



2019 Minerals Yearbook

CZECHIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF CZECHIA

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In 2019, Czechia was estimated to be the 4th-ranked producer of kaolin (8.6% of world output), the 10th-ranked producer of feldspar (2% of world output), and the 10th-ranked producer of bentonite (1.5% of world output). The country produced processed metal products, such as lead metals, pig iron, raw steel, secondary aluminum, and semimanufactured steel. Production of mineral fuels and related materials included coal, crude petroleum, natural gas, refined petroleum products, and uranium (table 1; Ghalayini, 2020; Willett, 2020).

Minerals in the National Economy

In 2019, Czechia's real gross domestic product (GDP) increased by 2.3% compared with that of 2018; the nominal GDP was \$251 billion. The mining and quarrying sector accounted for 0.5% of the GDP. Mining of coal accounted for 54% of the output of the mining and quarrying sector; unclassified mining and quarrying activities, 31%; extraction of crude petroleum and natural gas, 5.8%; and mining of metallic ores, 3.7%. The manufacturing sector accounted for 37% of the GDP. Manufacturing of fabricated metal products (not including machinery and equipment) accounted for 8.6% of the manufacturing sector output; rubber and plastic products, 6.2%; chemicals and chemical products, 5.8%; basic metals, 4.1%; other nonmetallic mineral products, 3.3%; and coke and refined petroleum products, 0.2% (International Monetary Fund, 2020; Czech Statistical Office, 2020b, c).

The mining and quarrying sector employed 26,206 people during the year, which was a decrease of 4.1% compared with the sector's employment in 2018. Within the sector, about 61% of the employees worked in the mining of coal; about 9% in the mining of metallic ores; and about 2% in the extraction of crude petroleum and natural gas. The manufacturing sector employed 1,430,497 people during the year. Within the sector, about 14% were employed in the manufacturing of fabricated metal products (not including machinery and equipment); 4%, in the manufacturing of other nonmetallic mineral products; 3%, in the manufacturing of basic metals; and 0.1%, in the manufacturing of coke and refined petroleum products (Czech Statistical Office, 2020d).

Government Policies and Programs

The principal authority of the mineral industry is the State Mining Administration. The Czech Mining Authority within the State Mining Administration supervises the District Mining Authorities. The mining authorities are responsible for the administration and management of mining activities, including monitoring compliance with mining laws and issuing mining licenses. The mineral industry of Czechia is governed by three main laws: Act No. 44/1988 deals with the protection and use of mineral resources; Act No. 2/1969 establishes the authority of certain Government agencies regarding mining activities; and

Act No. 61/1988 deals with the safety and procedures of mining operations (State Mining Administration, 2019).

Production

In 2019, production increased most notably for the following mineral commodities: diatomite, by 39%; bentonite, by 29%; gypsum (including anhydrite), by 25%; and uranium (concentrate, U content), by 14%. Production decreased most notably for mined gemstones (in moldavite-bearing rock), by 31%; crude petroleum, by 26%; bituminous and metallurgical coal, by 23% each; marketable natural gas, by 18%; and brick clay, by 11%. Data on mineral production are in table 1.

Mineral Trade

Czechia's total exports of goods were valued at \$161 billion¹ in 2019. Exports of mining and quarrying products were valued at \$639 million, of which coal and lignite were valued at \$262 million; crude petroleum, \$173 million; metal ores, \$2 million; and other mining and quarrying products, \$202 million. Exports of manufactured products were valued at \$154 billion, or 95.6% of total exports of goods, of which exports of machinery and equipment were valued at \$18 billion; fabricated metal products, \$10 billion; chemicals and chemical products, \$7.4 billion; basic metals, \$6 billion; other nonmetallic mineral products, \$3.1 billion; and coke and refined petroleum products, \$1.7 billion combined (Czech Statistical Office, 2020a, table 3.1).

Total imports of goods were valued at \$154.6 billion. Imports of mining and quarrying products were valued at \$7.1 billion, or 4.6% of total imports of goods; of this amount, imports of crude petroleum and natural gas were valued at \$6.7 billion; metal ores, \$662 million; coal and lignite, \$542 million; and other mining and quarrying products, \$245 million. Imports of manufactured products were valued at \$142.6 billion, or 92.2% of total imports goods; of this amount, machinery and equipment were valued at \$15.3 billion; chemicals and chemical products, \$12.3 billion; basic metals, \$11.4 billion; fabricated metal products, \$7.6 billion; and other nonmetallic mineral products, \$2.1 billion (Czech Statistical Office, 2020a, table 3.1).

Czechia's leading exports partners were, by value of exports, Germany, which received 31.0% of Czechia's total exports of goods; Slovakia, 9.0%; Poland, 6.3%; and France, 5.1%. The country's leading import partners were, by value of imports, Germany, which supplied 25.9% of Czechia's total imports of goods; China, 10.9%; Poland, 8.3%; and Slovakia, 4.9% (Czech Statistical Office, 2020a, table 2.3, 2.4).

¹Where necessary, values have been converted from Czech koruna (CZK) to U.S. dollars (US\$) at an annual average exchange rate of CZK22.934=US\$1.00 for 2019.

In 2019, total exports from Czechia to the United States were valued at \$5.52 billion. This included exports of iron and steel mill and other products valued at \$120.8 million; steelmaking materials, \$59.1 million; finished metal shapes, \$52.5 million; drilling and oilfield equipment, \$51.6 million; organic chemicals, \$50.9 million; unclassified nonferrous metals, \$9 million; and bauxite and aluminum, \$4.9 million. Total imports to Czechia from the United States were valued at \$2.79 billion. This included imports of finished metal shapes valued at \$57.0 million; metalworking machine tools, \$35.5 million; other chemicals, \$31.7 million; manufactured mineral supplies, \$21.4 million; and unclassified nonferrous metals, \$14.4 million (U.S. Census Bureau, 2020a, b).

Structure of the Mineral Industry

Most mineral and mineral-processing facilities are privately owned. Table 2 is a list of major mineral industry facilities in Czechia.

Commodity Review

Metals

Iron and Steel.—Czechia did not produce iron ore and was import reliant on the commodity. In 2018 (the latest year for which data were available), the country imported 5.3 million metric tons (Mt) of iron ore. In 2019, Czechia produced about 3.6 Mt of pig iron and about 4.6 Mt of raw steel. In June, ArcelorMittal S.A. of Luxembourg completed the sale of ArcelorMittal Ostrava a.s. to Liberty House Group of the United Kingdom. The acquisition was composed mainly of the integrated steelmaking site of ArcelorMittal Ostrava and its subsidiary, ArcelorMittal Tubular Products Ostrava a.s. ArcelorMittal Ostrava was the leading steel producer in the country; it had an annual production capacity of 3 million metric tons per year (Mt/yr) of raw steel (tables 1, 2; ArcelorMittal S.A., 2020, p. 129, 268; World Steel Association, 2020, p. 20).

Industrial Minerals

Lithium.—Geomet s.r.o., which was a wholly owned subsidiary of European Metals Holdings Ltd. (EMH) of the British Virgin Islands, held exploration licenses for the Cinovec lithium-tin project. In June 2019, EMH completed an updated prefeasibility study, which confirmed the deposit's potential for bulk underground mining and estimated expected production of about 25,300 metric tons per year of battery-grade lithium hydroxide from processing an average of 1.68 Mt/yr of ore. The company also announced the successful production of battery-grade lithium hydroxide from lithium hydroxide test work. In July, the company announced discussions with CEZ Group, Czechia's national power utility, concerning a development partnership. In August, the company was granted an extension to the Cinovec exploration license until yearend 2020. The indicated resources were estimated to be 372.4 Mt at grades of 0.45% lithium oxide and 0.04% tin (European Metals Holdings Ltd., 2019, p. 4, 5).

Mineral Fuels and Related Materials

Coal.—Proven coal reserves in Czechia were estimated to be 705 Mt. In 2017 (the latest year for which data were available), 37.2% of domestic energy demand was met by imports. In 2018, coal supplied 36.2% of the country's total primary energy consumption. In 2019, Ostravsko-Karvinské Doly a.s. (OKD) operated three mines near Ostrava and Karvina and was the only company to mine bituminous coal; Severoceske Doly a.s. operated the country's two largest lignite coal mines. The production of bituminous coal decreased by 23% to 1.48 Mt in 2019, and the production of lignite decreased by 4% to 37.5 Mt. The overall decrease in coal production was owing to low demand, which was partly due to warm weather (table 1; Euracoal, 2020a, p. 11; 2020b).

Uranium.—Czechia had six nuclear reactors that generated power for about one-third of the country's total electrical energy consumption. In 2015, the national energy policy reinforced the country's intentions to cut carbon emissions by reducing fossil fuel use and increasing nuclear energy production. In 2016, the Government created a new committee under the Prime Minister to develop the nuclear program in Czechia, including the construction of a new reactor at Dukovany. Construction was expected to begin in 2029. In 2016, the Rozna I Mine, operated by DIAMO s.p. and owned by the Government, partially shut down because of unfavorable uranium prices. The closure of the Rozna I Mine reduced uranium production to 29 metric tons (t) in 2018 and 33 t in 2019. In 2019, uranium was produced only as a byproduct of remediation of mining tailings and waters from the Příbram and Rozna deposits (table 1; DIAMO s.p., 2020; World Nuclear Association, 2020).

Outlook

Czechia's economy, measured in constant prices, is expected to contract by about 6.5% in 2020 because of the coronavirus disease 2019 (COVID-19) pandemic and to grow by 5.1% in 2021 according to the International Monetary Fund. The country's production of bituminous and lignite coal is expected to decrease in the coming years in light of the country's push for clean energy. The construction of the Dukovany nuclear reactor, which is expected to begin in 2029, will likely increase domestic demand for cement and other construction materials. The development of the Cinovec lithium and tin project could drive significant economic activity as well as affect the global lithium supply (International Monetary Fund, 2020, p. 55).

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TABLE 1
CZECH REPUBLIC: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019
METALS					
Aluminum, metal, secondary	64	79	62	66	66
Iron and steel:					
Pig iron	4,031	4,165	3,691	4,005	3,635
Steel:					
Raw steel	5,262	5,305	4,550	4,938 ^r	4,563
Products, rolled	4,459	4,657	4,200	4,600	4,300
Lead, refinery, secondary	45	43	45	45	45
INDUSTRIAL MINERALS					
Cement, hydraulic	3,781	3,937	4,043	4,428 ^r	4,569
Clay:					
Bentonite	369	374	254	277	357
Brick, including related materials	1,622	1,984	1,672	2,021	1,791
Kaolin	3,454	3,540	3,669	3,622	3,446
Other, unspecified	569	538	537	469	441
Diatomite	15	26	34	31	43
Feldspar	433	454	368	449	460
Feldspar substitutes, including nepheline syenite	21	31	34	31	33
Gemstones, mine:					
Moldavite-bearing rock	120	128	97	110	76
Pyrope-bearing rock	17	8	34	13	12
Gypsum, mine, including anhydrite	11	10	7	8	10
Lime, hydrated and quicklime	1,006	1,066	935	1,038	952
Nitrogen, ammonia, N content	180	170	180	140 ^r	130
Sand and gravel, industrial:					
Silica sand	535	521	556	559	514
Glass sand	812	801	755	743	740
Stone, sand, and gravel, construction:					
Common sand and gravel	19,546	18,338	19,848	20,473	19,982
Stone:					
Crushed:					
Dolomite	451	440	450	451	453
Limestone, including other calcareous stone	10,568	11,412	10,787	11,727	11,357
Quartz and quartzite	14	18	17	16	17
Other, unspecified	40,260	37,242	37,873	41,286	41,866
Dimension, unspecified	654	551	389	362	359
Sulfur, compounds, sulfuric acid	244	398	415	410 ^c	400 ^c
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Bituminous	3,591	2,855	2,289	1,932	1,481
Lignite	38,251	38,646	39,310	39,187	37,465
Metallurgical	4,049	3,219	2,581	2,178	1,670
Coke, metallurgical, from coke ovens	2,332	2,209	2,488	2,549	2,355
Natural gas, marketable	million cubic meters	200	169	171	179
Petroleum:					
Crude	thousand 42-gallon barrels	920	847	781	796
Refinery	do.	50,800	42,400	61,700	59,000
Uranium, mine, U content:					
Ore	metric tons	134	137	59	34
Concentrate	do.	122	128	56	33

^cEstimated. ^rRevised. do. Ditto.

¹Table includes data available through October 20, 2020. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, secondary copper, ferrovanadium, secondary gold recovered from scrap, graphite, precious metals, tungsten, and zinc metal may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
CZECHIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, secondary	Alcan Decin Extrusions s.r.o. (Constellium)	Decin, northern Bohemia	92
Do.	Kovohute Holdings DT- Mnišek Division (majority owned by Demonta Trade SE)	Mnisek pod Brdy	100
Cement	Cement Hranice a.s. (Dyckerhoff Aktiengesellschaft, 100%)	Hranice	1,100
Do.	CEMEX Czech Republic s.r.o. (CEMEX, s.a.b. de c.v., 100%)	Prachovice	1,000
Do.	Ceskomoravsky Cement a.s. (Heidelberg Cement AG, 100%)	Mokra	1,400 ^e
Do.	do.	Radotin	800 ^e
Do.	do.	Kraluv Dvur	NA
Do.	Lafarge Cement a.s. (LafargeHolcim S.A., 68%, and STRABAG SE, 32%)	Cizkovice	1,200
Clay:			
Bentonite	KERAMOST a.s.	Most	NA
Do.	Sedlecky Kaolin a.s.	Bozicany	NA
Kaolin	Kaolin Hlubany a.s.	Podborany	NA
Do.	KERAMOST a.s.	Most	NA
Do.	KSB s.r.o.	Bozicany	NA
Do.	LB Minerals s.r.o.	Horni Briza	NA
Do.	Sedlecky Kaolin a.s.	Bozicany	NA
Unspecified	Ceske Lupkove Zavody a.s.	Nove Straseci (refractory clay)	NA
Do.	KERAMOST a.s.	Most	NA
Do.	LB Minerals s.r.o.	Horni Briza	NA
Do.	P-D Refractories CZ a.s.	Velke Opatovice (refractory clay)	NA
Do.	RAKO-LUPKY s.r.o.	Lubna u Rakovnika	NA
Coal:			
Bituminous	Ostravsko-Karvinské doly a.s. (OKD) (New World Resources N.V.)	3 mines near Ostrava and Karvina in eastern Czechia	10,000 ^e
Lignite	Dul Kohinoor a.s. (Severní Energetická a.s.)	Centrum Mine in Mariánské Radčice	350 ^e
Do.	Lignit Hodonin s.r.o.	Hodonin, south of Moravia	500
Do.	Severní Energetická a.s.	CSA Mine near Most	5,000 ^e
Do.	Severoceske doly a.s. (CEZ Group a.s., 100%)	Nastup Tusimice Mine southwest of Chomutov and Bilina Mine in Bilina	25,000 ^e
Do.	Sokolovska Uhelna a.s.	Jiri and Druzba Mines at Sokolov	10,000 ^e
Do.	Vrsanska Uhelna a.s. (Severní energetická a.s.)	Vrsany Mine just west of Most (contains the Vrsany and the Sverma sites)	10,000 ^e
Coke	Liberty Ostrava a.s. (Liberty House Group, 100%)	Ostrava	1,500
Do.	Ostravsko-Karvinské Koksovny a.s. (OKK) (MTX Group)	Jan Sverma coking plant near Ostrava	800
Do.	do.	Svoboda coking plant near Ostrava	650
Do.	Trinecké Železárny a.s. (Moravia Steel a.s., 69%)	Trinec	700
Feldspar	AGRO Brno - Turany a.s.	Brno	NA
Do.	Ceske Sterkopisky Spol s.r.o.	Prague	NA
Do.	Druzstvo DRUMAPO	Nemcicky	NA
Do.	KMK Granit a.s.	Krasno	NA
Do.	LB Minerals s.r.o.	Horni Briza	NA
Feldspar substitutes (including nepheline phonolite and syenite)	KERAMOST a.s.	Most	NA
Ferrovandium	Nikom a.s. (Evraz Vitkovice Steel a.s.)	Vitkovice-Ostrava	5
Gold, metal, secondary	Galmet Trade, Spol. s r.o.	Chvaletice	NA
Do.	Kovohute Pribram Nastupnicka a.s.	Pribram	NA
Graphite	Grafitove doly Stare Mesto s.r.o.	Stare Mesto	NA

See footnotes at end of table.

TABLE 2—Continued
CZECHIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel:				
Pig iron		Liberty Ostrava a.s. (Liberty House Group, 100%)	Kunice-Ostrava	3,000
Do.		Trinecké Železarny a.s. (Moravia Steel a.s., 69%)	Trinec	2,100
Steel:				
Raw		ArcelorMittal Ostrava a.s. (Liberty House Group, 100%)	Kunice-Ostrava	3,000
Do.		Pilsen Steel s.r.o. (OAO OMZ)	Plzen	150
Do.		Poldi s.r.o. (Ferromet a.s.)	Kladno	120 ^e
Do.		Trinecké Železarny a.s. (Moravia Steel a.s., 69%)	Trinec	2,600
Do.		Vitkovice Heavy Machinery a.s.	Vitkovice-Ostrava	200
Processed products		Liberty Tubular Products Ostrava a.s. (Liberty House Group, 100%)	Kunčice	600
Do.		Vitkovice Steel a.s. (Private investors, 100%)	Vitkovice-Ostrava, including:	
			Rolling mill	755
Do.		do.	Section mill	170
Do.		ZDB Drátovna a.s. (Trinecké Železarny a.s.)	Bohumín	40 ^e
Do.		Železarny Chomutov s.p. (Ferromet a.s.)	Chomutov	NA
Do.		Železarny Hradek a.s. (Ferromet a.s.)	Hradek	NA
Do.		Železarny Veselí, a.s. (Ferromet a.s.)	Veselí nad Moravou	NA
Lead, refined, metal, secondary		Kovohute Píbram Nastupická a.s.	Píbram	50
Natural gas	million cubic meters	Gasfield operators in Brno and Ostrava regions, including: Ceska Naftarska Spol s.r.o. Green Gas DPB a.s. Moravske Naftove doly a.s. UNIGEO a.s.	Eastern and southeastern Czechia, including: Hodonin Paskov Hodonin Ostrava-Hrabova	200 ^{e, 1}
Petroleum:				
Crude	thousand 42-gallon barrels	Oilfield operators around Hodonin, including: Ceska Naftarska Spol s.r.o. Moravske Naftove doly a.s. UNIGEO a.s.	Of which: Hodonin do. Ostrava-Hrabova	2,100 ^{e, 1}
Refinery	million 42-gallon barrels	Unipetrol rpa a.s.	Refineries at Litvinov-Zaluzi and Kralupy nad Vltavou	68
Sand, industrial (glass and foundry)				
Do.		Kalcit s.r.o.	Brno	NA
Do.		Kaolin Hlubany a.s. (WBB Minerals, 94%)	Podborany	NA
Do.		LB Minerals s.r.o.	Horní Briza	NA
Do.		PEDOP s.r.o.	Lipovec	NA
Do.		Provodinske pisky a.s.	Provodín	NA
Do.		SEDOS doprava a.s.	Drnovice	NA
Do.		Sklopisek Strelec a.s.	Mladejov	NA
Do.		SETRA s.r.o.	Brno	NA
Tungsten, products		Global Tungsten & Powders Corp.	Bruntal	NA
Uranium, mine output, U content	metric tons	DIAMO s.p. (Government, 100%)	Rozna I Mine at Dolní Rozinka	200 ²

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

¹Annual capacity listed is total for all deposits, mines, and companies that produce the commodity.

²Partially shut down since 2016.