



# 2010 Minerals Yearbook

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CZECH REPUBLIC

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# THE MINERAL INDUSTRY OF THE CZECH REPUBLIC

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The Czech Republic was an important Central European producer of heavy industrial goods manufactured by the country's chemical, machine building, and toolmaking industries. Coal, coke, and steel production were of domestic and regional importance. The production of coal for thermal powerplants and the use of nuclear power were important 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.

## Minerals in the National Economy

The Czech Republic's real gross domestic product (GDP) increased by 2.7% in 2010 compared with the GDP in 2009. Industrial manufacturing was the largest component (37.6%) of the country's GDP; its main manufactured products were machinery and equipment, metallurgy, and motor vehicles. Mining and quarrying activities, which were valued at \$2.3 billion,<sup>1</sup> made up only about 1% of the total GDP. 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 2009 (the latest year for which data were available), the Czech Republic imported 208,800 barrels per day of crude oil and 8.51 billion cubic meters of natural gas. About 73% of crude oil imports and an estimated 75% of natural gas imports were imported from Russia (Czech Geological Survey, 2010, p. 191, 205; Czech Statistical Office, 2010a–c; U.S. Central Intelligence Agency, 2011).

## 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).

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

<sup>1</sup>Where necessary, values have been converted from Czech koruna (CZK) to U.S. dollars (US\$) at the rate of CZK19.09=US\$1.00.

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. In October 2009, the Energy and Trade Ministry stated in its 5-year energy plan that it wanted to renew mining in some restricted areas, which set off protests by environmentalists and other groups. The energy plan had not been passed by the end of 2009, and the renewal of mining in restricted areas remained under consideration (Delbos, 2009; Czech Coal Group, 2010, p. 75).

## Production

In 2010, the Czech Republic saw increases in its production of bentonite (57.8%), kaolin (21%), hot-rolled steel semimanufactures (16.5%), pig iron (14.5%), dolomite (14.2%), and crude steel (12.8%), among the most significant. Also, there were significant decreases in the production of gypsum (61.5%), crude petroleum (21.8%), and common sand and gravel (18.5%). In 2009, the Czech Republic was especially affected by reduced demand in the European Union (EU), where its major trade partners are located, and by the domestic slowdown in construction investment, which was estimated to have fallen by 10%. A recovery began to take place in 2010, however, because of increased demand for the country's products abroad (table 1; Czech Geological Survey, 2010, p. 46).

## 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 2008 (the latest year for which data were available), about 7.7 Mt of iron ore and concentrate was imported by the Czech Republic; about 60% of these imports came from Ukraine and about 27% came from Russia. ArcelorMittal Ostrava a.s. and Třinecké železárny a.s. were the only producers of pig iron and combined accounted for about 80% of the total crude steel production in the Czech Republic. Crude steel production increased in 2010 owing to the increased demand for steel products, particularly for the automotive industry (Czech Geological Survey, 2010, p. 456–465; Czech Statistical Office, 2010a; World Steel Association, 2011).

### Mineral Fuels and Related Materials

**Coal.**—The Czech Republic was self-sufficient in coal production. Production by the Czech Republic's only

bituminous coal miner, OKD a.s., had been negatively affected by reduced steel production in Europe in 2009 and the accompanying reduction in demand for coking coal. Demand, however, increased in 2010 as production in the steel industry was reactivated. OKD reported Joint Ore Reserves Committee (JORC)-compliant reserves of about 206 Mt of bituminous coal and produced 11.2 Mt of coal in 2010 (OKD a.s., 2010, p. 16–17).

If current mine expansion restrictions stipulated by Government Resolution No. 444/1991 in 1991 are not lifted, the Czech Coal Group's CSA Mine planned to reduce coal production to about 2.5 million metric tons per year (Mt/yr) from about 5 Mt/yr after 2012 and to continue to produce at this rate until 2020. The Czech Coal Group reported that the CSA Mine had 37.3 Mt of coal reserves within the current mining limits, but that there were 750 Mt of reserves located beyond the mining limit that could significantly extend the life of the mine if the limits were expanded. At the Vrsany Mine, the Sverma site had only about 8.6 Mt of reserves remaining and was expected to close by 2012. The Vrsany site had about 305.5 Mt of reserves, and the Czech Coal Group estimated that it would be able to produce at the rate of 7 Mt/yr until 2052. The Czech Coal Group planned to continue to produce about 280,000 metric tons per year at the Centrum Mine until 2012, when the mine would be closed. The two other brown coal producers, Severočeské doly a.s. and Sokolovská uhelná a.s., produced 22.4 Mt and 8.6 Mt of brown coal, respectively, in 2009 (the latest year for which data were available). Under current geographic coal mining restrictions, the Czech Coal Group's subsidiary Czech Coal a.s. estimated that production of brown coal in the Czech Republic would be 45 Mt/yr until 2013, 40 Mt/yr from 2013 until 2021, 33 Mt/yr from 2021 until 2023, 26.5 Mt/yr from 2023 until 2032, 17.5 Mt/yr from 2032 until 2039, 8.5 Mt/yr from 2039 until 2044, and 7 Mt/yr from 2044 until 2052 when brown coal mining would completely stop (Czech Coal Group, 2009; 2010, p. 26, 28, 30, 72; Severočeské doly a.s., 2010, p. 13; Sokolovská uhelná a.s., 2010, p. 2).

Lignite Hodonin s.r.o., which was the Czech Republic's only lignite mining company, was declared insolvent in September. As a result, no lignite was mined in the Czech Republic in 2010 (Czech Business Weekly, 2010).

**Uranium.**—DIAMO s.p. remained the only domestic producer of uranium, and it supplied CEZ a.s. (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. The supplies of fuel from Westinghouse were scheduled to end in 2010, after which time the fuel for Temelin would be supplied by OAO TVEL. CEZ's nuclear powerplants produced about 33% of all electricity in the Czech Republic in 2009. Uran Ltd. of Australia's applications

for exploration licenses in the Brzkov and Liberec regions were rejected, but the company had filed an appeal of the decision (CEZ Group, 2010, p. 96; Severočeské doly a.s., 2010, p. 54, Uran Ltd., 2010, p. 7).

## Outlook

The Czech Republic began an economic recovery in 2010. The crisis that had reduced the demand for Czech mineral products both domestically and in export markets seemed to subside slowly, principally as a result of the global increase in demand for steel for use in automotive manufacturing. Dependence on imports of natural gas and petroleum is likely to continue to affect the trade balance negatively, but production of coal will likely remain stable and provide a significant portion of the country's fuel requirements for electricity generation.

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TABLE 1  
CZECH REPUBLIC: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2006	2007	2008	2009	2010	
METALS						
Aluminum, metal, secondary <sup>e</sup>	40,000	48,000	47,000	45,000	45,000	
Iron and steel, metal:						
Pig iron	thousand metric tons	5,192	5,287	4,737	3,483	3,987
Steel, crude	do.	6,862	7,059	6,387	4,594	5,180
Semimanufactures, hot rolled	do.	6,273	6,101	5,801	3,957 <sup>r</sup>	4,608
Lead, metal, secondary		29,000	34,000	36,000	29,000 <sup>r</sup>	30,000
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	4,239	4,899	4,710	3,637	3,345
Clays:						
Bentonite	do.	267	335	174	116	183
Kaolin	do.	3,768	3,604	3,833	2,886	3,493
Other	do.	561	679	574	377	429
Diatomite		53,000	19,000	31,000	--	32,000
Dolomite		409,000	385,000	449,000	337,000	385,000
Feldspar		487,000	514,000	488,000	431,000	388,000
Gemstones, crude, pyrope-bearing rock		39,000	34,000	24,000	22,000 <sup>e</sup>	22,000 <sup>e</sup>
Graphite		5,000	3,000	3,000	--	--
Gypsum and anhydrite, crude		16,000	66,000	35,000	13,000	5,000
Lime, hydrated and quicklime	thousand metric tons	1,186	1,277	1,150	1,000 <sup>e</sup>	1,000 <sup>e</sup>
Nitrogen, N content of ammonia <sup>e</sup>		250,000	225,000	200,000	200,000	200,000
Sand and gravel:						
Common sand and gravel	thousand metric tons	27,198	28,233	27,306	23,614	19,240
Foundry sand	do.	773	850	702	374	473
Glass sand	do.	963	942	1,151	990	888
Stone:						
Dimension stone	do.	802	788	723	704	823
Limestone and other calcareous stones	do.	10,193	11,279	11,465	9,489	9,828
Crushed stone	do.	41,561	43,214	44,277	38,302	37,270
Sulfur, byproduct, all sources <sup>e</sup>		45,000	45,000	45,000	40,000	40,000 <sup>e</sup>
Sulfuric acid		263,000 <sup>e</sup>	275,900	215,000	200,000 <sup>e</sup>	200,000 <sup>e</sup>
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	13,017	12,462	12,197	10,631	11,193
Brown and lignite	do.	49,374	49,571	47,872	45,616	43,931
Total	do.	62,391	62,033	60,069	56,247	55,124
Coke	do.	3,428	3,258	3,399	2,400 <sup>e</sup>	2,400 <sup>e</sup>
Fuel briquets from brown coal	do.	345	247	156	150 <sup>e</sup>	150 <sup>e</sup>
Gas:						
Manufactured, all types <sup>e</sup>	million cubic meters	1,400	1,411 <sup>3</sup>	1,442 <sup>3</sup>	1,000	1,500
Natural, marketed	do.	148	148	168	180	201
Petroleum: <sup>e</sup>						
Crude <sup>4</sup>	thousand 42-gallon barrels	1,800	1,600	1,600	1,500	1,173
Refinery products <sup>5</sup>	do.	55,000	52,000	58,000	52,000	52,000 <sup>e</sup>
Uranium:						
Mine output, U content		383	322	290	286	259
U <sub>3</sub> O <sub>8</sub> content <sup>e</sup>		452	380	342	337	305
Concentrate production, U content		358	291	261	243	237

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through December 12, 2012.

<sup>2</sup>In addition to the commodities listed, ferrovanadium, secondary copper, precious metals, and zinc metal may have been produced, but available information is inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>Figures were converted to barrels from production reported in thousand metric tons, which was reported as the following: 2006—259; 2007—240; 2008—236; 2009—217; and 2010—173.

<sup>5</sup>Figures were estimated based on throughput reported in million metric tons, which was reported as the following: 2006—7.87; 2007—7.40; 2008—8.25; 2009—7.38; and 2010—7.38 (estimate).

TABLE 2  
CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(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		Ceskomoravsky Cement a.s. (Heidelberg Cement AG, 100%)	Mokra	1,200 <sup>e</sup>
Do.		do.	Radotin	650 <sup>e</sup>
Do.		Lafarge Cement a.s.	Cizkoviccka	1,200
Do.		Holcim (Cesko) a.s.	Prachovice	1,400
Do.		Cement Hranice a.s. (Dyckerhoff, 100%)	Hranice	1,100
Clay		Ceske Lupkove Zavody a.s.	Nove Straseci (refractory clay)	NA
Do.		Chlumcanske Keramicke 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 <sup>e</sup>
Brown		Severočeské doly a.s. (CEZ Group)	Nastup Tusimice Mine southwest of Chomutov and Bilina Mine in Bilina	23,000 <sup>e</sup>
Do.		Litvinovska uhelna a.s. (Czech Coal Group)	CSA Mine near Most	5,000 <sup>e</sup>
Do.		Vrsanska uhelna a.s. (Czech Coal Group)	Vrsany Mine just west of Most (it includes the Vrsany and Sverma sites)	10,000 <sup>e</sup>
Do.		Dul Kohinoor a.s. (Czech Coal Group)	Centrum Mine in Marianske Radcice	350 <sup>e</sup>
Do.		Sokolovská uhelná a.s.	Jiri and Druzba Mines at Sokolov	10,000 <sup>e</sup>
Lignite		Lignit Hodonin s.r.o.	Hodonin, south 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.		Třinecké železářny a.s. (Moravia Steel a.s., 69%)	Trinec	700
Ferrovannadium		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 <sup>e,1</sup>
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 <sup>e,1</sup>
Refinery	thousand 42-gallon barrels per day	Paramo a.s. (Unipetrol a.s.)	Refineries at Kolin and Pardubice	20 <sup>e</sup>
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 <sup>e</sup>
Pig iron		Třinecké železářny a.s. (Moravia Steel a.s., 69%)	Trinec	2,100
Do.		ArcelorMittal Ostrava a.s. (ArcelorMittal, 83%)	Kunice-Ostrava	3,000
Steel, crude		do.	do.	3,000
Do.		Třinecké železářny a.s. (Moravia Steel a.s., 69%)	Trinec	2,440
Do.		Evraz Vitkovice Steel a.s.	Vitkovice-Ostrava	950
Do.		Vitkovice Heavy Machinery a.s.	do.	200

See footnotes at end of table

TABLE 2—Continued  
CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Steel, crude—Continued:			
Do.	Pilsen Steel s.r.o. (OAO OMZ)	Plzen	150
Do.	Poldi Hutte s.r.o. (Scholz Edelstahl A.G.)	Kladno	120 <sup>e</sup>
Do.	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 <sup>e</sup>

<sup>e</sup>Estimated. Do., do. Ditto. NA Not available.

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