

2017–2018 Minerals Yearbook

SLOVAKIA

THE MINERAL INDUSTRY OF SLOVAKIA

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Note: In this chapter, information for 2017 is followed by information for 2018.

In 2017, Slovakia ranked seventh globally in the mine production (gross weight) of magnesite, accounting for 1.5% of world production. The country was otherwise not a significant world producer of mineral commodities. The metallurgical sector produced aluminum, secondary copper, ferroalloys, gold, silver, and raw steel. The production of industrial minerals included barite, cement, clay, dolomite, feldspar, gypsum, lime, nitrogen, perlite, sand and gravel, crushed stone, talc, and zeolites. Mineral fuels produced included coal, natural gas, crude petroleum, and refined petroleum products (table 1; Bray, 2019).

Minerals in the National Economy

In 2017, Slovakia's real gross domestic product (GDP) increased by 3.4% compared with an increase of 3.3% in 2016. The nominal GDP in 2017 was \$92.0 billion (EUR84.9 billion).¹ The value of output from the mining and quarrying sector was \$589 million, or equivalent to 0.64% of the GDP. The mining and quarrying sector employed 12,600 people in 2017 compared with 11,000 people in 2016 (Statistical Office of the Slovak Republic, 2019c, p. 112, 239, 266, 614).

In 2017, Slovakia's total exports were valued at \$81 billion, which was an increase of 6.8% compared with the value in 2016. The value of exported iron and steel was \$3.8 billion; mineral fuels, mineral oils, and bituminous substances, \$3.7 billion; articles of iron or steel, \$1.9 billion; and aluminum and articles thereof, \$1.2 billion (Statistical Office of the Slovak Republic, 2019c, p. 298–301).

In 2017, Slovakia's total imports were valued at \$77.8 billion, which was an increase of 8.2% compared with the value in 2016. The value of imported mineral fuels, mineral oils, and bituminous substances was \$6.8 billion; iron and steel, \$2.6 billion; articles of iron or steel, \$2.2 billion; and aluminum and articles thereof, \$950 million (Statistical Office of the Slovak Republic, 2019c, p. 294–297).

Mining activities in the country are primarily regulated by the Act on Mineral Protection and Exploitation (SNR Act No. 44/1988 Col.) (Mining Law) of April 1988, as amended by Act No. 285/2014 Col.; the Act on Mining Activities, Explosives and State Mining Administration (SNR Act No. 51/1988 Col.) of April 1988, as amended by Act No. 58/2014 Col.; and the Act on Geological Works (NR SR Act No. 569/2007) (Geological Act) (Balaz and Kusik, 2015, p. 11).

Production

In 2017, the production of talc increased by 1,900% to 13,988 metric tons (t); perlite, by 150% to 47,510 t; feldspar, by 88% to 15,800 t; ferrosilicon, by 38% to 52,436 t; sand and gravel (construction), by 27% to about 6.75 million metric tons (Mt); ferromanganese, by 18% to 42,115 t; nitrogen (of ammonia), by 15% to 380,000 t; kaolin, by 14% to 13,584 t; copper (smelter, secondary) and silicomanganese, by 13% each to 48,152 t and 40,265 t, respectively; and limestone (including other calcareous stones used for cement), by 10% to about 5.75 Mt. Talc production increases were the result of production beginning at a new processing plant during 2017. Significant production increases of some metals and industrial minerals may be the result of increased private and Government consumption, fixed capital formation, construction activities, and exports. The production of crude petroleum decreased by 44% to 37,000 barrels; barite, by 37% to 15,690 t; and gypsum, by 14% to 45,700 t (table 1).

Structure of the Mineral Industry

The Mining Law defines two categories of deposits in the country—reserved deposits, which are minerals with natural rock structures and underground spaces suitable for gases and liquid storage and geothermal energy and are owned and regulated by the state, and nonreserved deposits, which include those that contain building stones, gravel, sands, and brick clays and are part of the land and belong to the landowner. The Ministry of Environment oversees and manages mineral deposits and energy resources and issues exploration licenses in the country. The Ministry of Environment founded the State Geological Institute of Dionyz Stur, which is responsible for geologic research and exploration. The Ministry of Economy also supervises the Main Mining Bureau, which is responsible for monitoring mining activity, registration of mining licenses, and regulating mine safety (Balaz and Kusik, 2015, p. 9; European Ventures Inc., undated).

The number of registered mining and quarrying enterprises was 196 in 2017 compared with 194 in 2016, of which 192 were privately owned firms. The revenue of enterprises with 20 and more employees in the business of mining and quarrying, manufacturing of coke and refined petroleum products, and manufacturing of basic metals and fabricated metal products increased by 18% since 2016, to \$14.1 billion. Table 2 is a list of major mineral industry facilities in Slovakia (Statistical Office of the Slovak Republic, 2019c, p. 340, 342, 391).

¹Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR0.923=US\$1.00 for 2017.

Commodity Review

Metals

Copper and Nickel.—On May 29, Western Mining Network Ltd. of Australia changed its name to European Cobalt Ltd. (EUC). In September, EUC announced the acquisition of a new license area, which encompasses 6.66 square kilometers, to expand its existing Dobsina cobalt-nickel-copper project located in central Slovakia. By yearend, the company had conducted drilling and three-dimensional modeling activities that revealed mineralization averaging 0.2% cobalt, 1.2% copper, and 0.26% nickel (Jewson, 2017; Nicholas, 2017; European Cobalt Ltd., 2020; InvestoGain Pty. Ltd., 2018).

Gold.—In March, Ortac Resources Ltd. of the United Kingdom was granted a small-scale underground mining permit for the Sturec gold deposit in the company's Kremnica mining license area, which is located 1.5 kilometers northeast of Kremnica in central Slovakia, for a minimum of 3 years. According to a prefeasibility study completed in April 2013, the Sturec deposit contained 40,400 kilograms of gold equivalent (Ortac Resources Ltd., 2017, p. 2, 5; Arc Minerals Ltd., 2019, p. 7).

Industrial Minerals

Talc.—Eurotalc, s.r.o., a subsidiary of Schmid Industrial Holding of Austria, owned a license to operate the Gemerska Poloma talc mine, which has reserves of at least 85 Mt. The 100,000-metric-ton-per-year mine began production at the end of 2017 but was reported to be unprofitable owing to a lack of skilled labor and the inefficiency of the mining operation (Eurogas AG, 2018).

Mineral Fuels and Related Materials

Uranium.—In 2017, the Supreme Court of Slovakia issued the final ruling not to extend a geologic survey of uranium and other radioactive mineral ore in the Cermel'-Jahodna, Kosice Region of eastern Slovakia. Ludovika Energy, s.r.o. failed to provide evidence that a 10-year deadline was insufficient to complete the survey and prove that an extension was necessary (Slovak Spectator, The, 2018c; World Nuclear Association, 2019).

MINERAL INDUSTRY HIGHLIGHTS IN 2018

In 2018, Slovakia's real GDP increased by 4.1% compared with an increase of 3.4% in 2017. The country's nominal GDP was \$106.4 billion (EUR90.2 billion)² in 2018. The value of the output of the mining and quarrying sector was an estimated \$579 million, which was equivalent to 0.54% of the GDP in 2018 (Statistical Office of the Slovak Republic, 2019b, p. 42, 56).

In 2018, Slovakia's total exports were valued at \$94.1 billion, which was an increase of 16% compared with the value in 2017. The value of exported mineral fuels, mineral oils, and bituminous substances was \$3.6 billion; iron and steel,

\$2.4 billion; articles of iron or steel, \$2.3 billion; and aluminum and articles thereof, \$1.5 billion (Statistical Office of the Slovak Republic, 2019a, p. 41, 45, 47, 49).

In 2018, Slovakia's total imports were valued at \$91.2 billion, which was an increase of 17% compared with the value in 2017. The value of imported mineral fuels, mineral oils, and bituminous substances was \$8.1 billion; iron and steel, \$3.0 billion; articles of iron or steel, \$2.6 billion; and aluminum and articles thereof, \$1.1 billion (Statistical Office of the Slovak Republic, 2019a, p. 40, 45, 47, 49).

In 2018, production of kaolin increased by 56%; sand and gravel (construction), by 22%; and pig iron, by 13%. The production of ferromanganese decreased by 23%; copper (smelter, secondary) and sand and gravel (industrial), by 20% each; and coal (lignite), by 18% (table 1).

Ortac Resources Ltd., which owned the Sturec gold project, changed its name to Arc Minerals Ltd. on January 22, 2018. Arc Minerals strategically evaluated the Sturec project as noncore and planned to divest the project. Ortac Resources had encountered some difficulties with its mining operations at the Sturec Mine owing to the country's mining law, which prohibits the use of cyanide for gold extraction (Gleeson, 2017; Arc Minerals Ltd., 2018, p. 9; Mining Journal, 2018).

In 2018, Oravske Feroziliatinske Zavody a.s. (OFZ), a Slovakian company that produced ferroalloys, acquired the Vatra Dornei Mine in the Suceava region of northeastern Romania, from MinBucovina S.A., a Romanian company that had declared bankruptcy in 2008 and was taken over by another company that became insolvent. The acquisition guaranteed a reliable manganese ore supply to OFZ for the next 20 years. The annual production capacity for ore was about 25,000 t, of which 60% was allocated for OFZ and the rest was available for sale (Slovak Spectator, The, 2018b; Stoica, 2018).

Duslo Saľa a.s., part of the Agrofert Group, opened a new 1,600-metric-ton-per-day ammonia production unit at its existing fertilizer complex in Mocenok, Saľa District, Nitra Region. The new Ammonia 4 unit passed a performance test in July and was expected to operate for 40 years. Investment in the construction of the Ammonia 4 unit commenced in 2014, encouraged by a tax incentive approved by the Government (Slovak Spectator, The, 2018a; Wainwright, 2018).

Outlook

The growth rate of Slovakia's real GDP is expected to be 2.6% in 2019 and 2.7% in 2020, which are lower than the 4.1% rate of growth in 2018. The country will likely continue to be a significant global producer of magnesite. Slovakia currently does not mine base-metal ores, but this situation is expected to change if the Dobsina cobalt-nickel-copper project can be successfully developed. Slovakia's Gemerska Poloma talc mine is one of the richest talc deposits in the world and is expected to increase production and reach full capacity if the profitability of the operation can improve in coming years. The Government of Slovakia's requirement that gold-extraction techniques not use cyanide is likely to limit development of the Sturec gold project, making gold output in the country unlikely to increase in coming years (table 1; Arc Minerals Ltd., 2018, p. 9; Eurogas AG, 2018; International Monetary Fund, 2020).

²Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an average annual exchange rate of EUR0.848=US\$1.00 for 2018.

References Cited

- Arc Minerals Ltd., 2018, Arc Minerals Limited (formerly Ortac Resources Limited) annual report and financial statements for the year ended 31 March 2018: London, United Kingdom, Arc Minerals Ltd., 59 p. (Accessed March 11, 2020, at http://s2.q4cdn.com/256050873/files/doc_financials/annual/5b79e86e8a5ec_180820_ARC_financial_statements_FINAL.pdf.)
- Arc Minerals Ltd., 2019, Arc Minerals Limited annual report and financial statements for the year ended 31 March 2018: London, United Kingdom, Arc Minerals Ltd., 68 p. (Accessed August 5, 2020, at http://s2.q4cdn.com/256050873/files/doc_financials/2019/ar/Annual-Report-2019.pdf.)
- European Ventures, Inc., [undated], Administration of geology and mining in the Slovak Republic: Carp, Ontario, Canada, Auropean Ventures, Inc. (Accessed March 11, 2020, at <http://www.auropeanventures.com/projects/slovakia/mining.htm>.)
- Balaz, Peter, and Kusik, Dusan, 2015, Slovak minerals yearbook 2015: Bratislava, Slovakia, State Geological Institute of Dionyz Stur, 145 p. (Accessed August 13, 2018, at https://www.researchgate.net/publication/315613826_Nerastne_suroviny_Slovenskej_republiky_2015stav_2014_Slovak_Minerals_Yearbook_2015_state_2014.)
- Bray, E.L., 2019, Magnesium compounds: U.S. Geological Survey Mineral Commodity Summaries 2019, p. 100–101.
- Eurogas AG, 2018, Global talc deposit in Slovakia still without dividends: Zurich, Switzerland, Eurogas AG, June 1. (Accessed March 12, 2020, at <https://eurogas.ch/gemerska-poloma-global-talc-deposit-in-slovakia-still-without-dividends/>.)
- European Cobalt Ltd., 2020, Dobsina (Co-Ni-Cu-Ag): Subiaco, Western Australia, Australia, European Cobalt Ltd. (Accessed March 11, 2020, at <https://www.europeancobalt.com/copy-of-dobsina-co-ni-cu>.)
- Gleeson, Daniel, 2017, All change at Ortac Resources: Mining Journal [London, United Kingdom], November 29. (Accessed at September 12, 2019, via <https://www.mining-journal.com/>.)
- International Monetary Fund, 2020, Report for selected countries and subjects—Slovak Republic: Washington, DC, International Monetary Fund, World Economic Outlook Report, June 13. (Accessed March 11, 2020, at
- InvestoGain Pty. Ltd., 2018, Western Mining Network Limited (WMN): Crows Nest, New South Wales, Australia, InvestoGain Pty. Ltd. (Accessed July 20, 2018, at <http://www.investogain.com.au/company/western-mining-network-limited>.)
- Jewson, Robert, 2017, European Cobalt—Dobsina exploration update: Junior Mining Network, December 27. (Accessed July 20, 2018, at <https://www.juniorminingnetwork.com/junior-miner-news/press-releases/2364-asx/euc/40024-european-cobalt-dobsina-exploration-update.html>.)
- Mining Journal, 2018, Ortac changes name to Arc Minerals: Mining Journal [London, United Kingdom], January 12. (Accessed September 12, 2019, via <https://www.mining-journal.com>.)
- Nicholas, Lorna, 2017, European Cobalt expands Dobsina with new license acquisition: Small Caps [Melbourne, Victoria, Australia], September 27. (Accessed March 11, 2020, at <https://smallcaps.com.au/european-cobalt-dobsina-new-license-acquisition/>.)
- Ortac Resources Ltd., 2017, Ortac Resources Limited annual report and financial statements for the year ended 31 March 2017: London, United Kingdom, Ortac Resources Ltd., 50 p. (Accessed March 11, 2020, at http://s2.q4cdn.com/256050873/files/doc_financials/interim/599ab76b3c701_Final_Results_to_31_March_2017_and_AGM_Notice.pdf.)
- Slovak Spectator, The, 2018a, Agrofert's Duslo Šaľa launches new ammonia production plant with a price tag of €310 million: The Slovak Spectator [Bratislava, Slovakia], September 14. (Accessed September 16, 2019, at <https://spectator.sme.sk/c/20913672/agrofersts-duslo-sala-launches-new-ammonia-production-plant-with-a-price-tag-of-310-million.html>.)
- Slovak Spectator, The, 2018b, Slovak producer of ferroalloys buys manganese mine in Romania: The Slovak Spectator [Bratislava, Slovakia], March 22. (Accessed September 16, 2019, at <https://spectator.sme.sk/c/20786430/slovak-producer-of-ferroalloys-buys-manganese-mine-in-romania.html>.)
- Slovak Spectator, The, 2018c, Uranium mining near Košice definitely rejected: The Slovak Spectator [Bratislava, Slovakia], February 1. (Accessed September 16, 2019, at <https://spectator.sme.sk/c/20751213/uranium-mining-near-kosice-definitely-rejected.html>.)
- Statistical Office of the Slovak Republic, 2019a, Foreign trade of the Slovak Republic 12/2018: Bratislava, Slovak Republic, Statistical Office of the Slovak Republic, December 12, 88 p. (Accessed April 13, 2020, via <https://slovak.statistics.sk/PortalTraffic/fileServlet?Dokument=28a5634c-9405-48c0-bd0b-c2fd2216374a>.)
- Statistical Office of the Slovak Republic, 2019b, Slovak Republic in figures 2019: Bratislava, Slovak Republic, Statistical Office of the Slovak Republic, July 10, 77 p. (Accessed September 16, 2019, at <https://slovak.statistics.sk/PortalTraffic/fileServlet?Dokument=c93a1e3a-062b-4ce9-b497-9fc69e1524a9>.)
- Statistical Office of the Slovak Republic, 2019c, Statistical yearbook of the Slovak Republic 2018: Bratislava, Slovak Republic, Statistical Office of the Slovak Republic, September 16, 669 p. (Accessed September 16, 2019, at <https://slovak.statistics.sk/PortalTraffic/fileServlet?Dokument=77ca06b0-5b58-4bfc-a54d-7a36a39b7e62>.)
- Stoica, Adrian, 2018, Romanian mining revives—From the black hole of economy to profit: Ploiesti, Romania, Energy Industry Review, April 20. (Accessed April 14, 2020, at <https://energyindustryreview.com/metals-mining/romanian-mining-revives/>.)
- Wainwright, Robyn, 2018, New ammonia production plant starting up in Slovakia: World Fertilizer Magazine, October 18. (Accessed September 16, 2019, at <https://www.worldfertilizer.com/project-news/18102018/new-ammonia-production-plant-starting-up-in-slovakia/>.)
- World Nuclear Association, 2019, Nuclear power in Slovakia: London, United Kingdom, World Nuclear Association, April. (Accessed September 16, 2019, at <https://www.world-nuclear.org/information-library/country-profiles/countries-o-s/slovakia.aspx>.)

TABLE 1
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity		2014	2015	2016	2017	2018
METALS						
Aluminum, metal, primary		203,323	208,559	214,532	218,584	218,171
Copper, smelter, secondary		11,400 ^r	11,400	42,691 ^r	48,152	38,379
Ferroalloys:						
Ferromanganese		20,554	25,376	35,589	42,115	32,364
Ferrosilicon		47,019	45,961	38,030	52,436	50,392
Silicomanganese		29,643	27,036	35,719	40,265	37,225
Gold, mine, Au content	kilograms	582	603 ^r	492 ^r	500	500 ^e
Iron and steel:						
Pig iron	thousand metric tons	3,838	3,738	3,987	4,106	4,652
Steel:						
Raw steel	do.	4,705	4,562	4,808	4,974	5,225
Products, semimanufactured	do.	4,607 ^r	4,300 ^r	4,300 ^r	4,350 ^e	4,350 ^e
Silver, mine, Ag content	kilograms	437	440 ^r	449 ^r	460	460 ^e
INDUSTRIAL MINERALS						
Barite		21,000	20,000	25,000	15,690	15,500 ^e
Cement, hydraulic	thousand metric tons	3,319	3,466	3,518	3,782	3,913
Clay:						
Bentonite		134,131	163,877	128,681	159,272	171,478
Kaolin		6,000 ^e	10,502	11,923	13,584	21,209
Feldspar		6,000 ^e	4,000	8,400 ^r	15,800	15,000 ^e
Gypsum, mine, including anhydrite		65,000	67,000	53,000	45,700	46,000
Lime, hydrated and quicklime	thousand metric tons	827	778	801	774	791
Magnesite, concentrate		557,100	501,200	430,900	450,000 ^e	475,000 ^e
Nitrogen, ammonia, N content	thousand metric tons	280 ^r	390 ^r	330 ^r	380	380 ^e
Perlite		17,000	25,000	19,000	47,510	48,000 ^e
Sand and gravel, industrial, unspecified	thousand metric tons	502	500	500 ^e	500 ^e	400
Stone, sand and gravel, construction:						
Sand and gravel	do.	4,331	5,031	5,319	6,746	8,245
Stone:						
Crushed:						
Aggregate	do.	10,189	13,701	12,571	12,488	12,033
Basalt		98,000	100,000 ^e	100,000 ^e	100,000 ^e	100,000 ^e
Limestone, including other calcareous stone for cement	thousand metric tons	4,333	4,913	5,221	5,745	5,702
Dimension, dolomite	do.	857	819	827	844	902
Talc		3,000	1,000	700	13,988	14,000 ^e
Zeolites		117,000	117,000 ^e	117,000 ^e	117,000 ^e	117,000 ^e
MINERAL FUELS AND RELATED MATERIALS						
Coal, lignite	thousand metric tons	2,174	1,949	1,847	1,836	1,503
Coke, metallurgical	do.	1,560	1,637	1,635	1,582	1,592
Natural gas	million cubic meters	99 ^r	104 ^r	87	88	88 ^e
Petroleum:						
Crude	thousand 42-gallon barrels	59 ^r	73 ^r	66 ^r	37	37 ^e
Refinery, products	do.	39,342 ^r	44,642 ^r	43,190 ^r	42,612	38,741

^eEstimated. ^rRevised. do. Ditto.

¹Table includes data available through September 25, 2019. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

TABLE 2
SLOVAKIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners ¹	Location of main facilities	Annual capacity
Aluminum:			
Metal, primary	Slovalco, a.s. (Hydro Aluminium AS, 55.3%, and Iovalco Invest, a.s., 44.7%)	Ziar nad Hronom, central Slovakia	175
Products	do.	Casthouse, Ziar nad Hronom	200
Cement	Cemmac a.s. (Asamer & Hufnagl Baustoff Holding Wien GmbH, 82.72%)	Horne Srnie	600
Do.	CRH (Slovensko) a.s. (CRH plc, 99.7%)	Rohoznik	2,200
Do.	Povazska Cementaren, a.s. (Berger Slovakia a.s.)	Ladce	1,050
Do.	Vychodoslovenske stavebne hmoty a.s. (CRH plc)	Turna	985
Do.	Zeocem, a.s.	Bystre	200 ^e
Coal, lignite	Bana Cary, a.s.	Mine at Cary, western Slovakia	170
Do.	Bana Dolina, a.s.	Mine east of Vel'ky Krtis, southern Slovakia	150 ²
Do.	Hornonitrianske Bane Prievidza, a.s. (HBP)	Mines at Cigel, Handlova, and Novaky	1,400 ³
Coke	U.S. Steel Kosice, s.r.o.	Kosice, eastern Slovakia	2,000 ^e
Copper, smelter, secondary	Kovohuty, a.s. (Umcors Holding GmbH)	Krompachy, central Slovakia	50
Ferroalloys	Oravske Feroziliatnarske Zavody (OFZ), a.s. (ArcelorMittal S.A.)	Istebne	170
Gold, mine	Arc Minerals Ltd.	Sturec gold project, Kremnica	NA
Do.	Slovenska Banská, spol. s r.o.	Rozalia Mine, Hodrusa-Hamre	NA
Iron and steel:			
Pig iron	U.S. Steel Kosice, s.r.o.	Kosice, eastern Slovakia	4,500
Steel:			
Raw steel	do.	do.	4,500
Products	Zelezarne Podbrezova, a.s.	Podbrezova	300 ^e
Magnesite	Gemerska Nerudna Spolocnost, a.s.	Mutnik, near Hnusta in central Slovakia	NA
Do.	Slovmag, a.s. (Magnezit Group, 100%)	Lubenik, central Slovakia	NA
Do.	SMZ, a.s. Jelsava	Jelsava, eastern Slovakia	370 ^e
Natural gas	million cubic meters	NAFTA, a.s.	Oilfields and natural gas fields in western and eastern Slovakia
Nitrogen, ammonia, N content	Duslo, a.s. (Agrofert Group)	Saľa, Nitra, southwestern Slovakia	584
Petroleum:			
Crude	thousand 42-gallon barrels	NAFTA, a.s.	Oilfields and natural gas fields in western and eastern Slovakia
Refinery	do.	Petrochema, a.s.	Dubova
Do.	do.	SLOVNAFT, a.s. (MOL Plc., 98.5%)	Bratislava
Silver	Arc Minerals Ltd.	Sturec gold project, Kremnica	NA
Talc, mine, ore, gross weight	Eurotalc, s.r.o. (Schmid Industrial Holding, 100%)	Talc mine in Gemerska Poloma, Kosice	100
Zeolites	Pro-Zeo Ltd. (VSK Mining Ltd. of Cyprus, 65%, and MEB Migulator Entwicklung & Beteiligung GmbH of Austria, 35%)	Kucin deposit, Nizny Hrabovec, Vranov nad Topľou District, Presov Region	NA
Do.	Zeocem, a.s. (CTR Group)	Quarry near Nizny Hrabovec and processing plant near Bystre	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.

³Cigel Mine closed in October 2017.