



2009 Minerals Yearbook

CZECH REPUBLIC [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF THE CZECH REPUBLIC

By Mark Brininstool

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 many other countries in Central and Eastern Europe.

Minerals in the National Economy

The Czech Republic's real gross domestic product (GDP) decreased by 4.1% in 2009 compared with the GDP in 2008. Mining and quarrying activities 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 2008 (the latest year for which data were available), the Czech Republic imported \$9.1 billion¹ of crude oil and natural gas, which accounted for about 7.3% of the total value of imports in 2008. About 66% of crude oil imports and an estimated 75% of natural gas imports were imported from Russia (Czech Geological Survey, 2009, p. 182, 194, 196; Czech Statistical Office, 2010a-d).

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 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, 2009, 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 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

Significant decreases in production were seen across a wide range of mineral commodities in 2009 owing to the reduction in demand for mineral commodities as a result of the world economic crisis. 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 been about 4.3%. Crude steel and pig iron production decreased by about 28% and 26%, respectively, compared with production in 2008, and most industrial minerals were reported to have had significantly decreased production. Total coal production decreased by about 6%, and coke production was estimated to have decreased by about 29% (table 1; Czech Geological Survey, 2009, p. 46; Dykerhoff AG, 2010, p. 64).

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 Trinecke Zelezarny 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 decreased significantly in 2009 owing to the reduced demand for steel products as a result of the world economic crisis (Czech Geological Survey, 2009, p. 437; Czech Statistical Office, 2010e).

In 2009, Trinecke Zelezarny reduced crude steel production by about 11%, compared with production in 2008, and accounted for about 48% of steel production in the Czech Republic. The company reduced its workforce by 220 employees to 5,319 total employees as part of cost-cutting measures. ArcelorMittal Ostrava operated at only one-third capacity in the spring, but increased production to two-thirds capacity in the summer. In January, the company reported

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

that it had 7,450 employees, but by December this figure had been reduced to 5,950 employees (ArcelorMittal Ostrava a.s., 2009a-c; Trinecke Zelezarny a.s., 2010, p. 9, 16, 23-24).

Mineral Fuels and Related Materials

Coal.—The Czech Republic was self sufficient in coal production and, in 2008, coal-fueled powerplants accounted for about 59% of all electricity generated in the Czech Republic. About 6 Mt of bituminous coal and 1.6 Mt of brown coal were exported in 2008 (the latest year for which data were available) (Czech Geological Survey, 2009, p. 158; Severoceske doly a.s., 2010, p. 54).

Production by the Czech Republic's only bituminous coal miner, OKD a.s., was negatively affected by reduced steel production in Europe and the accompanying reduction in demand for coking coal. OKD reported Joint Ore Resources Committee (JORC)-compliant reserves of about 217 Mt of bituminous coal and planned to produce 11 Mt of coal in 2010 (OKD a.s., 2010, p. 16-17).

Combined, the Czech Coal Group's three mines produced 14.4 Mt of brown coal. 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 in 2012, but 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 (t/yr) at the Centrum Mine until 2012, when the mine would be closed. The two other brown coal producers, Severoceske doly a.s. and Sokolovska uhelna a.s., produced 22.4 Mt and 8.6 Mt of brown coal, respectively, in 2009. 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; Severoceske doly a.s., 2010, p. 13; Sokolovska uhelna 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 expected to be mined in 2010 (Czech Business Weekly, 2010).

Coke.—Coke production was estimated to have decreased by about 30%. Steel production in the Czech Republic and the EU decreased by 28% and 30%, respectively, which reduced the demand for Czech coke (table 1; World Steel Association, 2009, p. 10; 2010, p. 10).

OKK Koksovny a.s. produced 843,000 metric tons (t) of coke in 2009, which was a decrease of 34% compared with production in 2008. The company's production capacity decreased to 800,000 t/yr from 1.3 Mt/yr when coking battery No. 3 at the Jan Sverma plant was shut down in May owing to low demand for coke. OKK Koksovny's parent company, New World Resources N.V., announced that the Jan Sverma plant would be permanently closed at the end of 2010 and that the production capacity at the Svoboda plant would be increased to 850,000 t/yr after the introduction of a new coke battery and modernization of existing facilities (New World Resources N.V., 2010, p. 34).

In August, Trinecke Zelezarny took one of its two 350,000-t/yr coke-oven batteries out of service for maintenance; it was not scheduled to be restarted until the first quarter of 2011 (Trinecke Zelezarny a.s., 2010, p. 4, 14). In April, it was reported that ArcelorMittal Ostrava was operating at about 40% of capacity and planned to idle some of its production capacity, but it is not known if this happened (Steel Business Briefing, 2009).

Petroleum.—Estimated refined petroleum production was significantly revised for 2005 to 2008 in table 1 owing to the use of company data sources that differed from data that were used in previous Mineral Commodity Summaries. The production capacity for refined petroleum products was revised in table 2 also owing to new information and did not reflect a change in the actual capacity of the Czech Republic's refineries in 2009.

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 2008. Uran Ltd. of Australia had its applications for exploration licenses in the Brzkov and the Liberec regions rejected but the company had filed an appeal of the decision (CEZ Group, 2010, p. 96; Severoceske doly a.s., 2010, p. 54, Uran Ltd., 2010, p. 7).

Outlook

The international financial crisis was the main influence on the mineral industry of the Czech Republic in 2009. The crisis reduced demand for Czech mineral products both domestically and in export markets and caused a corresponding decrease in the production of mineral commodities. A return to previous rates of production will likely depend mainly on improved economic conditions in the EU and the Czech Republic. 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 fuel for electricity generation.

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TABLE 1
CZECH REPUBLIC: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2005	2006	2007	2008	2009
METALS					
Aluminum, metal, secondary ^e	30,000	40,000	48,000 ^r	47,000 ^r	45,000
Iron and steel, metal:					
Pig iron thousand metric tons	4,627	5,192	5,287	4,737	3,483
Steel, crude do.	6,189	6,862	7,059	6,387	4,594
Semimanufactures, hot rolled do.	5,782	6,273	6,101 ^r	5,801 ^r	4,300 ^e
Lead, metal, secondary	26,000	29,000	34,000	36,000 ^r	34,000
INDUSTRIAL MINERALS					
Cement, hydraulic thousand metric tons	3,978	4,239	4,899	4,710 ^r	3,637
Clays:					
Bentonite do.	216	267	335	174	116
Kaolin do.	3,882	3,768	3,604	3,833	2,886
Other do.	661	561	679	574	377
Diatomite	38,000	53,000	19,000	31,000	--
Dolomite	419,000	409,000	385,000	449,000	337,000
Feldspar	472,000	487,000	514,000	488,000	431,000
Gemstones, crude, pyrope-bearing rock	43,000	39,000	34,000	24,000 ^r	22,000 ^e
Graphite	3,000	5,000	3,000	3,000	--
Gypsum and anhydrite, crude	25,000	16,000	66,000	35,000	13,000
Lime, hydrated and quicklime thousand metric tons	1,211	1,186	1,277	1,150 ^r	1,000 ^e
Nitrogen, N content of ammonia ^e	250,000	250,000	225,000	200,000	200,000
Sand and gravel:					
Common sand and gravel thousand metric tons	25,335	27,198	28,233	27,306	23,614
Foundry sand do.	807	773	850	702	374
Glass sand do.	920	963	942	1,151	990
Stone:					
Dimension stone do.	927	802	788	723	704
Limestone and other calcareous stones do.	9,912	10,193	11,279	11,465	9,489
Crushed stone do.	38,048	41,561	43,214	44,277	38,302
Sulfur, byproduct, all sources ^e	45,000	45,000	45,000	45,000	40,000
Sulfuric acid	230,000 ^e	263,000 ^e	275,900	215,000	200,000 ^e
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Bituminous thousand metric tons	12,778	13,017	12,462	12,197	10,631
Brown and lignite do.	49,125	49,374	49,571	47,872	45,616
Total	61,903	62,391	62,033	60,069	56,247
Coke do.	3,412	3,428	3,258	3,399 ^r	2,400 ^e
Fuel briquets from brown coal do.	300	345	247	156 ^r	150 ^e
Gas:					
Manufactured, all types ^e million cubic meters	1,400	1,400	1,411 ³	1,442 ³	1,000
Natural, marketed do.	356	148	148	168 ^r	180
Petroleum: ^e					
Crude ⁴ thousand 42-gallon barrels	2,100	1,800	1,600	1,600	1,500
Refinery products ⁵ do.	54,000 ^r	55,000 ^r	52,000 ^r	58,000 ^r	52,000
Uranium:					
Mine output, U content	420	383	322	290	286
U ₃ O ₈ content ^e	495	452	380	342	337
Concentrate production, U content	409	358	291	261	243

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

¹Table includes data available through September 9, 2010.

²In addition to the commodities listed, ferrovandium, secondary copper, 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, which was reported as the following: 2005—306; 2006—259; 2007—240; 2008—236; 2009—217.

⁵Figures were estimated based on throughput reported in million metric tons, which was reported as the following: 2005—7.74; 2006—7.87; 2007—7.40; 2008—8.25; 2009—7.38.

TABLE 2
CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

(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 ^e
Do.		do.	Radotin	650 ^e
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 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		Severoceske doly a.s. (CEZ Group)	Nastup Tusimice Mine southwest of Chomutov and Bilina Mine in Bilina	23,000 ^e
Do.		Litvinovska uhelna a.s. (Czech Coal Group)	CSA Mine near Most	5,000 ^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
Do.		Dul Kohinor a.s. (Czech Coal Group)	Centrum Mine in Marianske Radcice	350 ^e
Do.		Sokolovska uhelna a.s.	Jiri and Druzba Mines at Sokolov	10,000 ^e
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.		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		Trinecke Zelezarny 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.		Trinecke Zelezarny 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 2009

(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 ^e
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 ^e

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

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