



2015 Minerals Yearbook

SLOVAKIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF SLOVAKIA

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In 2015, Slovakia was the world's fifth-ranked producer of magnesite, accounting for 2.3% of the world's mine production (excluding United States production). The country was not a significant world or regional producer of most other mineral commodities, however. Slovakia's metal production included aluminum, secondary copper, ferroalloys, gold, pig iron, silver, and crude steel. The country's production of industrial minerals was sufficient to satisfy its domestic consumption. Industrial minerals produced included barite, cement, clays, crushed stone, dolomite, feldspar, gypsum and anhydrite, lime, magnesite, nitrogen (N content of ammonia), perlite, sand and gravel, talc, and zeolites. Mineral fuels produced included brown coal and lignite as well as small amounts natural gas, crude petroleum, and refined petroleum products. The country was dependent on imports to meet all its demand for hard coal and most of its demand for hydrocarbons (table 1; Balaz and Kusik, 2014, p. 21; Bray, 2017).

Minerals in the National Economy

In 2015, Slovakia's real gross domestic product (GDP) grew at a rate of 3.6% compared with 2.5% in 2014. The country's nominal GDP was \$86.6 billion in 2015. The mining and quarrying of minerals (gross value added), including the extraction of crude petroleum and natural gas and mining support activities, contributed \$402.7 million¹ (0.46%) of the country's GDP in 2015. The manufacture of metal products, except machinery and equipment, contributed \$2.53 billion (2.92%) of the GDP in 2015; the manufacture of basic metals, \$978.84 million (1.13%); the manufacture of nonmetallic mineral products, \$612.86 million (0.71%); and the manufacture of coke and refined petroleum products, \$541.26 million (0.63%). The mining and quarrying sector employed 6,723 people compared with 6,939 in 2014. The manufacturing sector employed an average of 67,687 people during the year (International Monetary Fund, 2016; Statistical Office of the Slovak Republic, 2016b; 2016c, p. 16; 2016e, p. 11, 15, 18).

Government Policies and Programs

The Ministry of the Environment provides oversight and management of mineral deposits and energy resources in the country and issues exploration licenses. The State Geological Institute of Dionyz Stur is subordinated to the Ministry of Environment and is responsible for geologic research and exploration in the country. The Ministry of Economy, through its subordinated Main Mining Bureau, is responsible for monitoring mining activity, the registration of mining licenses, and regulating mine safety in the country. Reserved minerals, which are defined in the Mining Act, are owned and regulated by the

state; nonreserved minerals are part of the land and belong to the landowner. Mining activities in the country are primarily regulated by the Mining Act (law No. 44/1988) of April 1988, as amended, and revised by law No. 214/2002; and the Act on mining activities, explosives, and state mining administration (law No. 51/1988) of April 1988, as amended (Balaz and Kusik, 2014, p. 9, 11; Food and Agriculture Organization of the United Nations, 2016a, b; State Geological Institute of Dionyz Stur, 2016; Auropean Ventures Inc., undated).

Production

The production of most mineral commodities remained stable in 2015. Production of crushed stone increased by almost 35% to 13,701,000 metric tons (t) in 2015 from 10,189,000 t in 2014; bentonite, by 22% to 163,877 t from 134,131 t (revised) in 2014; ferromanganese, by 20% to 24,666 t from 20,554 t (revised) in 2014; sand and gravel, by 16% to 5,031,000 t from 4,331,000 t (revised) in 2014; limestone, by about 13% to 4,913,000 t from 4,333,000 t in 2014; and total refinery production, by about 13% to 41,400,000 barrels (bbl) from 36,500,000 bbl in 2014 (table 1).

The production of coal decreased by about 11% to 1,941,000 t in 2015 from 2,188,000 t (revised) in 2014; that of ferrosilicomanganese, by about 9% to 27,036 t from 29,643 t in 2014; barite concentrate (based on export data), by 9% to 10,000 t from 11,000 t (revised) in 2014 (table 1).

Structure of the Mineral Industry

Many mineral-related companies were privately owned. The SLOVNAFT, a.s. petroleum refinery at Bratislava was majority-owned by MOL Plc, in which the Government of Hungary had a 25% ownership stake. Slovakia's major mining and mineral-producing companies and the locations of their main facilities are listed in table 2.

Mineral Trade

In 2015, Slovakia's total exports were valued at EUR67.7 billion (\$75.1 billion), which was an increase of 4.6% from the value in 2014. Significant decreases from 2014 were noted in the export of petroleum and oils obtained from bituminous minerals (other than crude petroleum), which decreased by EUR460.7 million (\$511.2 million), likely owing to market conditions; and the export of flat-rolled iron or nonalloy steel products, which decreased by EUR175.9 million (\$195.2 million). Slovakia's main export partners were Germany, which received 22.4% of Slovakia's total exports, by value; the Czech Republic, 12.4%; Poland, 8.3%; Austria, 6.0%; and France and Hungary, 5.6% each (Statistical Office of the Slovak Republic, 2016a, d).

In 2015, Slovakia's total imports were valued at EUR64.4 billion (\$71.4 billion), which was an increase

¹Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR0.9012=US\$1.00 for 2015.

of 7.2% from the value in 2014. Significant decreases in imports were noted for petroleum and oils obtained from bituminous minerals and crude petroleum, which decreased by EUR731 million (\$811.1 million); petroleum gases and other gaseous hydrocarbons, by EUR190.3 million (\$211.2 million); and iron ore and concentrate, by EUR123.1 million (\$136.6 million). Slovakia's main import partners were Germany, which provided 15.7% of Slovakia's total imports; the Czech Republic, 11.2%; China, 8.7%; the Republic of Korea, 6.6%; and the Russian Federation, 5.4% (Statistical Office of the Slovak Republic, 2016a, d).

Commodity Review

Metals

Aluminum.—The production of primary aluminum increased by 2.6% in 2015 to 208,559 t from 203,323 t (revised) in 2014. Slovalco a.s. was owned by Hydro Aluminium AS of Norway (55.3%) and the Slovak company ZSNP, a.s. (44.7%), and was the only producer of primary aluminum in Slovakia. The company operated a smelter and produced aluminum and aluminum products, including aluminum alloys and primary foundry alloys. The company's facilities were located at Ziar nad Hronom in central Slovakia. In 2015, the company's total production of finished aluminum products was 190,659 t, which was an increase of about 3% from that of 2014. The finished products included 120,464 t of extrusion ingots and 70,195 t of primary foundry alloys. The company sold 191,539 t of finished aluminum products, which included 120,211 t of extrusion ingots and 71,329 t of primary foundry alloys. About 76% of the company's total sales volume was exported to European markets. Slovalco employed an average of 493 people during 2015, which was unchanged from that of 2014 (Brininstool, 2010, p. 30.1; Slovalco, 2016, p. 15, 16, 40, 63).

Antimony, Copper, and Silver.—Global Minerals Ltd. of Canada announced in April 2015 that it had agreed to sell 100% of its interest in the company's Strieborna copper and silver project to a private local investor group, citing insufficient funds for maintenance and operation. The transaction was completed in June. The Strieborna deposit is located in eastern Slovakia near the town of Roznava. The project was held by the company's two wholly owned local subsidiaries, Gemma-LP s.r.o. and Gemer-Can s.r.o. (Global Minerals Ltd., 2015a, p. 1–2).

According to a National Instrument (NI) 43–101 technical report estimate, the Strieborna deposit contained indicated and measured resources of 2.3 million metric tons (Mt) with average grades of 0.85% antimony, 1.2% copper, and 267 grams per metric ton (g/t) silver. Global Minerals estimated that the Strieborna project's average annual production during the initial 5 years was expected to be 43,545 kilograms (kg) of silver and about 1,950 t of copper. The average grades of the silver-copper concentrate were expected to be 6,570 g/t silver and 27.8% copper (Global Minerals Ltd., 2015b; Star Mountain Resources Inc., 2015).

Gold.—In 2015, gold was mined only from the Banska Hodrusa deposit by Slovenska Banska, spol. s.r.o. and exported to Belgium as concentrate. Slovakia's production of gold (as

gold content of concentrate) was 580 kg (estimated) in 2015, which was unchanged from the 2014 production level. At the beginning of 2015, EMED Mining Public Ltd. held exploration licenses in the Detva, the Banska Stiavnica-Hodrusa-Hamre, and the Velke Pole areas in central Slovakia. By the end of the year, the company had ceased its exploration activities in Slovakia and was seeking to divest its interests in the country. The company's principal asset was the Biely Vrch porphyry gold project, which was located in the Detva license area. EMED Mining reported that a Joint Ore Reserves Committee (JORC)-compliant preliminary mineral resource estimate, prepared in 2009, showed indicated resources of 17.7 Mt at an average grade of 0.81 g/t gold and containing approximately 14,300 kg of gold; the inferred resources were 24 Mt at an average grade of 0.77 g/t gold and containing approximately 18,500 kg of gold. The permitting process for the Detva gold project had been suspended by the District Mining Bureau in December 2013. In October 2015, EMED Mining changed its name to Atalaya Mining plc (Balaz and Kusik, 2014, p. 62–63; EMED Mining Public Ltd., 2015a, p. 12; 2015b, c; Jánová, 2016).

By the end of 2015, Ortac Resources Ltd. of the British Virgin Islands had mined about 500 t of ore since mid-2014 from trial mining operations at its 100%-owned Sturec project, which was located near the town of Kremnica in central Slovakia. The company planned to extract 4,000 t of ore from the trial mining operation during the course of 3 years, until 2017. In 2012, the company completed a mineral resource estimate on the Sturec project, which provided a JORC (2004)-compliant mineral resource estimate of 42,300 kg of gold equivalent. Total estimated resources were 25 Mt grading 1.4 g/t gold at a 0.75 g/t gold cutoff rate, and 11.2 g/t silver. Ortac also held a 100% interest in its Lutilla exploration license, which was located to the south of Kremnica. The license area had not been explored in detail but was prospective for gold and silver mineralization (Ortac Resources Ltd., 2015a, p. 2, 4, 12, 44, 45; 2015b; 2016a, p. 5; 2016b).

Industrial Minerals

Cement.—At the end of July 2015, CRH plc of Ireland acquired Holcim Ltd.'s assets in Slovakia as part of the merger agreement between Holcim Ltd. and Lafarge SA. As a result of the merger, Holcim (Slovensko) a.s. became CRH (Slovensko) a.s. Its business segments included cement, aggregates, and ready-mixed concrete (CRH plc, 2016, p. 45, 203).

Magnesium.—The production of magnesite concentrate was 557,000 t (estimated) in 2015, which was essentially unchanged from the amount produced in 2014. The leading producer of magnesite in Slovakia was SMZ, a.s. Jelsava (Slovenske Magnezitove Zavody [Slovenian Magnesite Works]), based in Jelsava in eastern Slovakia. In 2013, SMZ had an 89% share of the magnesite mine production in Slovakia. SMZ was also one of the leading producers of dead-burned magnesite in the world, producing about 5.9% of the world's magnesite refractory products. The company mined the largest magnesite deposit in the country; the deposit was located on the Dubravsky Massif. The company's production facilities for bulk dead-burned magnesite consisted of six shaft furnaces and three rotary kilns. In 2015, company sales of dead-burned products totaled

245,000 t. Exports accounted for 88% of total sales; the major export customers were Ukraine (54%), Germany (14%), the Czech Republic (6%), and Austria (5%). The domestic market accounted for 12% of total sales. In 2013, total estimated reserves of magnesite in Slovakia were 1.16 billion metric tons (Balaz and Kusik, 2014, p. 96; SMZ, a.s. Jelsava, 2015a, b).

Mineral Fuels and Related Materials

Coal, Natural Gas, and Petroleum.—Slovakia did not have significant exploitable reserves of hydrocarbons. Small amounts of petroleum were produced from the Zahorie basin in western Slovakia, and small quantities of natural gas were produced from fields in the western and eastern margins of the country. Slovakia was dependent on imported energy sources, and most of the crude petroleum and natural gas consumed in the country was imported from Russia. Coal was the only domestically produced primary energy source in the country; production of brown coal has satisfied about 80% of domestic consumption. In 2015, Slovakia's production of brown coal and lignite decreased by about 11% to 1.9 Mt from 2.2 Mt in 2014. In 2013, the total reserves of brown coal were estimated to be more than 460 Mt, and lignite reserves were estimated to be 618 Mt. Most of the coal and lignite produced was used for electricity generation in the coal-fired Novaky thermal powerplant. Slovakia had no hard coal resources and, in 2015, imported 3.6 Mt of hard coal, which was a decrease of about 45% from the amount imported in 2014. The coal mine at Vel'ky Krtis (operated by Bane Dolina a.s.) closed at the end of May 2015 owing to depletion of resources. In November 2015, Hornonitrianske Bane Prievidza, a.s. (HBP) acquired a 100% equity interest in Bana Cary, a.s. and became the sole producer of brown coal and lignite in Slovakia. In November 2014, the Government approved a long-term energy plan, which included an increase in the use of nuclear power and renewables and a decrease in the use of coal (Balaz and Kusik, 2014, p. 33, 36, 37, 44, 45; SME.sk, 2015; European Association for Coal and Lignite, 2016a, b; Stierankova, 2016; World Nuclear Association, 2016).

Uranium.—In January 2015, Forte Energy NL (Forte) of Australia, which held a 50% beneficial interest in Ludovika Energy s.r.o. and Ludovika Mining s.r.o. [both subsidiaries of European Uranium Resources Ltd. (Euu) of Canada], announced an updated JORC-compliant resource estimate for the Kuriskova project, which was located about 15 kilometers northwest of Kosice in eastern Slovakia. Indicated resources were more than 2.46 Mt at an average grade of 0.525% U_3O_8 (12,900 t of U_3O_8) and inferred resources were estimated to be 4.02 Mt at an average grade of 0.153% U_3O_8 (6,140 t of U_3O_8). JORC-compliant estimated measured and indicated resources at the Novoveska Huta deposit were 5.75 Mt at an average grade of 0.064% U_3O_8 (3,680 t of U_3O_8) and inferred resources were estimated to be 5,900 t of U_3O_8 . At the end of September 2015, the partnership agreement between EUU and Forte was terminated and Forte forfeited its 50% beneficial interest in EUU's subsidiaries. In November, EUU announced that it had exited the Kuriskova project (European Uranium Resources, Ltd., 2016, p. 2–3; World Information Service on Energy, 2016; World Nuclear Association, 2016).

Outlook

No significant increases in the production of mineral commodities in Slovakia are likely in the near term. Several copper, gold, silver, and uranium exploration companies have exited various projects and divested their interests in the country. Ortac Resources was continuing trial mining at its Sturec gold project, in part to develop noncyanide processing technologies for gold recovery, but commercial production at the project is not anticipated in the near term. The country's consumption of industrial minerals was mostly being met by domestic production, which is expected to remain stable. Coal production in the country is expected to decrease in the mid- to long term, in accordance with the Government's long-term energy plan (approved in November 2014) to increase the use of nuclear power and renewables and decrease the use of coal. The country is expected to continue to import metallic ores and concentrates, petroleum, and natural gas to meet domestic consumption requirements (Janová, 2016; World Nuclear Association, 2016).

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TABLE 1
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015
METALS					
Aluminum ingot, primary	187,138	180,671	192,090 ^r	203,323 ^r	208,559
Copper, smelter, secondary	48,806	41,713	18,458 ^r	23,328 ^r	23,000 ^e
Gold, Au content of concentrate	398	546	533	582	580 ^e
kilograms					
Iron and steel:					
Pig iron	3,346	3,519	3,617	3,838	3,738
thousand metric tons					
Ferroalloys:					
Ferromanganese ³	18,180	12,862	2,119 ^r	20,554 ^r	24,666
Ferrosilicomanganese	25,023	50,089	26,794	29,643	27,036
Ferrosilicon	38,771	36,869	41,664 ^r	47,019 ^r	45,961
Steel:					
Crude	4,236	4,403	4,511	4,705	4,562
thousand metric tons					
Semimanufactures	4,223	4,391	4,499	4,694	4,551
do.					
Silver	330	441	508	437	440 ^e
kilograms					
INDUSTRIAL MINERALS					
Barite:					
Mine output	13,000 ^r	21,000	24,000	21,000	21,000 ^e
Concentrate	8,100 ^r	5,000 ^r	8,700 ^r	11,000 ^r	10,000 ^e
Basalt	94,000	96,000	101,000	100,000 ^e	100,000 ^e
Cement, hydraulic	3,220 ^r	2,915	3,121	3,319	3,466
thousand metric tons					
Clays, bentonite	119,323	129,930	129,877	134,131 ^r	163,877
Feldspar	--	--	5,000	6,000	6,000 ^e
Gypsum and anhydrite, crude	88,000	88,000 ^r	60,000	65,000	65,000 ^e
Lime, hydrated and quicklime	971	903	813	827 ^r	778
thousand metric tons					
Magnesite, concentrate	751,700	618,400	583,800	557,100	557,000 ^e
Nitrogen, N content of ammonia	486,689	485,518	480,329	485,960 ^r	467,719
Perlite	23,000	24,000	16,000	17,000	18,000
Sand and gravel	6,479	4,238	4,350 ^r	4,331 ^r	5,031
thousand metric tons					
Silica sand (foundry and glass sands)	476 ^r	479 ^r	476 ^r	480 ^e	480 ^e
do.					
Stone:					
Dolomite	952	1,049	922	857 ^r	819
do.					
Limestone and other calcareous stones for cement	5,630	5,228	5,425	4,333 ^r	4,913
do.					
Crushed	9,855	8,065	8,527	10,189	13,701
do.					
Talc	7,000	2,000	10,000	3,000	3,000 ^e
Zeolites	103,000	105,000	115,000	115,000 ^e	115,000 ^e
MINERAL FUELS AND RELATED MATERIALS					
Coal, brown and lignite	2,376	2,292	2,353 ^r	2,188 ^r	1,941
thousand metric tons					
Coke, unspecified	1,620 ^r	1,560 ^r	1,541 ^r	1,561 ^r	1,600 ^e
do.					
Natural gas	106	106 ^r	115 ^r	87	90 ^e
million cubic meters					
Petroleum:					
Crude	122 ^r	95 ^r	88 ^r	88 ^r	81
thousand 42-gallon barrels					
Refinery products ⁴	45,500 ^r	40,500 ^r	39,700 ^r	36,500 ^r	41,400
do.					

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through November 18, 2016.

²In addition to the commodities listed, asbestos may have been produced, but available information was inadequate to make reliable estimates of output.

³Data from International Manganese Institute, 2016 annual market research report.

⁴Figures were converted to barrels from production reported in thousand metric tons, as follows: 2011—6,147; 2012—5,463; 2013—5,358; 2014—4,930; 2015—5,594.

TABLE 2
SLOVAKIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners ¹	Location of main facilities	Annual capacity	
Aluminum	Sovalco, a.s. (Hydro Aluminium AS, 55.3%, and ZSNP, a.s., 44.7%)	Ziar nad Hronom, central Slovakia	200	
Cement	Povazska Cementaren, a.s.	Ladce	1,050	
Do.	Cemmac a.s. (Asamer & Hufnagl Baustoff Holding Wien GmbH, 82.72%)	Horne Srnie	600	
Do.	Vychodoslovenske staezne hmoty a.s.	Turna	1,300	
Do.	CRH (Slovensko) a.s. (CRH plc., 99.7%)	Rohoznik	2,200	
Coal, brown coal and lignite	Hornonitrianske Bane Prievidza, a.s. (HBP)	Mines at Cigel, Handlova, and Novaky	2,200	
Do.	Bana Dolina, a.s.	Mine east of Vel'ky Krtis, southern Slovakia	150 ²	
Do.	Hornonitrianske Bane Prievidza, a.s. (HBP)	Mine at Cary, western Slovakia	500 ^e	
Coke	U.S. Steel Kosice, s.r.o.	Kosice, eastern Slovakia	NA	
Copper, smelter, secondary	Kovohuty, a.s. (Umcors Holding GmbH)	Krompachy, central Slovakia	90	
Ferroalloys	Oravske Ferozilatinarske Zavody (OFZ), a.s. (ArcelorMittal S.A.)	Istebne	170	
Gold, in concentrate	Slovenska Banska, spol. s.r.o.	Hodrusa-Hamre	NA	
Iron and steel:				
Pig iron	U.S. Steel Kosice, s.r.o.	Kosice, eastern Slovakia	4,500	
Steel, crude	do.	do.	4,900	
Do.	Zeleziarne Podbrezova, a.s.	Podbrezova	600 ^e	
Magnesite	SMZ, a.s. Jelsava	Jelsava, eastern Slovakia	370 ^e	
Do.	SLOVMAG, a.s. Lubenik	Lubenik, central Slovakia	NA	
Do.	GE.NE.S., a.s.	Mutnik, near Hnusta in central Slovakia	NA	
Natural gas	million cubic meters	NAFTA, a.s.	Oilfields and natural gas fields in western and eastern Slovakia	NA
Do.	do.	ENGAS, s.r.o.	Brno	NA
Petroleum:				
Crude	NAFTA, a.s.	Oilfields and natural gas fields in western and eastern Slovakia	NA	
Refinery	SLOVNAFT, a.s. (MOL Plc., 98.5%)	Bratislava	6,000	
Do.	Petrochema, a.s.	Dubova	150	
Zeolites	Zeocem, a.s.	Quarry near Nizny Hrabovec and processing plant near Bystre	NA	
Do.	VSK Pro-Zeo Ltd.	Humenne	NA	

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

¹Abbreviations used for types of companies include the following: a.s., joint stock company; s.r.o., limited company.

²Mine closed in May 2015.