Herzegovina and the EPHZHB enabled Aluminij to stop accumulating new debt and to stabilize its production. After losses in recent years, the company reported a profit of 7.5 million BAM (\$4.3 million) for the first half of 2015. The company reportedly required an investment of about \$4 million to \$5 million to maintain its current production capacity and an additional \$10 million to return to its production capacity of 2011 (Daskalovic, 2015; Matejak, 2015; Poslovni dnevnik, 2015; Sito-Sucic, 2015).

Iron and Steel.—ArcelorMittal Prijedor d.o.o. was an iron ore mining project that was jointly owned by ArcelorMittal S.A.

of Luxembourg (ArcelorMittal) (51%) and Rudnici Zeljezne Rude "Ljubija" a.d. Prijedor (49%). In 2015, the company produced 2.1 million metric tons (Mt) of iron ore concentrate, lumps, and fines. The iron ore deposit at the project consists of the Jezero and the Buvac ore bodies but, since 2011, ore had been produced only from the Buvac open pit. Most of the iron ore produced was shipped to ArcelorMittal's Zenica steel plant located approximately 243 kilometers (km) to the south of Prijedor. The steel plant was owned by ArcelorMittal Zenica d.o.o., which was a subsidiary of ArcelorMittal. Some iron ore was shipped to ArcelorMittal's steel plants in the Czech Republic and Poland. In 2015, the run-of-mine production was 2.7 Mt. The salable production of 2.1 Mt included direct-shipping ore with iron content ranging from 55% to 60% and was intended for use at ArcelorMittal's steel plants. As of December 31, 2015, the proven reserves were 7 Mt at a grade of 45.5% Fe and the probable reserves were 14 Mt at a grade of 45.9% Fe. The estimated mine life was 8 years. ArcelorMittal Prijedor held the mineral rights to more than 4,900 acres for the purpose of supporting ArcelorMittal's steel operations at Zenica. In 2014, ArcelorMittal Prijedor employed 860 people (ArcelorMittal S.A., 2015a; 2016a, p. 21; 2016b, p. 91, 99, 100).

ArcelorMittal Zenica's integrated plant contained a coke oven, a sintering plant, a blast furnace, and a steel plant. The plant produced hot-rolled products, such as lattice girders, mesh, rebar, and wire rod principally for export to the Balkan, EU, and North African markets. In 2015, the plant produced 795,942 t of crude steel, which was slightly more than the 792,019 t produced in 2014. In 2015, the company completed the installation of new hybrid filter technology at the Zenica plant, which was designed to reduce particulate emissions from the sintering process and to meet the new emissions standards to be enacted in Europe in 2017. Additional investments were expected in the future to continue the reduction of emissions and improve the environmental performance of the plant. In 2014, the plant directly employed more than 2,400 people (table 1; ArcelorMittal S.A., 2015a, b; 2016b, p. 46, 62).

Lead and Zinc.—Gross d.o.o. Gradiska, which was a subsidiary of Mineco Ltd. of the United Kingdom and Metexcel Trading Ltd. of Cyprus, owned the Sase lead and zinc mine in the area of Srebrenica. In 2015, the company invested more than 6.2 million BAM (\$3.5 million) in upgrading equipment and infrastructure to increase production and processing rates, reduce costs, and improve environmental preservation. The investment was part of a long-term program to rehabilitate and modernize the mine, which Gross d.o.o. Gradiska had been implementing since it acquired the mine from the government of the Republika Srpska in November 2007. The processing capacity of the mill was about 300,000 t/yr of lead and zinc sulfide ores. The company employed about 530 people (Gross d.o.o. Gradiska, 2016a–c; Mineco Ltd., 2016).

In December, Mineco Ltd. announced that it had received the environmental license for its Olovo lead mine, which is located 40 km north of Sarajevo. The company acquired the abandoned mine in 2012 and had invested \$10 million in reconstruction of the aboveground processing facilities. The 150,000-t/yr-capacity mine was expected to open in the summer of 2016 and to employ about 250 people (Garaca, 2015; Mineco Ltd., 2015).

Silicon.—B.S.I. d.o.o. (a wholly owned subsidiary of Metalleghe S.p.a. of Italy), produced primarily silicon metal and, as a byproduct, silica fume, which is a pozzolan that can be used to produce high-strength cement. The company's production plant at Jajce had three electric arc furnaces that produced silicon metal. B.S.I. exported its total production of about 18,000 to 20,000 t/yr to aluminum and silicon alloy producers in Germany, Hungary, Italy, Poland, Slovakia, and Slovenia. The company employed 170 people (eKapija, 2014a; B.S.I. d.o.o., 2016).

In November, R-S Silicon d.o.o., which was also a subsidiary of Metalleghe S.p.a., opened a new plant in Mrkonjic Grad for the production of silicon metal and secondary silica fume. Construction of the plant began in May 2014 as a greenfield investment with a total value of 42 million euros (EUR), or \$56 million.² The production capacity of the plant was 16,000 t/yr of silicon metal that was produced from a submerged electrical furnace. The plant employed 120 people (Foreign Investment Promotion Agency of Bosnia and Herzegovina, 2015c; R-S Silicon d.o.o., 2015).

Industrial Minerals

Cement.—In 2015, Fabrika Cementa Lukavac d.d., which was a wholly owned subsidiary of Asamer Baustoffe AG of Austria, was the leading manufacturer of portland and masonry cement in Bosnia and Herzegovina. The company reported a decrease of 45% in its net profit in the first half of 2015. Tvornica Cementa Kakanj d.d. (TCK), which was a wholly owned subsidiary of HeidelbergCement AG of Germany, operated one cement plant and four ready-mixed concrete plants in the country. The company reported a 22% increase in net profit in 2015 compared with that of 2014. TCK planned to invest about EUR10.2 million (\$13.5 million in 2015 dollars) on environmental upgrades in the period from 2013 to 2018, including a project in 2014 to modernize its cement mills and dust collection systems (Global Cement, 2014; Cemnet, 2015, 2016; Fabrika Cementa Lukavac d.d., 2016; HeidelbergCement AG, 2016, p. 66, 290).

In August 2015, CEMEX S.A.B. de C.V. of Mexico signed an agreement to sell its operations in Bosnia and Herzegovina, Croatia, Montenegro, and Serbia to Duna-Drava Cement Ltd. of Hungary (a subsidiary of HeidelbergCement) for approximately 231 million euros (\$251 million). CEMEX's operations in Bosnia and Herzegovina included the management of the Binis d.o.o. concrete plant and terminals for bulk and bagged cement (eKapija, 2014b; Global Cement, 2015a; Saunders, 2015).

Bosnia and Herzegovina's cement consumption was expected to be about 1.1 to 1.2 Mt in 2015, which is essentially unchanged from that of 2014. The demand for construction materials, including cement, was expected to increase from 2016 onwards owing to Government investments in infrastructure and energy facilities, such as the pan-European traffic corridor, new construction at the Tuzla and the Ugljevik thermal powerplants

(TPPs), and the new Vranduk hydroelectric project at Zenica (Global Cement, 2015b).

Mineral Fuels and Related Materials

Coal accounted for approximately 75% of the primary energy production in Bosnia and Herzegovina in 2013, and renewable energy, such as hydropower and biofuels, accounted for 25%. Coal (primarily lignite) accounted for 64% of Bosnia and Herzegovina's gross energy consumption; renewable energy sources and petroleum and petroleum products each accounted for about 19%. Although coal resources are substantial in Bosnia and Herzegovina, the country was entirely dependent on imports of petroleum and natural gas (Energy Community, 2015, p. 18–19, 56).

Coal.—As of 2013, coal reserves in Bosnia and Herzegovina were estimated to be 1.27 billion metric tons of lignite and 827 Mt of subbituminous coal. In 2015, Bosnia and Herzegovina produced about 6.21 Mt of subbituminous coal and 5.90 Mt of lignite, for a combined total of 12.11 Mt. Most of the coal was delivered to coal-fired TPPs located near the mines, and most of the mines were owned by the electric utility companies. The Government-owned JP Elektroprivreda Bosne i Hercegovine d.d. (EPBiH) owned seven surface and underground coal mines which, together, had an average annual production of about 5.7 Mt and employed about 9,200 people. The utility also owned the Kakanj and the Tuzla TPPs, which were fueled by the mines. The Kakanj TPP had an installed capacity of 450 megawatts (MW) and consumed about 1.8 Mt of coal annually. The installed capacity of the Tuzla TPP was 715 MW, and the plant consumed about 3.3 Mt of coal annually. The electricity generated by EPBiH exceeded the domestic demand, and the country was consequently a net electricity exporter (JP Elektroprivreda BiH d.d. Sarajevo, 2015a–c; Agency for Statistics of Bosnia and Herzegovina, 2016c, p. 3).

The Government-owned Elektroprivreda Republike Srpske (EPRS) owned the Gacko and the Ugljevik TPPs, each of which had an installed capacity of 300 MW and their own associated coal mine. The Gacko TPP was supplied by the Gracanica coal mine, which had an average annual production of about 1.7 Mt. The Ugljevik Mine, which solely supplied the Ugljevik power station, had an average annual production of 1.75 Mt (Elektroprivreda Republike Srpske, 2009b, c).

Rudnik I Termoelektrana Stanari d.o.o. (a subsidiary of the EFT Group of the United Kingdom) was the operator of the Stanari TPP, which had an installed capacity of 300 MW. The plant was completed in late 2015 and was expected to start commercial production in the first half of 2016. The plant was constructed near the Stanari lignite mine, which EFT had operated since 2005 and which produced about 1.2 Mt in 2014. Coal consumption at the plant was expected to be 2.3 Mt annually. The Stanari TPP was the only privately owned power-generating plant in southeastern Europe (European Association for Coal and Lignite, 2013, p. 70; EFT Group, 2015, p. 3, 26, 28–29).

Natural Gas and Petroleum.—Exploration for petroleum and natural gas in Bosnia and Herzegovina had been carried out for more than 100 years, but although occurrences of

²Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an average rate of EUR0.9012=US\$1.00 for 2015 and EUR0.7535=US\$1.00 for 2014.

hydrocarbons had been noted, no commercial accumulations had yet been found. All the country's natural gas and much of its crude petroleum were supplied by Russia. In 2014, the country imported 176 million cubic meters of natural gas and more than 7 million barrels of crude petroleum. Bosnia and Herzegovina had no gas storage facilities, but it did have a crude petroleum storage capacity of about 800,000 cubic meters, of which 532,707 cubic meters was provided by the Bosanski Brod refinery. The Government also owned a terminal in the Port of Ploce, Croatia, which had a storage capacity of 84,000 cubic meters (Maricic and others, 2012; Energy Community, 2015, p. 62, 67).

In 2011, Shell Exploration Co. B.V. (Shell), which was a subsidiary of Royal Dutch Shell plc of the Netherlands, signed a memorandum of understanding (MOU) with the Government of the Federation of Bosnia and Herzegovina with the goal of acquiring a petroleum exploration license. The MOU was extended in 2013 and 2014 to further negotiations. In September 2015, Shell announced that it would pull out of the negotiations, citing the current energy environment and internal revisions in global plans (Zuvela, 2015).

Outlook

Bosnia and Herzegovina will remain a minor producer of mineral commodities on a global scale in the near- to mid-term; however, revitalization and expansion of the country's mineral industry, particularly in coal and metals, will contribute to growth in the country's industrial output and employment. Metals are expected to remain valuable export commodities. Cement companies were making investments in modernization of their infrastructure and anticipated Government investments in public infrastructure and utilities could lead to increased demand in the near- to mid-term. Lead-zinc ore production is likely to increase with Gross Gradiska's mine modernization program and the planned opening of Mineco Ltd.'s Olovo Mine in 2016. Coal production is expected to increase in the near- to mid-term owing to ongoing modernization efforts at existing coal-fired electric utilities, the startup of the new Stanari TPP and other new TPPs that are in the planning stages. The country will remain dependent on imported crude petroleum and natural gas into the long term.

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TABLE 1
BOSNIA AND HERZEGOVINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
METALS						
Aluminum:						
Primary ^c	130,875 ³	101,000	129,000	125,531 ³	125,000	
Unwrought aluminum, including alloys	163,654 ^r	159,660	157,191	131,238	118,253	
Bauxite and alumina:						
Alumina	261,874	202,416	175,961	170,646	250,845	
Bauxite	685,949 ^r	800,316	657,115	605,215	787,409	
Iron and steel:						
Crude steel	648,560	700,341	722,155	792,019	795,942	
Ferroalloys, ferrosilicon ^c	1,800	--	--	--	--	
Pig iron	684,734	749,539	759,100	860,430	845,462	
Iron ore:						
Gross weight	1,891,000	2,075,732	2,121,907	2,127,564	2,122,802	
Fe content ^c	794,000	872,000	899,000	901,000	898,000	
Lead:						
Concentrate:						
Gross weight	6,648	7,210	8,105	7,533	9,000 ^e	
Pb content ^c	3,700	4,000	4,500	4,200	5,000	
Metal, smelter, secondary ^c	3,400	3,300	2,400	1,200	1,000	
Silicon, metal	17,527	15,874	16,707	18,383	18,716	
Zinc, ores and concentrate:						
Gross weight	12,477	13,331	16,631	14,422	12,600 ^e	
Zn content ^c	6,900	7,400	9,200	8,000	7,000	
INDUSTRIAL MINERALS						
Barite ^c	13 ³	28 ³	-- ^r	-- ^r	--	
Cement	thousand metric tons	893 ^r	846 ^r	882 ^r	840 ^r	808
Chalk		4,395	675	2,655	2,205	5,970
Clay:						
Bentonite		17,662 ^r	18,000 ^r	18,808	80,952	67,261
Kaolin, crude		232,147	149,495	44,940	21,610	252,268
Gypsum and anhydrite		71,870	73,665	73,300	67,700	58,800
Lime		488,577	397,802	386,908	427,914	422,531
Salt, all sources		833,734	862,017	856,713	921,239	991,534
Sand and gravel:						
Gravel		913,129	1,126,176	1,089,402	921,808	2,123,570
Sand, construction		1,095,486	499,916	625,509	347,747	514,463
Sand, silica		118,978	121,491	113,576	92,427	213,809
Sodium compounds, sodium bicarbonate		47,847	58,620	66,340	73,460	81,815

See footnotes at end of table.

TABLE 1—Continued
 BOSNIA AND HERZEGOVINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
INDUSTRIAL MINERALS—Continued						
Stone:						
Crushed (excluding dolomite and limestone)	4,369,575	3,711,065	4,216,610	4,485,649	4,230,353	
Dimension:						
Ecaussine and other calcareous stone	141,245	234,120	48,827	88,500	87,500	
Granite	29,441	2,944	8,413	13,467	2,668	
Marble and travertine	1,836	692	411	225	661	
Porphyry, basalt and other building stone	1,095,486	1,728,593	2,156,256	2,053,809	NA	
Slate	252	30	87,202	11,684	4,560	
Dolomite, crude	87,635	127,774	59,851	58,241	38,218	
Limestone, crushed and powdered	1,850,140	1,834,677	2,399,580	1,897,225	2,092,085	
MINERAL FUELS AND RELATED MATERIALS						
Coal, subbituminous, and lignite	thousand metric tons	12,738	12,312	11,765	11,673	12,112
Coke		886,911	696,231	748,834	908,662	911,497
Petroleum, refinery products ⁴	thousand 42-gallon barrels	9,900	8,500	9,000	8,400	7,900

⁶Estimated; estimated data are rounded to no more than three significant digits. ⁵Revised. NA Not available. -- Zero.

¹Table includes data available through July 21, 2016.

²In addition to commodities listed, calcined gypsum, common clay, crude ceramic clay, graphite, magnesite, manganese ore, soda ash, and steel semimanufactures may have been produced, but available information was inadequate to make reliable estimates of output.

³Reported figure.

⁴Data were converted to barrels from metric tons and were reported as follows: 2011—1,235,519; 2012—1,073,292; 2013—1,118,758; 2014—1,044,768; and 2015—991,771.

TABLE 2
BOSNIA AND HERZEGOVINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Alumina d.o.o. Zvornik (UAB Ukio Banko Investicine Grupe, 56.8%; government of Republika Srpska, 9.1%; Balkanika, 7.1%; Restitution Fund, 4.6%)	Plant at Zvornik	600. ¹
Aluminum	Aluminij d.d. Mostar (government of Federation of Bosnia and Herzegovina, 44%; workers, 44%; Government of Croatia, 12%)	Smelter at Mostar	160.
Bauxite	Boksit a.d. Milici	Mine at Milici, west of Srebrenica	1,500.
Cement	Tvornica Cementa Kakanj d.d. (TCK) (HeidelbergCement AG, 100%)	Plant at Kakanj	400.
Do.	Fabrika Cementa Lukavac d.d. (Asamer Baustoffe AG, 100%)	Plant in Lukavac	800 cement, 600 clinker.
Coal:			
Brown	RMU Banovici (Government, 69.3%, and workers, 30.7%)	Opencast mines at Cubric, Grivice, and Turija, and the Omazici and Separacija underground mines at Banovici	1,500.
Do.	Zenica Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Stara Jama, Raspotocje, and Stranjani Mines at Zenica	NA.
Do.	Durdevik Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Potocari and Visca II opencast mines and Durdevik underground mine, south of Zivinice	NA.
Do.	Kakanj Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Vrtliste opencast mine at Kakanj	NA.
Do.	do.	Haljinici underground mine, about 5 kilometers southeast of Kakanj	NA.
Do.	Breza Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Sretno and Kamenice underground mines, 20 kilometers northwest of Sarajevo	NA.
Do.	Abid Lolic Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Grahovcici underground mine, 10 kilometers west of Zenica	NA.
Do.	Tusnica Mine	Drage opencast mine at Livno	NA.
Do.	Rudnik i Termoelektrana Ugljevik [Elektroprivreda Republike Srpske (EPRS), 100%]	Opencast mine at Ugljevik	2,000. ^c
Do.	do.	Opencast mine at Gracanica	2,000. ^c
Lignite	Kreka Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Opencast mine at Dubrave	NA.
Do.	do.	Opencast mine at Sikulje	NA.
Do.	do.	Underground mines at Mramor, about 5 kilometers northeast of Lukavac, and at Bukinje, located between Tuzla and Lukavac	NA.
Do.	EFT Rudnik i Termoelektrana Stanari d.o.o. (EFT Group)	Stanari opencast mine, 20 kilometers west of Doboj	1,200.
Do.	Rudnik I Termoelektrana Gacko [Elektroprivreda Republike Srpske (EPRS), 100%]	Opencast mine at Gacko	NA.
Do.	Gracanica Group (JP Elektroprivreda Bosne i Hercegovine d.d., 100%)	Dimnjace opencast mine at Gornji Vakuf-Uskoplje	NA.
Do.	JP RU "Tuscina" d.o.o. Livno	Opencast mine at Livno	NA.
Coke	Global Ispat Koksa Industrija d.o.o. Lukavac (Global Steel Holdings and Coke and Chemical Conglomerate)	Lukavac	700.
Do.	ArcelorMittal Zenica d.o.o. (ArcelorMittal S.A.)	Plant at Zenica	NA.

See footnotes at end of table.

TABLE 2—Continued
 BOSNIA AND HERZEGOVINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Ferroalloys, ferrosilicon	Steelmin BH (Steelmin Ltd., 80%, and Kemokomplex Group, 20%)	Plant at Jajce	25.
Iron and steel:			
Iron ore	ArcelorMittal Prijedor d.o.o. (ArcelorMittal S.A., 51%, and Rudnici Zeljezne Rude "Ljubija" a.d. Prijedor, 49%)	Buvac open pit mines at Ljubija	3,000.
Pig iron	ArcelorMittal Zenica d.o.o. (ArcelorMittal S.A.)	Blast furnace at Zenica	1,100.
Steel:			
Crude	do.	Plant at Zenica	1,100.
Crude, secondary	Jelsingrad Livar Steel Foundry a.d.	Banja Luka	NA.
Semimanufactured products	ArcelorMittal Zenica d.o.o. (ArcelorMittal S.A.)	Plant at Zenica	NA.
Lead-zinc ore	Gross d.o.o. Gradiska (Mineco Ltd., 66.67%, and Metexcel Trading Ltd., 33.33%)	Sase Mine and mill at Srebrenica	300. ²
Petroleum, refined	Rafinerija nafte Brod a.d. (OAO "NefteGazInkor," 80%)	Oil refinery at Bosanski Brod	30,000.
Do.	Rafineriji ulja Modriča a.d. Modriča (OAO "NefteGazInkor," 77%)	Oil refinery at Modrica	NA.
Salt	Rudnik Soli Tuzla d.d.	Tuzla	NA.
Silicon metal	B.S.I. d.o.o. (Metalleghe S.p.a., 100%)	do.	20.
Do.	R-S Silicon d.o.o. (Metalleghe S.p.a., 100%)	Mrkonjic Grad	16.

^cEstimated. Do., do. Ditto. NA Not available.

¹The company entered bankruptcy in 2013.

²Gross weight of ore.