THE CZECH REPUBLIC

By Walter G. Steblez

The Czech Republic was an important Central European producer of heavy industrial goods manufactured by the country's toolmaking, machine building, and chemical industries. Steelmaking, the mining and processing of industrial minerals, and construction materials production continued to be of regional and domestic importance. In 1999, the growth of the country's gross domestic product declined by 0.8% compared with that of 1998 (Business Monitor International, 2001).

The Government of the Czech Republic continued the economic development policies needed to integrate the country into the European Union (EU). The country's membership in the World Bank, the International Monetary Fund, the Organization for Economic Cooperation and Development (OECD), and the World Trade Organization and its participation in the General Agreement on Tariffs and Trade were largely an outcome of the Czech Republic's full orientation to a Western European political system and market economy.

Three acts constitute the country's mining law and form the foundation of the Government's mining and other mineralrelated policies. They are Act No. 44/1988 Coll., on the Protection and Use of Mineral Resources (the Mining Act), as amended; the Czech National Council Act No. 61/1988 Coll., on Mining Activity, Explosives, and State Mining Administration (Authority/Sedenka), as amended; and the Czech National Council Act No. 62/1988 Coll., on Geological Works, as amended. The Mining Act classifies minerals into two categories---"reserved" and "unreserved." The reserved category refers to mineral deposits that, apart from market considerations, were determined to be necessary for the development of the national economy (Luks, 1997). Other provisions in the mining law address issues of licensing and Federal and regional compliance with environmental regulations during the exploration and exploitation of a mineral deposit and the reclamation of mined-out areas.

To meet the needs of a developing market economy, major changes in the Czech Republic's environmental policies were enacted in 1997. The new policy, which was officially formulated in the environmental law of 1997 (Act No. 125/1997), was based on environmental principles that were approved by the Government in 1995. Also, four of the six enabling provisions of the new law were formally adopted at the same time as the new law on January 1, 1998. The new environmental law focused on reducing the volume of waste, discreet collection of waste by category, and recycling. The law has adopted the main provisions of the Basel convention. The new catalog of wastes is compatible with the European Catalogue of Wastes of the EU. Substances on the Government's "red list" can be imported only with the approval of the Ministry of the Environment (Steblez, 2001).

Metals

The Czech Republic's metals sector produced a broad range of base metals and semimanufactures from imported primary raw materials (ores and concentrates) and secondary materials (scrap). Generally, the metals sector represented approximately 10% of the value of the country's industrial production. The iron and steel branch alone generated between 8% and 9% of the industrial output. Employment in the metals sector generally accounted for about 10% of the total industrial employment; employment in the iron and steel sector accounted for about 8% of the Czech Republic's industrial workforce. In recent years, material costs accounted for 60% of total production costs of the metals sector, and labor costs, about 12% (Ambroz, 1997).

Gold.—Although gold mining in some parts of the Czech Republic remained prospective, economic resources of most metals have been depleted. With the exception of gold-bearing and tin-tungsten ores, geologic reserves of metallic ores as of December 31, 1999, were "mostly subeconomic" (GEOFOND, 2000, p. 19).

In gold prospecting activities, TVX-Gold of Canada reduced the book value of its Kasperske Hory project to zero following a decision by the Government of the Czech Republic to revoke and not renew the licenses for the project. TVX indicated that it would consider legal action in the matter, especially in view of its continued interest in the property. Domestic and foreign environmental groups continued their lobbying efforts against the development of gold mining in the Sumava area (Mining Journal, 1999).

Iron and Steel.—The iron and steel branch generally has accounted for more than 75% of the sales of the country's metals sector, which comprised 12 enterprises that produced pig iron, crude steel, rolled materials, steel, and cast iron pipes that included closed welded pipe steel and various welded semimanufactures. The nonferrous metals branch, which comprised nine major enterprises, produced finished and semifinished commodities of nonalloyed and alloyed aluminum, copper, and lead. The nonferrous metals branch relied entirely on domestic and imported scrap and on imports of semimanufactured products as its raw materials base. Overall, scrap usually accounted for 40% to 50% of all new crude metal production. In 1998, the metals sector employed about 128,000 workers (Urban, 1998).

The Czech Republic had eight iron ore deposits, which were no longer worked because they were deemed to be uneconomic. All the raw materials consumed by the country's steel industry—agglomerate, iron ore and concentrate, and pellets were imported. The country's steel industry operated eight steel plants with a collective capacity to produce almost 11 million metric tons per year (Mt/yr) of steel. The main steel producers were Nova Hut sp (Ostrava), Zelezarny Vitkovice, Trinecke Zelezarny (Trinec), and Poldi United Steel Works. They accounted for about 85% of total production capacity.

Activities and issues during the 1998-99 period included a decision by the Nova Hut integrated steel mill to restructure its operations to work on the basis of EU standards. The company's estimated cost of restructuring and modernization was estimated to be \$650 million. The construction of a 3-Mt/yr minimill and the full application of continuous casting by yearend 1999 were major components of the company's modernization program. By mid-1998, about US\$250 million was invested in the minimill project. Phase 2, which was initiated in 1997 by ICF Kaiser International of the United States, included the construction of an equalizing furnace and hot-strip rolling mill. The new US\$55 million billet caster was designed with the capacity to produce 990,000 metric tons per vear (t/vr) of billet. Moreover, the planned completion of a third caster in 1999 would allow Nova Hut to close its ingot casting shop and blooming mill. The company's strategic program included increasing the proportion of its flat products production to 40% from 25% (Metal Bulletin, 1998a).

Pig iron production was terminated in 1998 at Vitcovice a.s. Ostrava. Three blast furnaces and a sinter plant were closed. Iron would be provided by Nova Hut. The overall modernization plan called for completion by 2001 at a cost of about US\$73 million (Metal Bulletin, 1999g).

Trinec announced plans to raise the output of special steels to 22,000 metric tons (t) in 1999 from 14,470 t produced in 1997. Of the 22,000 t, about 20,000 t would be designated stainless and tool steel compared with 12,700 t in 1997. Trinec management also announced plans to increase exports of rails (a major product). Germany, Egypt, Finland, and Eastern Europe have been important importers of Czech rails. Trinec's facilities, comprising billet and bloom casters, have a combined capacity of 2.25 Mt/yr (Metal Bulletin, 1998c).

Poldi I and Poldi II, which in the past formed the Poldi steelworks in Kladno, had been acquired by separate owners, Zelezarny Hradek and Trinec (owned by Moravia Steel a.s.), respectively. The two plants were sold following a bankruptcy in 1997, after which Poldi I was closed in 1999 by the owner. Poldi I was to continue to sell round and square bars, as well as some special steels from stocks; the enterprise, however, could not maintain economic viability. Poldi I's closure would have resulted in the layoff of between 200 and 300 workers. Zelezarny Hradek's management held talks with Scholz Edelstahl of Germany about the leasing of some of Poldi I's facilities, namely the forging and annealing shop that would be used to produce tool and high-speed steels. The German company was a subsidiary of the Scholz Group, which dealt in scrap (Metal Bulletin, 1999e). The negotiations were concluded with an agreement to lease Poldi I's plant to Scholz Edelstahl. The agreement appeared to have salvaged the 300 or so redundancies expected from the earlier closure (Metal Bulletin, 1999f).

In 1999, the Government of the Czech Republic announced plans to develop a denationalization and capacity reduction program for the country's steel industry. Upon completion, the program was to be referred to the European Commission in Brussels for approval, which would allow the Government of the Czech Republic to receive aid for restructuring the steel industry under the EU's Phare program. The study's first phase would examine and identify steel plants with the highest productivity with respect to raw steel and rolled product output. The production of these commodities could be concentrated at those facilities. Some of the program's targets for 2010 included the closure of 2 coke batteries, 2 sinter plants, 2 blast furnaces, 4 tandem open hearth furnaces, 1 conventional open heath furnace, 10 electric furnaces, and 17 rolling mills. The objective was to raise per-worker productivity to 400 t/yr from 160 t/yr. The total workforce would be reduced to 15,000 employees from 42,000 by 2010. The total cost of the program was estimated to be about US\$2.3 billion. This amount would cover modernization and reconstruction (55%), employment and social costs (20%), environmental costs (18%), and plant closures (7%). The funds would probably be obtained from the EU, the State, and the private sector (Metal Bulletin, 1999a).

At yearend, the Czech Government put a proposal for a consortium of Czech steel companies into abeyance owing to concerns of the International Finance Corporation (IFC) and unspecified western banks. The IFC and the banks had loaned Nova Hut about US\$250 million, which, according to a Czech Government spokesperson, precluded entry into a consortium arrangement without first consulting the creditors. The aims of the proposed consortium, which comprised Nova Hut, Trinec, and Zelezarny Vitkovice (85% of Czech steel-producing capacity), included "joint purchases of raw materials, energy, and services," the unification of marketing, and the adoption of common sales policies (Metal Bulletin, 1999c).

A number of foreign trade issues that pertained to steel arose during this period. In December 1998, the Czech steel federation Hutnictvi Zeleza made a preliminary investigation into possible steel dumping activities by Poland and Ukraine. The issue apparently centered on Czech imports of reinforcing bar and wire rod from Poland and heavy plate from Ukraine. The increase in exports to the Czech Republic from these areas followed on the heels of the collapse of the Asian market, which was no longer able to absorb many of the steel products previously imported from Eastern European producers (Metal Bulletin, 1998c). In 1999, Hutnictvi Zeleza also planned to fight, by legal means, quotas imposed by Hungary on imports of Czech Republic steel into Hungary. The quota provisions, which were imposed for a period of 4 years, require exports of steel by the Czech Republic to Hungary to be limited to 45,000 t/yr. In 1998, Czech exports of steel to Hungary amounted to about 100,000 t and, in the view of the Hungarian Steel Association, represented a threat to the Hungarian steel producers. The quotas, which were based on quarterly import licensing, focused primarily on long products and included restrictions on hot-rolled unalloyed bar, rebar, and wire in coil; hot-rolled sections; bright bar, etc. (Metal Bulletin, 1999b). In April, following discussions between the two Governments, Hungary reportedly agreed to raise the export quotas by 25%. In 1998, Hungary imported 160,000 t of steel, of which 42,500 t fell under the spectrum of the quota restrictions (Metal Bulletin, 1999d). This quota issue was symptomatic of the overcapacity

in Central Europe and Eastern Europe on the one hand and the shrinking of markets worldwide, on the other hand, especially with respect to the Far Eastern situation in 1998 and 1999.

Lead and Zinc.—Lead and zinc have not been mined in the Czech Republic for at least 6 years. The number of registered deposits declined to 17 in 1999 from 27 in 1995; none, however, were being exploited during this period (GEOFOND, 1999, p. 23-36). The primary source of domestic lead came from recycled batteries collected and processed by Kovohute Pribram, which was the Czech Republic's sole recycler of secondary lead. Production of secondary lead was expected to reach 29,000 t in 2000 compared with 24,000 t produced in 1999 (Metal Bulletin, 2000). According to Kovohute Pribram spokespersons, batteries generally have accounted for about 80% of the company's lead raw material supply. They also indicated that the purchase of scrap that contains precious metals will have risen by 100% in 2000 compared with that of 1999, although the actual quantity of the scrap was not revealed (GEOFOND, 1999, p. 23-36).

Mineral Fuels

The energy policy of the Czech Republic has promoted the following aims: to deregulate prices for energy; to denationalize, rationalize, and restructure the energy industry sector; to increase conservation, health and safety, and pollution control in the energy sector; to diversify electricity, natural gas, and petroleum supplies; and to increase the efficiency of domestic production of fossil fuels.

The Government would make efforts to harmonize the energy sector's standards with those of the EU. In part, this would reduce the Czech Republic's dependence on solid fuel (e.g., coal, wood) from 60% in 1996 to 50% by 2000 to 40% by 2005 (Lynch, 1999, p.1). The energy sector in the Czech Republic (especially heat- and electric-power-generating plants) has been the main source of industrial air pollution and accounted for about 82% of SO₂, 21% of NO_x, and 55% of total particulates released into the atmosphere.

Coal.—Hard, or bituminous, coal mainly occurs in the Upper Silesian Basin. Of the resources that pertain to this region, about 15% is in the Czech Republic, and the balance, in Poland. Bituminous coal, or phytokaustobiolite, as it is described in the Czech Republic's annual compendium, the Mineral Commodity Summaries of the Czech Republic, has a higher degree of coalification than lower rank coals. Some of the characteristics of Czech bituminous coal include a carbon content of more than 73.4%, less than 50% volatile matter, and a dry (ash free) calorific value that exceeds 24 megajoules per kilogram (MJ/kg) (GEOFOND, 1999, p. 58-89).

In addition to hard coal, the Czech Republic distinguishes two types of lower rank coal—brown coal and lignite. Brown coal is distinguished by having a lower level of coalification, specifically, a phytokaustobiolite with a fixed level of carbon of less than 73.5%, more than 50% volatiles, and a dry (ash free) calorific value of less than 24 MJ/kg. The vitrinite reflective boundary between hard/bituminous coal and brown coal is lower than 0.5% for brown coal. The boundary between brown coal and lignite, however, is not recognized because of the inclusion of high-volatile lignite in the brown coal category (GEOFOND, 1999, p. 63). The Czech Republic's brown coal

deposits are worked in the northwestern part of the country in the Bohemian brown coal basins. The major brown coal basins are found in the Krusne Hory Mountains region and cover an area of 1,900 square kilometers. Coal also is mined in the Cheb, the Sokolov, and the Zitava Basins (GEOFOND, 1999, p. 63).

According to GEOFOND (1999, p. 63), Czech standards for coal describe high-volatile lignite as a variety of brown coal that had undergone the least amount of coalification and that still has xylitic characteristics (fragments of wood, preserved tree trunks, etc.). Its dry calorific value is less than 17 MJ/kg. The boundary between brown coal and high-volatile lignite is not distinct. Lignite is consumed mainly by the electric-power-generating sector; it also is used for heating. The chief deposits occur in the Vienna basin and extend from Austria to Moravia.

The Government of the Czech Republic remained the principal source of financing for the coal industry. The main categories of funding were closure of mines, reclamation of lands affected by mining, and health and safety issues. State financing for all sectors of mining from 1993 through 1998 amounted to 18.56 million Czech koruny (CK) or US\$562,424, which accounted for about 80.4% of the total state financing of CK23.1 million. The only coal mine to have been fully privatized by yearend 1998 was OKD, a.s. - Kladno. Mine labor in the hard coal sector declined to 45,300 employees in 1998 from 55,000 in 1994 and in brown coal fell to 24,400 employees in 1998 from 32,700 in 1994 (Economic Commission for Europe, 1998).

Petroleum and Natural Gas.—According to the Mineral Commodity Summaries of the Czech Republic, the Czech Republic's oil- and gas-bearing/producing area is in the socalled Vienna-Moravia oil-bearing province. The deposits in this province are hosted in a large number of "individual oilbearing structures and producing horizons" to a depth of 2,800 meters (m). Sandstones of the middle and upper Badenian age are described as hosting the most productive oil deposits. Hrusky has been the largest deposit, but most of the oil at Hrusky has been extracted, and the structure now mainly serves as an underground gas storage facility. Another potential oilbearing area is in the Moravian region of the Carpathian foredeep, where exploration is currently being conducted. In this area, oil occurs in weathered crystalline Paleozoic rocks. The prevailing type of petroleum is a light, sulfur-free paraffin to paraffin-napthene oil. The Czech Republic's petroleum resources as of December 31, 1998, amounted to about 37.9 million metric tons (Mt), of which 11.4 Mt was categorized as economically proven; 13.5 Mt as economically probable; and 12.9 Mt, as subeconomic (GEOFOND, 1999, p. 67).

Major commercial activities in the petroleum sector involved Medusa Oil and Gas Limited, which was a subsidiary of Ramco Energy plc. Medusa conducted exploration work for oil and gas in the Czech Republic and drilled the Krumvir-2 discovery well in Medusa's Karlin license area, about 30 kilometers southeast of Brno, reaching the 3,600-m mark. The well reportedly began test producing 750 barrels per day of 30° gravity low-sulfur oil, and sustained output was expected to be achieved in March 1999 (Oil & Gas Journal, 1998). Medusa obtained 48% interest in the Karlin license area from Moravske Naftove Doly, a.s. Hodonin (MND), which was the Czech state monopoly responsible for petroleum exploration and production (Oil & Gas Journal, 1998).

References Cited

- Ambroz, Petr, 1997, The Czech steel industry: Czech Business and Trade, no. 8, p. 35-36.
- Business Monitor International, 2001, Emerging European monitor—Central Europe: Business Monitor International, January, v. 7, no. 1, p. 3.
- Economic Commission for Europe, 1998, Results of the restructuring of the Czech coal industry and the future role of coal for the national economy (transmitted by the Government of the Czech Republic): United Nations Economic and Social Council, ENERGY/GE.1/1998/7, July 16, 10 p.
- GEOFOND, 1999, Mineral commodity summaries of the Czech Republic: Ministry of the Environment of the Czech Republic, June, 153 p.
 —2000, Mineral commodity summaries of the Czech Republic: Ministry of
 - the Environment of the Czech Republic, June, 157p.
- Luks, Josef, 1997, Current mining law in the Czech Republic: Czech Business and Trade, no. 11, p. 35-36.
- Lynch, Richard, 1999, Fossil energy international—An energy overview of the Czech Republic: U.S. Department of Energy, December 3, 15 p.
- Metal Bulletin, 1998a, Czech mill aims to meet EU standards: Metal Bulletin, no. 8283, June 4, p. 22.
 - ——1998b, Czechs prepare dumping cases against Poland and Ukraine: Metal Bulletin, no. 8335, December 14, p. 22.
- ——1998c, Trinec plans to increase alloy steel production: Metal Bulletin, no. 8293, July 9, p. 20.

- ——1999b, Czech mills plan to fight Hungarian import quotas: Metal Bulletin, no. 8342, January 14, p. 17.
- 1999d, Hungary raises Czech import quota by 25%: Metal Bulletin, no. 8368, April 19, p. 22.
- ——1999e, Poldi stops production: Metal Bulletin, no. 8419, October 21, p. 35.

- 2000, Czech processor boosts production: Metal Bulletin, no. 8522, November 2, p. 10.
- Mining Journal, 1999, Czech licence problem: Mining Journal [London], v. 332, no. 8524, March 26, p. 209.
- Oil & Gas Journal, 1998, Czech Republic: Oil & Gas Journal, November 2, p. 98.
- Steblez, W.G., 2001, Czech Republic, in Mineral Industries of Europe and
- Central Eurasia: U.S. Geological Survey Minerals Yearbook, 1997, v. III, p. k1-k10.
- Urban, Zdenek, 1998, Metallurgy and metal processing in the Czech Republic: Czech Business and Trade, no. 1, p. 15-16.

TABLE 1 CZECH REPUBLIC: PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commodity		1005	1006	1007	1008	1000
METALS		1995	1990	1997	1998	1999
Aluminum secondary e/		48.000	45,000	45,000	45,000	40.000
Copper refined secondary of		20,000	20,000	20,000	20,000	20,000
Iron and steel:		20,000	20,000	20,000	20,000	20,000
Iron ore:						
Gross weight	thousand tons	36	32	28	26	23
	thousand tons	10.000	9.000 r/	8 000 r/	7 000 r/	6 000
Metal:		10,000	2,000 1/	0,000 1/	7,000 1/	0,000
 Pig iron	thousand tons	5 289	1 898	5 195	4 982	4 022
	do	3,207	4,000	3,175	1	4,022
Steel crude	do.	7 180	6 257	6.405	6 /08 r/	5 600
Steel, crude	do.	8 851	0,237	10.017	10 205	10,000 e/
Lead metal secondary e/	u0.	20,000	20,000	20,000	20,000	24,000
Uranium mine output U content		20,000	20,000	624	611	24,000
Zing metal secondary of		1 000	1 000	1 000	1 000	1 000
INDUSTRIAL MINE	DAIS	1,000	1,000	1,000	1,000	1,000
Coment hydraulie	thousand tons	1 875	5.015	1 977	4 604 */	4 400
Clavar	thousand tons	4,823	5,015	4,077	4,004 1/	4,400
Clays:	do	51	50	110	105	160
Keelin	do.	2 800	2 708	2 082	2 040	5 192
- Culture - Cult	UO.	2,800	2,798	2,982	5,049	5,185
Distancia	do.	915	/38	/59	1,030	636
		29,000	5,000	I/	r/ e/	e/
Diamond, synthetic e/	carats	5,000	5,000	5,000	5,000	5,000
Fertilizer, manufactured:		264.000	252 (00	250.000 /	247.000 /	250.000 /
Nitrogenous, N content		264,000	252,600	250,000 e/	247,000 r/	250,000 e/
Phosphatic, P2O5 content		14,000	415,500	400,000 e/	80,000 r/	100,000 e/
Potassic, K2O content		22,000	25,000	20,000 e/	20,000 e/	20,000 e/
Mixed		117,000	552,300	500,000 e/	100,000 r/	100,000 e/
Feldspar		183,000	211,000	243,000	266,000 r/	244,000
Gemstones, crude, pyrope-bearing rock		24,000	39,000	49,000	43,000	54,000
Graphite e/		27,000	30,000	25,000	28,000	22,000
Gypsum and anhydrite, crude		542,000	443,000	241,000	222,000	136,000
Lime, hydrated and quicklime	thousand tons	1,186	1,176	1,217	1,151 r/	1,100
Mica		3,803				
Nitrogen, N content of ammonia		254,000	304,100	251,000 r/	258,100 r/	222,500
Quartz		3,000	4,000	13,000	1,000	3,000
Salt e/		180,000	180,000	r/	r/	
Sand and gravel:		10.525	10.050	11 505	0.070	0 101
Common sand and gravel	thousand cubic meters	10,525	12,350	11,727	9,279	8,181
Foundry sand	thousand tons	964	1,079	769	815	717
Glass sand	do.	1,026	1,130	994	827	980
Stone:						
Basalt (for casting)		108,000	90,000	103,000	100,000 e/	100,000 e/
Dimension stone	thousand cubic meters	210,000	190,000	258,000	305,000	250,000
Limestone and other calcareous stones	thousand tons	10,092	10,610	11,304 r/	11,558 r/	11,703
Building stone	thousand cubic meters	9,021	9,891	10,845	9,528	9,442
Sulfur, byproducts, all sources e/		20,000	40,000	40,000	40,000	40,000
Sulfuric acid		340,000 e/	350,000 e/	333,000 r/	327,000 r/	350,000 e/
Wollastonite		800	800			
MINERAL FUELS AND RELAT	ED MATERIALS					
Coal:						
Bituminous	thousand tons	21,309	21,784	20,847	19,521	17,227
Brown and lignite	do.	58,773	60,441	58,142	51,953 r/	45,370
Coke	do.	4,945	4,836	2,916 r/	4,009 r/	3,340
Fuel briquets from brown coal	do.	616	600	600	325 r/	288
Gas:						
Manufactured, all types e/	million cubic meters	791	800	800	800	800
Natural, marketed 3/	do.	165	146	118	137	143
Petroleum:						
Crude:						
As reported	thousand tons	149	155	159	172	176
Converted	thousand 42-gallon barrels	1,010	1,052	1,080	1,167	1,197
Refinery products e/	do.	35,000	27,000	27,000	35,000	35,000

See footnotes at end of table.

e/ Estimated. r/ Revised. -- Zero.

1/ Estimated data are rounded to no more than three significant digits.

2/ Table includes data available through October 2000. In addition to the commodities listed, arsenic, dolomite, illite, sodium compunds, talc, and zeolite are produced, but information is inadequate to make reliable estimates of output levels.

3/ Includes gas produced from coal mines. Gross output of natural gas is not reported, but is believed to exceed reported marketed output by an inconsequential

amount.

TABLE 2 CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

			Annual
Commodity	Major operating companies	Location of main facilities 1/	capacity
Bentonite	Keramost a.s.	Most	150
Cement	Bohemia, Cizkovice, Hranice, Karlov Dvor, Lochkov,	Bohemia	3,500
	Pracovice, and Velary		
Do.	Bystre, Malomerice, Mokra, Ostrava-Kunice,	Moravia	2,000
	and Zahorie		
Clay, koalin	Mines in Karlovy vary area	West Bohemia	450
Do.	Mines in Plzen area	Central Bohemia	150
Coal:			
Bituminous	Mines in OKD coal basin	Ostrava-Karvina, north Moravia	22,100
Do.	Mines in KD coal basin	Kladno, central Bohemia	3,000
Brown	SHD administration	Most, northwest Bohemia	61,000
Do.	HDB administration	Sokolov, west Bohemia	17,000
Lignite	JLD administration	Hodonin, south Moravia	5,000
Copper, ore	Zlate Hory	North Moravia	300
Graphite	Grafit a.s.	Netolice	35
	Rudne doly Stare Mesto-F s.r.o.	Stare Mesto	
Kaolin	Zapadoceske Kaolinove a Keramicke Zavody a.s.	Horni Briza	190
Mica	GARMICA s.r.o.	Netolice	5
Lead-zinc, ore	Horni Benesov and Zlate Hory	do.	400
Lead, metal, secondary, refined	Kovohute Pribram	Pribram	26
Natural gas billion cubi	ic meters Gasfields around Hodonin	South Moravia	25
Petroleum:			
Crude	Oilfields around Hodonin	do.	140
Refinery	Kolin, Kralupy, Pardubice, and Zaluzi	Bohemia	NA
Steel, crude	Nova Hut s.p. (Ostrava)	Kunice-Ostrava	3,800
Do.	Zelezarny Vitkovice	Vitkovice-Ostrava	900
Do.	Trinecke Zelezarny (Trinecke Iron and Steel Works)	Trinec	3,000
Do.	Poldi United Steel Works	Kladno-Prague	1,700
Do.	Zelezarny Bila Cerkev	Hradek-Rokycany	300
Do.	Zelezarny Veseli	Veseli and Moravou	300
Do.	Zelezarny Chomutov s.p.	Chomutov	350
Do.	Bohumin Iron and Steel Works	Bohumin	400
Titanium dioxide	Precheza A.S	Precheza	25
Uranium	DIAMO s.p.	Straz pod Ralskem	2

NA Not available.

1/ Names and locations of mines and crude oil refineries are identical.