



2011 Minerals Yearbook

CZECH REPUBLIC

THE MINERAL INDUSTRY OF THE CZECH REPUBLIC

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In 2011, the Czech Republic was ranked fourth among the world's leading producers of kaolin and 27th among the world's leading producers of crude steel, by volume. Coal, coke, and steel were the mineral commodities that were most significant to the country's domestic and regional markets. The Czech Republic was a significant Central European producer of heavy industrial goods manufactured by the country's chemical, machine building, and toolmaking industries. The production of coal for thermal powerplants and the use of nuclear power were significant sources of electricity and helped the country maintain a lower level of dependence on imported natural gas for electricity production than other countries in Central and Eastern Europe. Other mineral commodities produced in the country included cement, common sand and gravel, dolomite, feldspar, gypsum, natural gas, and uranium (Virta, 2012; World Steel Association, 2012, p. 11).

Minerals in the National Economy

The Czech Republic's real gross domestic product (GDP) increased by 1.7% in 2011 compared with that of 2010. Based on estimated data from the Czech Statistical Office, mining and quarrying activities made up about 1.4% (\$2.4 billion¹) of the total GDP in 2011. Mineral commodities made up a relatively small share of total external trade, and the only mineral commodity trade of significance was mineral fuel imports. In 2011, the Czech Republic imported 9.30 billion cubic meters of natural gas and about 76.2 million barrels (or 208,800 barrels per day) of crude oil in 2010 (the latest year for which data were available) (Czech Geological Survey, 2010, p. 191, 205; Czech Statistical Office, 2012a, b; U.S. Central Intelligence Agency, 2012).

Government Policies and Programs

Three main laws are applicable to the mineral industry in the Czech Republic. Act No. 44/1988 on the Protection and Use of Mineral Resources (the Mining Act), as amended, defines the minerals that are owned by the Government, establishes the authority of certain Government agencies with respect to mining activity, and sets out other rules on the management of mineral resources in the Czech Republic. The Czech National Council Act No. 62/1988, on Geological Work (the Geological Act), as amended, establishes the rules for prospecting and exploration of most mineral deposits. Act No. 61/1988 on Mining Operations, Explosives and on the State Mining Administration, as amended, defines appropriate mining methods. The Ministry of the Environment enforces environmental laws in the mining sector and has the authority to revoke exploration and mining leases if environmental laws are violated (Czech Geological Survey, 2010, p. 27–28).

¹Where necessary, values have been converted from Czech koruna (CZK) to U.S. dollars (US\$) at the rate of CZK20.10=US\$1.00.

In 1991, the Czech Government passed Government Resolution No. 444/1991, which established geographic limits on the expansion of coal and uranium mining. It was estimated that about 750 million metric tons (Mt) of brown coal reserves as well as some uranium reserves were located in areas where mining is restricted. A national energy policy document State Energy Concept (SEC), which is a document with a 30-year outlook, was approved in 2004. The SEC had been reviewed twice by the Ministry of Industry and Trade (MIT) before it was approved. The SEC 2004 included the following priorities: decrease the energy intensity [measured by the ratio of total primary energy supply (TPES) (in tons of oil equivalent) to GDP], maintain the current level of TPES; and comply with binding European Union emission limits in 2010. In 2009, the MIT prepared an updated draft of the SEC, which included the following strategies: achieve a balanced energy mix, with preferential use of all domestic energy resources, and maintain excess production of electricity; improve energy efficiency and reduce energy intensity, particularly in the building sector; increase energy security and the ability of the country to respond to energy supply disruptions; and minimize the effects of energy use on the environment (Czech Coal Group, 2010, p. 75; International Energy Agency, 2010, p. 22–23, 45).

Production

In 2011, gypsum production increased by 120% to 11,000 metric tons (t) from 5,000 t in 2010; diatomite production increased by 44% to 46,000 t from 32,000 t; other clays production, by 16% to 499,000 t; cement production, by 14% to 3,831 t; limestone production, by 14% to 11.2 million metric tons (Mt); and common sand and gravel production, by 11% to 21.4 Mt. Gemstone production decreased by 26% to 17,000 t from a revised 23,000 t in 2010; dimension stone production decreased by 21% to 648,000 t from 823,000 t; foundry sand production, by 16% to 395,000 t; and bentonite production, by 13% to 160,000 t. Data on mineral production are in table 1.

Mineral Trade

The Czech Republic's exports to the United States were valued at about \$3.3 billion in 2011 compared with about \$2.4 billion in 2009. Drilling and oilfield equipment and platforms accounted for about \$172 million of these exports; iron and steel products, except advanced manufacture, about \$100 million; and iron and steel mill products, about \$53 million. Imports from the United States were valued at about \$1.7 billion in 2011 compared with \$1.4 billion in 2010; these included nearly \$36 million in excavating machinery and about \$27 million in metal working machine tools (U.S. Census Bureau, 2012a, b).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Iron and Steel.—The Czech Republic had no economically exploitable iron ore deposits and imported all iron ore products used in primary steel production. In 2010 (the latest year for which data were available), about 5.9 Mt of iron ore and concentrate was imported by the Czech Republic. In January, ArcelorMittal of Luxembourg acquired an additional 13.9% interest in its subsidiary ArcelorMittal Ostrava a.s., which increased the company ownership to 96.43%. In July, the company completed the acquisition of the remaining 3.57% interest. The steelmaking plant, which is located in the Moravian-Silesian region, had an annual capacity of about 3 Mt of steel and employed about 6,000 workers (ArcelorMittal Ostrava a.s., 2011; Czech Geological Survey, 2011, p. 204; ArcelorMittal, 2012, p. 118).

Industrial Minerals

Cement.—Dyckerhoff AG of Germany through its subsidiary Cement Hranice a.s. held 100% interest in the Hranice cement plant. The plant, which was located in the eastern part of the Czech Republic, increased production by 26% to reach 959,000 t of cement compared with about 760,000 t in 2010. In 2011, the company exported about one-third of its production to Poland (Dyckerhoff AG, 2012).

Mineral Fuels and Related Materials

Coal.—CEZ, a.s. through its subsidiary Severoceske doly a.s. held 100% ownership in the Bilina and the Nastup Tusimice brown coal mines. Production from the Bilina Mine, which is located in the Teplice-Bilina area, increased by about 8.5% to 10.1 Mt from 9.3 Mt of brown coal produced in 2010. As of December, extractable reserves at the Bilina Mine were estimated to be about 164.4 Mt of brown coal. The company expected to produce about 9.6 Mt of brown coal at the Bilina Mine by 2012. Production of brown coal from the Nastup Tusimice Mine, which is located in the Usti Region, increased by about 22% to 15 Mt from 12.3 Mt in 2010. CEZ expected to produce about 15.5 Mt of brown coal at Nastup Tusimice by 2012. The company also planned to develop the Libous II pit, which is located in the Tusimice mining area, subject to the approval of a mining activity permit for opening, preparation, and extraction. As of December, extractable coal reserves at the Tusimice area were estimated to be about 240.2 Mt. The company expected to continue operations at the Tusimice Mine and the Bilina Mine until 2040 and 2055, respectively (Severoceske doly a.s., 2012, p. 11, 59–60, 78).

Petroleum.—Orlen Group of Poland through its subsidiary Unipetrol, a.s. held a 51.2% interest in Ceska Rafinerska, a.s. in joint venture with Dutch companies Eni International B.V. (32.5%) and Shell Overseas Investments B.V. (16.3%). Ceska

Rafinerska operates the Litvinov and the Kralupy refineries and had a total capacity of 8.8 Mt/yr. In 2011, crude oil production from the Kralupy and the Litvinov refineries was about 2.2 Mt and 4.1 Mt, respectively. The Kralupy refinery was shut down several times during the year for regular maintenance of the plant, a repair of the rail-loading facility and other repairs, and periodic inspections. Unipetrol also owned the Paramo refinery, which was located in Pardubice. In December, the company announced the temporary suspension of the Paramo refinery's middle distillate desulfurization unit and atmospheric and vacuum distillation unit owing to low refinery margins. The company expected to restart operations by March 2012 (Unipetrol, a.s., 2011; 2012, p. 5, 9, 26–29).

Uranium.—DIAMO s.p. remained the only domestic producer of uranium, and it supplied CEZ (the owner of the Czech Republic's two nuclear powerplants) with about one-third of the uranium it required. All domestically produced uranium was sent to Russia for processing into fuel. All nuclear fuel for the Dukovany Nuclear Power Station was purchased from the Russian firm OAO TVEL, whereas the Temelin Nuclear Power Station obtained its fuel from Westinghouse Electric Company LLC of the United States. CEZ's nuclear powerplants accounted for about 32% of all electricity in the Czech Republic in 2011 (CEZ Group, 2012, p. 102; Severoceske doly a.s., 2012, p. 65).

Outlook

The Czech Republic forecasted a GDP growth rate of 3.2% for 2012. The economic activity in the country is expected to remain flat in 2012 and gradually to increase in 2013 as external conditions improve (International Monetary Fund, 2012a, p. 1, 5; b, p. 199). Dependence on imports of natural gas and petroleum is likely to continue to affect the trade balance negatively, but production of coal is likely to remain stable and provide a significant portion of fuel for electricity generation.

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TABLE 1
CZECH REPUBLIC: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2007	2008	2009	2010	2011	
METALS						
Aluminum, metal, secondary ^c	48,000	47,000	45,000	45,000	45,000	
Iron and steel, metal:						
Pig iron	thousand metric tons	5,287	4,737	3,483	3,987	4,137
Steel, crude	do.	7,059	6,387	4,594	5,180	5,583
Semimanufactures, hot rolled	do.	6,101	5,801	3,957	4,608	5,000
Lead, metal, secondary		34,000	36,000	29,000	30,000	32,000
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	4,899	4,710	3,637	3,345	3,831
Clays:						
Bentonite	do.	335	174	177 ^r	183	160
Kaolin	do.	3,604	3,833	2,886	3,493	3,606
Other	do.	679	574	377	429	499
Diatomite		19,000	31,000	--	32,000	46,000
Dolomite		385,000	449,000	337,000	385,000	369,000
Feldspar		514,000	488,000	431,000	388,000	407,000
Gemstones, crude, pyrope-bearing rock		34,000	24,000	26,000 ^r	23,000 ^r	17,000
Graphite		3,000	3,000	--	--	--
Gypsum and anhydrite, crude		66,000	35,000	13,000	5,000	11,000
Lime, hydrated and quicklime ^c	thousand metric tons	1,277 ³	1,150 ³	1,000	1,000	1,000
Nitrogen, N content of ammonia ^c		225,000	200,000	200,000	200,000	200,000
Sand and gravel:						
Common sand and gravel	thousand metric tons	28,233	27,306	23,974 ^r	19,240	21,424
Foundry sand	do.	850	702	374	473	395
Glass sand	do.	942	1,151	990	888	976
Stone:						
Crushed	do.	43,214	44,277	41,307 ^r	37,270	36,717
Dimension	do.	788	723	710 ^r	823	648
Limestone and other calcareous stones	do.	11,279	11,465	9,489	9,828	11,244
Sulfur, byproduct, all sources ^c		45,000	45,000	40,000	40,000 ^c	40,000 ^c
Sulfuric acid ^c		275,900 ³	215,000 ³	200,000	200,000	200,000
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	12,462	12,197	10,621 ^r	11,193	10,967
Brown and lignite	do.	49,571	47,872	45,616	43,931	46,848
Total	do.	62,033	60,069	56,237	55,124	57,815
Coke ^c	do.	3,258 ³	3,399 ³	2,400	2,400	2,400
Fuel briquets from brown coal ^c	do.	247 ³	156 ³	150	150	150
Gas:						
Manufactured, all types ^c	million cubic meters	1,411 ³	1,442 ³	1,000	1,500	1,500
Natural, marketed	do.	148	168	180	201	187
Petroleum: ^c						
Crude ⁴	thousand 42-gallon barrels	1,600	1,600	1,500	1,173 ³	1,105 ³
Refinery products ⁵	do.	52,000	58,000	52,000	58,000 ^r	53,000
Uranium:						
Mine output, U content		322	290	286	259	252
U ₃ O ₈ content ^c		380	342	337	305	297
Concentrate production, U content		291	261	243	237	216

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

¹Table includes data available through June 20, 2012.

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

³Reported figure.

⁴Figures were converted to barrels from production reported in thousand metric tons, as follows: 2007—240; 2008—236; 2009—217; 2010—173; and 2011—163.

⁵Estimated based on throughput reported in million metric tons, as follows: 2007—7.40; 2008—8.25; 2009—7.38; 2010—8.70 (estimated); and 2011—7.57 (estimated).

TABLE 2
CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(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.	Decin, northern Bohemia	NA
Do.		Kovohute Holdings DT- Mnisek Division (majority owned by Demonta Trade SE)	Mnisek pod Brdy	NA
Bentonite		Keramost a.s.	Most	NA
Do.		LITH s.r.o.	Male Chvojno	NA
Cement		Cement Hranice a.s. (Dyckerhoff AG, 100%)	Hranice	1,100
Do.		Ceskomoravsky Cement a.s. (Heidelberg Cement AG, 100%)	Mokra	1,400 ^e
Do.		do.	Radotin	800 ^e
Do.		Holcim (Cesko) a.s.	Prachovice	1,200
Do.		Lafarge Cement a.s.	Cizkoviccka	1,200
Clay		Ceske Lupkove Zavody a.s.	Nove Straseci (refractory clay)	NA
Do.		Chlumcanske Keranicke Zavody a.s.	Chlumcany (kaolin)	NA
Do.		Kaolin Hlubany a.s. (WBB Minerals, 94%)	Podborany	NA
Coal:				
Bituminous		OKD a.s. (New World Resources N.V.)	4 mines near Ostrava and Kravina in eastern Czech Republic	13,000 ^e
Brown		Dul Kohinoor a.s. (Czech Coal Group)	Centrum Mine in Marianske Radcice	350 ^e
Do.		Litvinovska uhelna a.s. (Czech Coal Group)	CSA Mine near Most	5,000 ^e
Do.		Severoceske doly a.s. (CEZ Group, 100%)	Nastup Tusimice Mine southwest of Chomutov and Bilina Mine in Bilina	23,000 ^e
Do.		Sokolovska uhelna a.s.	Jiri and Druzba Mines at Sokolov	10,000 ^e
Do.		Vrsanska uhelna a.s. (Czech Coal Group)	Vrsany Mine just west of Most (contains the Vrsany and the Sverma sites)	10,000 ^e
Lignite		Lignit Hodonin s.r.o.	Hodonin, south of Moravia	500
Coke		ArcelorMittal Ostrava a.s.	Ostrava	1,500
Do.		OKK Koksovny a.s. (New World Resources N.V.)	Jan Sverma coking plant near Ostrava	400
Do.		do.	Svoboda coking plant near Ostrava	600
Do.		Trinecke Zelezarny a.s. (Moravia Steel a.s., 69%)	Trinec	700
Ferrovandium		Nikom a.s. (Evraz Vitkovice Steel a.s.)	Vitkovice-Ostrava	NA
Gold, metal, secondary		Kovohute Pribram Nastupickna a.s.	Pribram	NA
Graphite		Grafitove doly Stare Mesto s.r.o.	Stare Mesto	NA
Lead, metal, secondary, refined		Kovohute Pribram Nastupickna a.s.	Pribram	30
Natural gas	million cubic meters	Gasfield operators in Brno and Ostrava regions, including: Moravske Naftove doly a.s. Ceska Naftarska Spol s.r.o. Green Gas DPB a.s. UNIGEO a.s.	Eastern/Southeastern Czech Republic, of which: Hodonin do. Paskov Ostrava-Hrabova	200 ^{e,1}
Petroleum:				
Crude	thousand 42-gallon barrels	Oilfield operators around Hodonin, including: Moravske Naftove doly a.s. Ceska Naftarska Spol s.r.o. UNIGEO a.s.	Of which: Hodonin do. Ostrava-Hrabova	2,100 ^{e,1}
Refinery	thousand 42-gallon barrels per day	Paramo a.s. (Unipetrol a.s.)	Refineries at Kolin and Pardubice	20 ^e
Do.	do.	Ceska Rafinerska (Unipetrol a.s., 51.2%, Eni International B.V., 32.5%, Shell Overseas Investments B.V., 16.3%)	Refineries at Litvinov and Kralupy nad Vltavou	165 ^e
Pig iron		ArcelorMittal Ostrava a.s. (ArcelorMittal, 100%)	Kunice-Ostrava	3,000
Do.		Trinecke Zelezarny a.s. (Moravia Steel a.s., 69%)	Trinec	2,100
Steel, crude		ArcelorMittal Ostrava a.s. (ArcelorMittal, 100%)	Kunice-Ostrava	3,000
Do.		Evraz Vitkovice Steel a.s.	Vitkovice-Ostrava	950
Do.		Pilsen Steel s.r.o. (OAO OMZ)	Plzen	150
Do.		Poldi Hutte s.r.o. (Scholz Edelstahl A.G.)	Kladno	120 ^e
Do.		Trinecke Zelezarny a.s. (Moravia Steel a.s., 69%)	Trinec	2,440
Do.		Vitkovice Heavy Machinery a.s.	Vitkovice-Ostrava	200

See footnotes at end of table.

TABLE 2—Continued
 CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Steel, crude—Continued	Zelezarny Hradek a.s. (Z-Group Steel Holding)	Hradek	NA
Do.	Zelezarny Veseli, a.s. (Z-Group Steel Holding)	Veseli nad Moravou	NA
Do.	Zelezarny Chomutov s.p. (Z-Group Steel Holding)	Chomutov	NA
Do.	ZDB Group a.s.	Bohumin	40
Uranium, U content	metric tons DIAMO s.p.	Rozna I Mine at Dolni Rozinka	500 ^e

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

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