THE MINERAL INDUSTRIES OF

THE CZECH REPUBLIC, HUNGARY, POLAND, AND SLOVAKIA

By Walter G. Steblez

The Central European transitional economy countries of the Czech Republic, Hungary, Poland, and Slovakia represent one of the more economically dynamic regions in the field of former centrally planned economy countries of Europe and Central Eurasia. As founding members of the Central European Free Trade Agreement (CEFTA) (Bulgaria, Romania, and Slovenia joined in 1999), these countries have continued to implement policies designed to harmonize standards and trade with a view to integrating themselves fully into the European Union, as they already had done in the European security sphere through membership in the North Atlantic Treaty Organization. To accommodate new standards, the development of new commercial infrastructure in the region has warranted continued focus on the region's cement, industrial minerals, and steel industries. The trend of large-scale foreign investment in the cement and associated quarrying industries in the Central European region, which emerged during the 1990s, became more clearly discernible in the region's iron and steel sectors during 2000.

CZECH REPUBLIC

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 as well as of domestic importance.

In 2000, the country's economy showed improvement as the GDP increased by about 2.8% compared with that of 1999 (U.S. Central Intelligence Agency, 2001). Industrial production increased by 7.6% and comprised about 42% of the total value of the GDP. According to GEOFOND (2000, p. 17), which was the country's leading mineral information agency, the mining and processing sector's share of the GDP in 2000 declined to 1.5% from 3.7% in 1993.

The Government continued economic development policies whose aim has been to integrate the country into the EU. The country's membership in the World Bank for Reconstruction and Development, the International Monetary Fund, and the Organization for Economic Cooperation and Development (OECD) as well as the World Trade Organization and 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 constituent acts comprise the country's mining law, which forms the foundation of the Government's mining and other mineral-related policies—Act No. 44/1988 Coll. on 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 either "reserved" or "unreserved" categories. 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. On the basis of environmental principles that were approved by the Government in 1995, the new policy was officially formulated in the environmental law of 1997, Act No. 125/1997. 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 environmental law focused on reducing the volume of waste, discreet collection of waste by category, and recycling. The law has adopted the main provision in EU and OECD regulations as well as those of the Basle Convention. The new catalogue of wastes is compatible with the European Catalogue of Wastes of the EU.

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). The metals sector generally represented approximately 10% of the value of the country's industrial production during the later part of the 1990s. The iron and steel branch alone has generated between 8% and 9% of the industrial output. Employment in the metals sector accounted for about 10% of the total industrial employment; the iron and steel sector accounted for about 8% of the country's industrial workforce. In recent years, the iron and steel industry's material costs have constituted about 60% of total production costs of the metals sector, and labor costs have amounted to about 12% (Ambroz, 1997).

The iron and steel branch also 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,

and steel and cast iron pipes, which 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 has relied entirely on domestic and imported scrap and on imports of ore and concentrate and semimanufactured products as its raw materials base. Overall, scrap usually accounts for 40% to 50% of all new crude metal production (Urban, 1998).

Although gold mining in some parts of the Czech Republic remains prospective, economic resources of most metals have been depleted. According to GEOFOND (2001, p. 19), most of the country's metallic mineral deposits as of December 31, 2000, were not economic. Gold-bearing and tin-tungsten ores were among the exceptions.

The Czech Republic had eight deposits of iron ore that were no longer worked because they had been determined to be uneconomic. All the raw materials consumed by the country's steel industry, iron ore and concentrate and pellets and agglomerate were imported. In 2000, the Czech Republic imported about 7 Mt of iron ore and concentrate, mainly from Ukraine and Russia, that accounted for about 80% and 19%, respectively, of the Czech Republic's total imports. Net imports of pig iron amounted to 33,000 t, and net exports of iron and steel scrap amounted to more than 800,000 t (GEOFOND, 2001, p. 22). Manganese, which is of prime importance to the steel industry, was obtained entirely from imports of ores and concentrates (10,436 t, Ukraine, 63%), ferromanganese (17,569 t, Slovakia, 50%), and ferrosilicomanganese (22,300 t, Slovakia 53%) (GEOFOND, 2001, p. 26). The steel industry operated eight steel plants with a collective capacity to produce almost 11 Mt/yr of steel. The main steel producers were Nova Hut s.p. (Ostrava) (NH), Zelezarne Vitcovice, Trinecke Zelezarny (TZ), and Poldi United Steel Works and accounted for more than 95% of total production capacity.

The restructuring and privatization of the Czech Republic's entire iron and steel sector were among the major issues during 2000. The reorganization of the steel industry was based on a study commissioned by the Government, which was completed by a group headed by the Czech and Slovak Steel Federation in October 1999. The Government's plan to implement a first phase restructuring program included a 20% reduction of steel production capacity that would result in the closure of 17 furnaces, 10 of which were electric arc furnaces, and 17 rolling mills. The closure cost was estimated to be about $96.7 million, and the total cost of the restructuring plan would cost about $2 billion. The country's three large integrated steelworks, TZ, NH, and Vitcovice, which accounted for more than 90% of to the Czech Republic's total steel output, also had been pursuing individual development plans to be able to compete in the EU (Walawalker, 2000). In early 2000, the three major steel producers signed a letter of agreement to assist the Government with its restructuring aims for the steel industry (Metal Bulletin, 2000a).

In 2000, of the three integrated steel mills, only TZ was fully privatized. In prior years, the company's modernization efforts raised continuous casting operations to nearly 100% of the total output. A second modernization phase was planned to start in October and included a walking beam furnace (180 metric tons per hour) and a continuous roughing mill that would be supplied by Danieli of Italy (Walawalker, 2000). The new equipment and assemblies would allow TZ to increase billet size and coil weight. Major foreign investment in TZ centered on negotiations between TZ owner Moravia Steel and Commercial Metals Co. of the United States and involved the sale of about 11% of TZ stock (Metal Bulletin, 2000f).

The Czech Republic's largest steel mill, NH, continued work on increasing the output of flat-rolled products. The facility expansion project, which was started in 1997, was planned for completion by yearend with the construction of a 1 Mt/yr slab caster and a reversing hot-strip mill. The new facilities would raise flat-rolled production from 23% to 43% of total output. Continuous casting also was increased to 100% by yearend (Walawalker, 2000). The Government remained a major shareholder in NH with 49% of the stock and slightly more than 18% was owned by Credit Suisse of Boston. Investment interest in NH during the year was exemplified by Central European Consultants of the United Kingdom, which bought a 1% stake in the company that included an option to further acquire a 15% of the stock (Metal Bulletin, 2000d).

Vitcovice (more than 65%-owned by the Government's National Property Fund) began 2000 with debts that amounted to about $350 million; this and other financial difficulties resulted in plans to alter the company's structure. With the concurrence of the Vitcovice's creditors, the Government outlined a major restructuring program for the company and allowed debt repayment to be postponed for 1 year. The restructuring plan would divide Vitcovice into four divisions—steelmaking, energy, and two machine-building units. Other noncore businesses also would be sold off, thereby resulting in a workforce reduction of between 3,000 and 5,000 employees out of a total workforce of more than 11,000 employees (Metal Bulletin, 2000c; Walawalker, 2000).

In early 2000, the Poldi I steel plant in Kladno was acquired by Scholz-Stahl Centrum Ost SRO (a subsidiary of the Scholz AG group of Germany. Operations at Poldi I were restarted after a hiatus of several years. The initial output was limited to about 12,000 t/yr of high-speed and tool steels mainly for export. Expansion plans, however, would seek to raise output to about 24,000 t/yr. Poldi I operated two 7-t and one 25-t electric arc furnaces to process steel scrap supplied by Scholz AG MB (Metal Bulletin, 2000e; Walawalker, 2000, p. 47). The facilities at the Poldi II steel plant in nearby Drin continued to be leased by TZ, which operated a 100,000-t/yr rolling mill at the site. In the past, Poldi I and Poldi II formed the Poldi steelworks in Kladno.

The Czech Republic imported copper to meet all of its industrial needs. From 1998 to 2000, copper imports remained steady and averaged more than 14,300 t. In 2000, the Czech Republic's imports of refined copper and copper alloys amounted to 14,223 t; Poland, Austria, and Germany supplied 43%, 29.8%, and 24.9% of total imports, respectively. From 1996 to 2000, the Czech Republic apparently was a net exporter of copper scrap; exports ranged from about 24,600 t to 34,000 t (GEOFOND, 2001, p. 30-31).

Lead and zinc have not been mined in the Czech Republic for at least 6 years. The number of registered deposits declined to

11 in 2000 from 27 in 1995; none, however, were under exploitation during this period (GEOFOND, 2001, p. 35, 39). The primary source of domestic lead comes from recycled batteries collected and processed by the Czech Republic's sole recycler of secondary lead, Kovohute Pribram. Production of secondary lead in 2000 was expected to reach 29,000 t, compared with 24,000 t produced in 1999 (Metal Bulletin, 2000b). According to Kovohute Pribram spokespersons, batteries have accounted for 80% of the company's lead raw material supply. The spokespersons 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, 2000, p. 23-36). In 2000, Germany supplied about 72% of the 53,000 t of unwrought lead imported by the Czech Republic. Net imports of lead for consumption amounted to about 40,200 t. Similarly, imports of unwrought zinc in 2000 exceeded 27,700 t; this was an increase of about 30% compared with those of 1999. Poland and Germany, which were the major zinc exporters to the Czech Republic, accounted for about 58% and 12%, respectively, of the total zinc imports (GEOFOND, 2001, p. 35, 39).

The energy policy of the Czech Republic has promoted the following aims: the decontrol of prices for energy; the denationalization, rationalization, and restructuring of the energy industry sector; an increase in the level of conservation, health and safety, and pollution control in the energy sector; the diversification of electricity, natural gas, and petroleum supply; and the raising of the efficiency of domestic production of fossil fuels.

To help make its governmental and economic structures more compatible with those of the EU, the Government would proceed with harmonizing the country's energy sector's standards with those of the EU. In part, this would reduce the Czech Republic's dependence on such solid fuel as coal and wood from 60% in 1996 to 50% by 2000 and 40% by 2005 (Lynch, 1999, p. 1). The energy sector, especially heat- and electric-power-generating plants, has been the main source of industrial air pollution and has accounted for about 82% of the sulfur dioxide (SO_2), 21% of the nitrous oxide (NO_x), and 55% of total particulates released into the atmosphere. Hard or bituminous coal occurs mainly in the Upper Silesian Basin. Of the resources pertaining to this region, about 15% is in the Czech Republic; the balance of the resources is in Poland. Bituminous coal, or phytokaustobiolite as it is described in the annual 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 calorific (ash-free) value that exceeds 24 megajoules per kilogram (MJ/kg). As of December 31, 2000, the Czech Republic reported total resources of bituminous coal to have amounted to about 16.354 billion metric tons (Gt). Coal output in 2000 remained steady at just more than 17 Mt. Imports that amounted to 1.095 Mt were derived almost exclusively from Poland. About 6 Mt of bituminous coal was exported mainly to Austria, Germany, and Slovakia (GEOFOND, 2001, p. 62, 63).

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; that is, 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 owing to the inclusion of high-volatile lignite in the brown coal category (GEOFOND, 2001, p. 67). 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 Krusnehory Mountains region and cover an area of 1,900 square kilometers (km^2). Coal also is mined in the Cheb, the Sokolov, and the Zitava basins. Total resources of brown coal as of December 31, 2000, amounted to more than 9.652 Gt. Brown coal was used mostly as a fuel in the country's electric power industry; a minor proportion was consumed by the chemicals sector. In 2000, major foreign commerce in brown coal centered on exports of about 3 Mt; Germany (67%) and Slovakia (26%) were the major recipients (GEOFOND, 2001, p. 67, 69).

According to GEOFOND (2001, p. 71), Czech standards for coal describe high-volatile lignite as a variety of brown coal that has 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. There is no distinct boundary between brown coal and high-volatile lignite. Lignite is consumed mainly by the electric-power-generating sector; it also is used for heating. The chief deposits occur in the Vienna basin, which extends from Austria to Moravia. Total resources of lignite in the Czech Republic at the end of 2000 amounted to more than 1.029 Gt (GEOFOND, 2001, p. 71).

The Government of the Czech Republic remained the principal source of financing for the coal industry. The main categories of funding are closure of mines, reclamation of lands affected by mining, and health and safety issues. State financing for all branches of coal mining from 1990 to 2000 amounted to 25.4 billion Czech koruny (CZK) (US$1=CZK33) (GEOFOND, 2001, p. 62).

According to GEOFOND (2001, p. 75), the Czech Republic's oil- and gas-bearing/producing area is in the so-called Vienna-Moravia oil-bearing province. The deposits in this province are hosted in a large number of "individual oil-bearing structures and producing horizons..." to a depth of 2,800 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 serves mainly as an underground gas storage facility. Additionally, another oil-bearing area is in the Moravian region of the Carpathian foredeep, where exploration was being conducted. Petroleum in this region 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, 2000, amounted to about 37.5 Mt, of which about 11.1 Mt was categorized as economic proven; 13.5 Mt, as economic probable; and about 12.9 Mt, as subeconomic.

In 2000, the Czech Republic imported about 5.8 Mt of

petroleum, of which about 4.8 Mt was imported from Russia, and 500,000 t came from Kazakhstan. Total imports of petroleum from the CIS accounted for more than 90% of the country's import needs. Exports during the same period were about 111,000 t (GEOFOND, 2001, p. 76). Natural gas production declined by about 17% from 143 million cubic meters produced in 1999. In 2000, Russia supplied the Czech Republic with about 78% of more than 9.5 billion cubic meters of natural gas imports; about 21% was obtained from Norway (GEOFOND, 2001, p. 80).

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HUNGARY

Hungary produced modest amounts of fossil fuels and industrial minerals and relied heavily on imported mineral raw materials. In 2000, the imports of crude raw materials, which included minerals, increased by 13% compared with those of 1999, and those of mineral fuels and electric power, by 5%. Crude raw material exports rose by 16.2%, and those of mineral fuels and electric power, slightly (0.01%). On balance, however, the combined values of imports of raw materials and fuels exceeded those of exports by almost three times. Net imports of raw materials and fuels showed an increasing trend from 1998 to 2000—rising by 5% in 1999 and by about 27% in 2000 (Hungarian Central Statistical Office, 2000, p. 79). With respect to metals, bauxite mining and refining to alumina and manganese mining remained the only metal mining and processing operations in Hungary. Cement and coal production were the dominant components of the industrial minerals and mineral fuels branches of Hungary's mineral industry.

In 2000, Hungary's GDP increased by 5.5% compared with that of 1999, and the volume of industrial production rose by about 18%. The value of output in constant prices by the mining and processing sector, however, declined by 10% compared with that of 1999 (Hungarian Central Statistical Office, 2001, p. 134). The output of bauxite showed some recovery compared with shortfalls in 1999, with output increasing by about 12%. The production of crude steel exceeded the crude steel output level of 1999 by more than 3%. Cement production increased by more than 12%. Coal output, however, contracted by about 4% (table 3).

Energy consumption remained one of Hungary's main economic concerns because of the country's need to import a substantial share of its fuel requirements. In terms of value, imports of natural and manufactured gas in 2000 exceeded exports by 67 times; those of coal and coke, by almost 6.5 times; and those of petroleum and petroleum products, by 2.4 times (Hungarian Central Statistical Office, 2001, p. 86). Imports generally have constituted between 55% and 57% of total energy availability (measured on a terajoule basis).

Hungary classifies its coals into three categories—hard coal (bituminous), brown coal, and lignite; the latter two are subbituminous. Brown coal and lignite are mined, for the most part, to fuel the country's thermal electric power stations. Lignite is mined by open pit at the Bukkabrany and the Visonta mines; the output from these mines was used entirely at the Matra electric powerplant. The mines and the electric powerplant have been owned by RWE/EVS consortium of Germany since 1995 (Molnar, 1999, 2001).

Hungary's total resources of bauxite were estimated to be about 26 Mt, of which commercial reserves amounted to 16 Mt at an average grade of 50.4% Al_2O_3 and 7% SiO_2. In 2000, Bakonyi Bauxitbanya Kft., which constituted Hungary's bauxite mining industry, produced more than 1 Mt of bauxite at the Fenyofo I and the Halimba III underground mines and the Bicske and the Obarok open pits; the bauxite was refined at the Ajka alumina refinery.

Although Hungary no longer mined copper, past surveys of the deep-lying (900 to 1,100 m) Recsk copper ore body in the Matra mountains discovered between 172 and 175 Mt of copper ore at a grade of 1.12% copper and about 20 Mt of polymetallic ore at a grade of 4.22% lead and 0.92% zinc as well as smaller quantities of gold, molybdenum, and silver. Geologic investigations conducted by the Government determined the area of mineralization to be about 10 km^2. After years of failed effort to attract foreign investment, the exploration shaft and adit at the Recsk copper deposit, which was under care and maintenance, finally was closed, the equipment removed, and the facilities flooded in 1999 (Molnar, 2001). Exploration in the Recsk region, however, continued for gold because 35 Mt of gold-bearing enargite copper ore was delineated with a grade of 1.47 grams per metric ton (g/t) gold. Further exploration in the region was reported during 2000.

The major issue in Hungary's iron and steel sector centered on the viability of DAM-Diósgyöri Acélmüvek Rt (Diósgyör Steelworks Industrial & Trade Shareholding Co.), which was a producer of steel bars and section. DAM (owned by VSZ a.s. of Slovakia) faced bankruptcy and liquidation throughout most of 1999 (Metal Bulletin, 2000a) At yearend 2000, however, VSZ promoted a financial stabilization program for DAM partly through a consortium of Hungarian and foreign customers and by raising the efficiency of the steelworks (Marko, 1999).

In 2000, the viability of DAM remained a major issue in Hungary's steel industry. In early 2000, VSZ, which had

controlling interest in DAM, approved a plan to restart operations at the financially ailing DAM following a restructuring plan that would allow the steel producer to meet its financial obligations, especially those to electric power suppliers (Metal Bulletin, 2000c). In 1999, the plant was reported to be operating at less than 50% of capacity; this and mounting debt led VSZ to look for potential buyers. The pending acquisition of VSZ by USX Corp. of the United States in 2000 further complicated DAM's future (Metal Bulletin, 2000d).

Production bottlenecks in the early part of 2000 were reported in the steel industry as railroad workers went on strike in February. The impact of the rail strike was felt to a greater degree at Dunaferr Steelworks, which imported South African iron ore via Costanza in Romania to off-loading terminals on the Danube in Hungary (Metal Bulletin, 2000b).

Hungary produced a broad range of industrial minerals that included aggregates, bentonite, kaolin, and perlite. Such industrial minerals as construction aggregates and cement, continued to play an important role in Hungary's economy, especially in view of their role in the modernization process necessary for the country's infrastructure. Planned highway construction through 2008 would be an important element in this role.

For more extensive coverage of the mineral industry of Hungary see the 1996 and 1998 Minerals Yearbook, Mineral Industries of Europe and Central Eurasia, volume III.

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POLAND

Poland was endowed with significant mineral resources, which included bituminous coal, copper and lead and zinc ores, salt, silver, and sulfur. Poland's reserve bases of copper and sulfur represented about 6% and 9%, respectively, of world totals for these mineral commodities (Edelstein, 2001; Ober, 2001). Resources of coal, salt, and silver also were considered to be of world significance. An inventory of the country's mineral resources for 2000 indicated net gains in geologically documented resources mainly for construction-grade ceramic clays, glass sand, crushed stone, and gravel aggregates, as well as natural gas (table 8).

Poland was the second largest producer of copper in Europe and Central Eurasia in 2000 and remained among the top 10 world producers of copper in terms of mine output (Edelstein, 2001). Poland also continued to be among the world's major producers of silver and sulfur. In Central Eurasia and Europe, the country was a significant producer of lead and zinc and a leading producer of lime, nitrogen (in ammonia), and salt. According to the most recent available data (1997), Poland also accounted for about 3.6% of total world output of bituminous coal (Glowny Urzad Statystyczny, 2000, p. 668).

Poland's economy remained robust in 2000. The gross domestic product (GDP) (in constant prices) rose by about 4.0% compared with that of 1999, which was a slightly smaller increase than that achieved in 1999. The gross output of industry represented about 24% of the GDP, and that of the mining and quarrying sector, which included mineral fuels and processing, accounted for about 6%. Total sales for the year by the mining and quarrying sector (less coal mining) contracted by about 1.5% compared with those of 1999; sales by the coal lignite and peat mining industries during the same period contracted by about 3% (Glowny Urzad Statystyczny, 2001, p. 34, 122-123). The base-metals-producing sector registered about a 10% increase in sales compared with those of 1999, and sales by the industrial minerals sector showed gains of about 7%. Sales by the coke manufacturing and petroleum refining sectors grew by more than 23% compared with those of 1999 (Glowny Urzad Statystyczny, 2001, p. 123).

Poland's production of minerals in 2000 showed mixed results. Major production increases of 19.4% and 3.3% were noted for crude steel and refined copper, respectively. The output of byproduct gold and lead and zinc ore fell by about 25% and 11%, respectively. The output of other metals, such as aluminum and refined lead and zinc, declined. The production of industrial minerals, such as salt and sulfur, increased compared with that of 1999. The production of natural gas, peat, and crude petroleum and refinery products increased compared with that of 1998; coal production, however, fell by almost 6% (table 5).

Poland's trade returns for selected mineral commodities for 1999 (latest year for which data are available) showed a decline in the import of iron ore and concentrate. Imports of aluminum and steel, however, rose compared with those of 1998. Among industrial minerals and mineral fuels, imports of glass, mineral fertilizers, and petroleum increased (table 7). With the exception of steel and steel semimanufactures, exports of major metals rose in 1999. Exports of refined petroleum products for the year increased in contrast to coal and coke and semicoke, which declined. Cement exports fell significantly in 1999 compared with those of the preceding year (table 6).

Poland's mining and mineral-processing industry was extensive and appeared well positioned to respond to the country's rising needs for all forms of mineral raw materials, especially those consumed by the construction sector of the economy (table 9).

Efforts to restructure and privatize Poland's steel industry and steel trade issues continued to be among the leading mineral industry concerns during the year.

With respect to trade issues, the Ministry of the Economy announced plans to conduct an investigation into possible steel

dumping practices in Poland by a number of member states of the Commonwealth of Independent States (CIS). The main steel commodities at issue were hot-rolled coils and heavy plates. Exports to Poland by these countries allegedly were sufficiently large and priced sufficiently low (reportedly up to 30% lower than comparable domestic prices) to warrant an investigation (Metal Bulletin, 1999a).

The Government of Poland remained committed to privatizing fully the country's iron and steel industry. According to officials of Poland's Ministry of the Treasury, which oversees the denationalization of industry, the privatization of the steel industry should create important foreign investment opportunities that would make the industry more competitive (Metal Bulletin, 2000f).

Poland's largest flat rolled steel producer, Huta Sendzimira SA, was among the industry leaders poised for privatization. An improving Polish economy raised domestic demand for rolled steel, which allowed Huta Sendzimira to boost revenue significantly in 2000 (60% in the first quarter of 2000 compared with that of 1999) with the rate of finished steel output approaching the company's more than 2-million-metric-ton-per-year (Mt/yr) capacity (Metal Bulletin, 2000g). Huta Sendzimira's exports continued to grow with sales abroad and amounted to 8% of production in 1998, 10% in 1999, and more than 12% was expected for 2000. To increase efficiency, the company reported reaching an agreement with labor unions, which would allow a reduction of direct employment at the steel complex from 17,400 to 8,600 workers by yearend. Huta Sendzimira management planned to raise finished steel capacity to 2.8 Mt/yr from 2.2 Mt/yr and to implement a $350 million modernization program to improve product quality and the size of coil to 30 metric tons (t) from 11 t (Metal Bulletin, 2000e).

In October, the Treasury Ministry of Poland gave Huta Katowice S.A. (HK) sanction to proceed with privatization. This authorization was given during a shareholder's meeting that included representatives of the Ministry. This was expected to clear the way for two joint ventures to go forward. The first joint venture, HK Long Ltd., would be owned by Corus Group plc of the United Kingdom (31%), HK (30%), the European Bank for Reconstruction and Development (EBRD) (20%), and Polish investment banks (19%). HK Long would produce long products (rails, beams, etc.). The second joint venture HK Zowb would focus on the production of flat products. Initially, Danieli S.p.A. of Italy would acquire 20% of the shares with the balance to be controlled by HK. During the second phase or stage of privatization, Danieli would acquire an additional 20% of equity in HK Zowb. By yearend 2000, Danieli planned to construct a slab caster at HK Zowb, which would have an initial capacity to produce 1.3 Mt/yr and which would increase to 1.8 Mt/yr following the completion of the slab caster and hot-rolling mill aggregate. The construction of the hot strip mill would start during the second phase of privatization in the middle of 2001 (Metal Bulletin, 2000d).

In midyear, Huta "Lucchini-Warszawa" Sp. z.o.o. (LW), which produced special steels, announced the beginning of the enterprise's second phase of modernization. LW [owned by Italy's Lucchini Group (66% of equity)] initially would begin installing a vacuum degassing unit and modernizing the rolling mill. The modernization of the forge and the development of ingot casting for bearing steel production also was planned. Phase II of LW's modernization program was to be funded entirely by the enterprise's stockholders. About 70% of LW's output was sold on the domestic market; the major share of the balance was exported to European Union (EU) countries, mainly Germany and Italy (Metal Bulletin, 2000a).

In 2000, foreign commercial issues and activities in the iron and steel sector included concerns expressed by Polish steel producers about influxes of cheaper steels from the Czech Republic and the countries of the former Soviet Union. Talks between the Governments of the Czech Republic and Poland were held during the early part of the year under the auspices of the CEFTA to help resolve the trade issue (Metal Bulletin, 2000h, i). To facilitate exports of iron ore to Poland, LebGOK, which was the trading arm of Russia's mining and beneficiation complex Lebedinsky GOK, opened a sales office in Warsaw. Russia was an important supplier of iron ore to Poland (Metal Bulletin, 2000b).

A major trend in Poland's nonferrous metals sector was the denationalization program that encompassed the aluminum, copper, and zinc industries. In 1999, the Government of Poland planned to sell a 10% stake in the country's largest producer of copper, KGHM S.A. The Government's share of KGHM amounted to 52.13% of the stock; 15% was owned by KGHM's employees; and the balance was listed on the London and the Warsaw Stock Exchanges. Impexmetal SA (nonferrous and ferrous metals) controlled several subsidiaries that produced aluminum [44,000 metric tons per year (t/yr)], zinc (13,000 t/yr), and blister copper (2,400 t/yr). Poland's Ministry of State Treasury, which controlled about 26.5% of Impexmetal's shares, indicated plans to sell off a majority of its shares in Impexmetal (Metal Bulletin, 2000c).

All copper ore in Poland was mined by the KGHM copper mining, beneficiation, smelting, and refining complex in the Lubin area, which accounted for more than 3% of world copper production. The room and pillar mining method was used at the Lubin, the Rudna, and the Polkowice-Sieroszowice mines at depths that ranged from 600 to 1,200 meters (m) (about 1,900 to 3,700 feet). Chalcocite is the principal mineral, but smaller amounts of bornite and chalcopyrite also occur. The mineralization is mainly in the shale horizon but extends into the overlaying carbonate and underlaying sandstone layers. Ore reserves under exploitation, as of December 31, 2000, amounted to about 780 million metric tons (Mt) that contained 16.5 Mt of copper with ore grades that ranged from 1.37% (Lubin mine) to 2.58% (Polkowice-Sieroszowice mine). Two varieties of concentrate are produced—Rudna, which contains 28% copper, and Polkowice, which averages 25% copper. Total reserves amounted to about 2.3 billion metric tons that contains about 44 Mt of metal (Mining Journal, 1999).

The Rudna mine has the largest production capacity, which amounted to about 13 Mt/yr. The concentrator at Rudna processes Rudna ores as well as some ores from the Polkowice-Sieroszowice Mine; its capacity was rated to produce about 700,000 t/yr of concentrate. Output by the Polkowice-Sieroszowice mine and concentrator amounted to about 13 Mt/yr of ore and 450,000 t/yr of concentrate. The Lubin mine accounted for about 9 Mt/yr of ore to produce about 465,000 t/yr of concentrate (Ministry of Environmental Protection,

Natural Resources and Forestry, 2001). Major production increases of refined copper were achieved in 1999 and 2000, with output levels reaching 470,494 t and 486,002 t, respectively, compared with 446,837 t in 1998. In 2000, KGHM's wages increased by 12%, following negotiated agreements with the unions (Metal Bulletin, 2000k)

In late 1999, KGHM began to evaluate additional sources of copper ore in Zambia that could provide feedstock to the Mufulira smelting and refining complex as part of the company's effort to acquire additional copper mining and processing assets. The ore deposit that has been supplying the Mufulira complex was approaching depletion. Having completed due diligence work on Mufulira's assets in August, KGHM would pay $17 million within a 5-year period for the 60,000-t/yr smelting and refining complex should it decide to proceed with the deal (Metal Bulletin, 1999b). In other foreign developments, KGHM's copper mining operations in Congo (Kinshasa) at the Kimpe mine were to be terminated owing to losses incurred at the facility. KGHM's mining activity at Kimpe began in 1997; according to company spokespersons, losses through early 2000 amounted to about $40 million (Metal Bulletin, 2000k).

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SLOVAKIA

Slovakia continued to be a modest regional producer of a variety of minerals. Aluminum and steel production formed the dominant elements in the country's metals sector. The major industries in the metals sector involved the production of aluminum and steel. Steel production was based mostly on imported raw materials, and that of aluminum was based entirely on imported bauxite and alumina. Small quantities of copper, gold, lead, and zinc also were produced. Among industrial minerals, the country registered production of barite, clays, magnesite, and salt. Brown coal and lignite and minor quantities of gas and petroleum comprised Slovakia's production of mineral fuels (table 10).

The economy of Slovakia remained in transition to a full market economy system. The need to denationalize expeditiously the state's commercial assets and to reduce subsidies to the public sector often was tempered by policies promulgated to maintain social stability, which had contributed to the country's uneven economic performance. In 2000, Slovakia's GDP increased by 2.2% (constant prices) compared with that of 1999. Compared with negative growth of industrial production in 1999, industrial production in 2000 showed marked improvement with a growth rate of 9.3%, compared with that of 1999 (U.S. Central Intelligence Agency, 2001).

Slovalco was Slovakia's sole producer of primary aluminum. The enterprise, which was originally known as ZSNP, a.s., was put into full operation in 1953. Following the restructuring of the enterprise's assets in 1993, Slovalco became a subsidiary of ZSNP and was entirely involved in primary aluminum production. During the post-1993 period, Slovalco began a program of modernization and facility expansion that garnered investment capital from the EBRD and Hydro Aluminium AS of Norway. Hydro and EBRD acquired 14.5% and 10% of Slovalco's shares, respectively; the balance remained with ZSNP (Slovalco, 2000, p. 5-8). Completion of the modernization of the aluminum production process allowed the plant's environmental protection standards to be more compatible with those of the EU (European Bank for Reconstruction and Development, 1998, p. 1-5).

According to the latest available data, most of Slovalco's production goes for exports. Sales of finished aluminum during 2000 amounted to 141,562 t (5% increase compared with those of 1999), of which 85.6% was exported. Exports to the EU accounted for 61.7% of total exports of aluminum in 2000. The marketed product mix was billets, 69.8%; primary foundry alloys, 25.85%; wire rod, 3.66%; and liquid metal 0.69% (Slovalco, 2000, p. 9). In 2000, Slovalco invested approximately $3.9 million mainly for renovation and streamlining production processes and for health and safety improvements. Construction on facility expansion to raise production to 144,000 t/yr from 35,000 t/yr was to have begun in 2000.

Gold was mined from the Svetozár gold ore deposit at Banská Hodruša by Slovenská banská spol. s.r.o., which was the country's sole gold producer. Mined gold amounted to 306 kilograms, or about 16% less than that produced in 1999. Termination of mining at Banská Hodruša was expected in the near-term mainly because of depletion of resources (Balaz,

2001). Closure of the silver mining operations at Roznava also was reported with the subsequent flooding of the Striebvorna Mine.

In gold exploration and mine development activity, Argosy Minerals Inc. of Canada continued to outline new ore bodies in the Kremnica region. In 2000, work focused on as-yet unmined areas about 10 kilometers south of Kremnica; data show clay and silica alterations within volcanic rocks that overlie the Kremnica ore horizon. To explore and develop this area further, Argosy reported seeking a joint-venture partner (Argosy Minerals Inc., 2001). Previous exploration work in the Kremnica region yielded estimates of more than 958,000 ounces (29.8 t) of inferred reserves of gold and more than 7 million ounces (218 t) of silver at a 1.0-g/t cut-off grade for gold (Argosy Minerals Inc., 1999).

The completion of negotiations to purchase VSZ a.s. by U.S. steel producer USX, which has received the approval of the Government of the Slovak Republic, was expected in October. The Government followed up its approval by raising its stake in VSZ to 53%; this would give it free reign to sell the steel plant to USX. USX would acquire 100% of the steelmaking part of the operation; the nonsteel assets could remain under the VSZ management (Metal Bulletin, 2000a, b). The acquisition of VSZ by USX would increase the production capacity of VSZ by 3.4 Mt/yr. USX's modernization plan for VSZ included a first phase with an investment that was to amount to $700 million. The initial phase was to include the modernization of the tin mill with the installation of a 200,000-t/yr tinning line and a continuous annealing plant and temper mill. Additionally, a vacuum degassing unit was to be installed, a 600,000-t/yr push-pull pickling line, and a 300,000-t/yr hot-dipped galvanizing line. The acquisition of VSZ would allow the direct participation by USX in the European market for the first time in about 10 years (Paxon, 2000).

VSZ's nonsteelmaking assets in the industrial minerals sector that were sold to foreign investors during the year included the limestone and dolomite quarrying subsidiaries, VSZ Keramina (100% of stock) and VSZ Dolomit (78% of stock), respectively, which were acquired by Carmeuse SA of Belgium for $29 million (Building Bulletin, 2000). Other developments in the industrial minerals sector included reprieve for the Komag magnesite mining operations in Kosice, which has been reported to be at the point of closure in 1999. Komag's operations at Kosice were acquired by Slovakia's leading producer of magnesite SMZ a.s. Jeslava. Komag's refractory kilns were brought back on-line to continue processing magnesite for SMZ. The Kosice Mines were not reopened during the year and remained on a care-and-maintenance basis. Slovakia's mine output of magnesite increased by about 9% in 1999 compared with that of 1998. Also, development of the talc deposit at Gemerska Poloma was undertaken by Rozmin Ltd. (Balaz, 2001).

In the mineral fuels sector, production declines of 7%, 5%, and 3% were noted for natural gas, petroleum and condensate, and coal, respectively, which were attributed partly to the output shortfalls at the Velky Kris coal mine and the closure of the Ptruska oil and gas well (Balaz, 2001).

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

(Metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Metals:						
Aluminum, secondary e/		45,000	45,000	45,000	40,000	40,000
Copper, refined, secondary e/		20,000	20,000	20,000	23,037 r/ 4/	20,000
Gold, metal	kilograms	--	--	--	3,207	3,000 e/
Iron and steel:						
Iron ore:						
Gross weight	thousand tons	32	28	26	23	21
Fe content e/		9,000	8,000	7,000	6,000	6,000
Metal:						
Pig iron	thousand tons	4,898	5,195	4,982	4,022	4,621
Ferroalloys, totals electric furnace e/	do.	1	1	1	1	1
Steel, crude	do.	6,257	6,495	6,498	5,616 r/	6,216
Semimanufactures	do.	9,368	10,017	10,205	10,207 r/	11,637
Lead, metal, secondary e/		20,000	20,000	20,000	29,280 r/ 4/	30,000
Silver		--	--	--	24	25 e/
Uranium, mine output, U content		589	624	611	605	498
Zinc, metal, secondary e/		1,000	1,000	1,000	145 r/ 4/	150
Industrial minerals:						
Cement, hydralic	thousand tons	5,015	4,877	4,604	4,241 r/	4,093
Clays:						
Bentonite	do.	59	110	125	160	280
Kaolin	do.	2,798	2,982	3,049	5,183	5,573
Other	do.	738	759	1,030	1,070 r/	1,120
Diamond, synthetic e/	carats	5,000	5,000	5,000	5,000	5,000
Diatomire		35,000	42,000 r/	35,000 r/	37,000 r/	34,000
Fertilizer, manufactured:						
Nitrogenous, N content		252,600	250,000 e/	247,000	220,000 r/	257,000
Phosphatic, P_2O_5 content		415,500	400,000 e/	80,000	100,000 e/	100,000 e/
Potassic, K_2O content e/		25,000 4/	20,000	20,000	20,000	20,000
Mixed		552,300	500,000 e/	100,000	77,000 r/	75,000
Feldspar		211,000	243,000	266,000	244,000	337,000
Gemstones, crude, pyrope-bearing rock		39,000	49,000	43,000	54,000	62,000
Graphite		30,000 r/	25,000	28,000	22,000	23,000
Gypsum and anhydrite, crude		443,000	241,000	222,000	136,000	82,000
Lime, hydrated and quicklime	thousand tons	1,176	1,217	1,151	1,142 r/	1,202
Nitrogen, N content of ammonia		304,100	251,000	258,100	222,500	250,000
Quartz		4,000	13,000	1,000	3,000	--
Salt e/		180,000	--	--	--	-- 4/
Sand and gravel:						
Common sand and gravel	thousand cubic meters	12,350	11,727	9,279	12,781 r/	12,640
Foundry sand	thousand tons	1,079	769	815	717	829
Glass sand	do.	1,130	994	827	980	985
Stone:						
Basalt (for casting)		90,000	103,000	96,000 r/	89,000 r/	14,000
Dimension stone	thousand cubic meters	190,000	258,000	305,000	300,000 r/	320,000
Limestone and calcareous stones	thousand tons	10,610	11,304	11,558	11,703	11,808
Building stone	thousand cubic meters	9,891	10,845	9,528	10,292 r/	10,111
Sulfur, byproducts, all sources e/		40,000	40,000	40,000	40,000	40,000
Sulfuric acid		350,000 e/	333,000	327,000	350,000 e/	350,000 e/
Wollastonite		800	--	--	--	--
Mineral fuels and related materials:						
Coal:						
Bituminus	thousand tons	21,784	20,847	19,521	17,227	17,028
Brown and lignite	do.	60,441	58,142	51,953	45,370	51,063
Coke	do.	4,836	2,916	4,009	3,340	3,411
Fuel briquets from brown coal	do.	600	600	325	288	253
Gas:						
Manufactured, all types e/	million cubic meters	800	800	800	800	800
Natural, marketed 5/	do.	146	118	137	143	118

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Mineral fuels and related materials--Continued:						
Petroleum:						
Crude:						
As reported	thousand tons	155	159	172	176	168
Converted	thousand 42-gallon barrels	1,052	1,080	1,167	1,197	1,142
Refinery products e/	do.	27,000	27,000	35,000	35,000	35,000

e/ Estimated. r/ Revised. -- Zero.
1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.
2/ Table includes available data through November 2001.
3/ In addition to the commodities listed, arsenic, dolomite, illite, sodium compounds, talc, and zeolites are produced, but available information is inadequate to make reliable estimates of output levels.
4/ Reported figure.
5/ Includes gas produced from coal mines. Gross output of natural gas is not reported but is believed to exceed reported market output by an inconsequential amount.

TABLE 2
CZECH REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/	Major operating companies	Location of main facilities	Annual capacity
Cement	Bohemia, Cizkovice, Hranice, Karlov Dvor, Lochkov, Pracovice, and Velary	Bohemia	3,500
Do.	Bystre, Malomerice, Mokra, Ostrava-Kunice, and Zahorie	Moravia	2,000
Clays:			
Bentonite	Keramost a.s.	Most	150
Kaolin	Mines in Karlovy vary area	West Bohemia	450
Do.	Mines in Plzen area	Central Bohemia	150
Do.	Zapadoceske Koalinove a Keramicke Zavody a.s.	Horni Briza	190
Coal:			
Bituminous	Mines in OKD coal basin	Ostrava-Karvina, north Moravia	22,100
Do.	Mines in KD coal basin	Kldano, 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	
Lead, metal, secondary, refined	Kovohute Pribram	Pribram	26
Lead-zinc, ore	Horni Benesov and Zlate Hory	Netolice	400
Mica	GARMICA s.r.o.	do.	5
Natural gas million cubic meters	Gasfields around Hodonin	South Moravia	25,000
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 Vikovice	Vikovice-Ostrava	900
Do.	Trinecke Zelezany (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 oxide	Precheza a.s.	Precheza	25
Uranium	DIAMO s.p.	Straz pod Ralsken	2

NA Not available.
1/ Table includes data and information available through November 2001.
2/ Names and locations of main facilities, mines, and oil refineries are identical.

TABLE 3
HUNGARY: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Metals:						
Aluminum:						
Gross weight:						
Bauxite	thousand tons	1,056	743	909	935 r/	1,046
Alumina, calcined basis	do.	208	76	138	295	300
Metal:						
Primary		30,000	35,000	35,000	34,000 r/	35,000
Secondary		63,808	63,190	64,000	54,000 r/	55,000
Total		93,808	98,190	99,000	88,000 r/	90,000
Copper, metal, refined including secondary e/		11,000	12,000 4/	12,000	12,000	12,000
Gallium, mine output, metal content	kilograms	5,000	--	--	--	--
Iron and steel, metal:						
Pig iron	thousand tons	1,548	1,190	1,258	1,309	1,340
Ferroalloys e/ 5/		8,000	8,000	8,000	8,000	8,000
Steel:						
Crude:	thousand tons	1,969	1,829	1,940	1,813	1,871
Semimanufactures, rolled only	do.	2,133	2,229	2,346	1,954	1,900 e/
Manganese ore:						
Run of mine:						
Gross weight		65,000	57,000	34,000	41,000 r/	40,000
Mn content e/		15,700	14,000	8,900	11,000 r/	10,000
Concentrate:						
Gross weight		33,813	15,291	15,000 e/	15,000 e/	15,000 e/
Mn content e/		11,000	5,000	5,000	5,000	5,000
Uranium, U_3O_8 content		250	200	100	--	--
Industrial minerals:						
Cement, hydralic	thousand tons	2,747	2,811	2,999	2,978	3,350
Clays:						
Bentonite:						
Raw		15,376	14,848	20,122	9,301 r/	4,818
Processed e/		9,000	9,000	12,000	6,000 r/	2,000
Kaolin, raw and washed		9,854	10,000	10,000 e/	9,000	9,000 e/
Gypsum and anhydrite		190,000 e/	150,000 e/	135,000	222,000 r/	200,000
Lime, calcined	thousand tons	468	498	500 e/	500 e/	500 e/
Nitrogen, N content of ammonia e/	do.	250	250	250	250	250
Perlite		110,000	120,000	130,000	148,000	150,000 e/
Refractory materials, n.e.s.: e/						
Chamotte products	thousand tons	20	20	20	20	20
Chrome magnesite products	do.	5	5	5	5	5
Sand and gravel:						
Gravel		11,000 e/	10,000 e/	8,160	10,297 r/	10,000 e/
Sand:						
Common	thousand cubic meters	275	284	250 e/	250 e/	300 e/
Foundry		9,386	72,537	172,300 r/	175,000	173,000
Glass		324,655	327,569	241,434	490,400	500,000
Stone:						
Dimension, all types e/	thousand tons	5,000	5,000	5,000	5,000	5,000
Dolomite	do.	582	1,440	1,772	2,140 r/	2,000 e/
Limestone	do.	4,949	4,941	4,802	5,010 r/	5,000 e/
Sulfus, byproducts, all sources e/		28,000	30,000	30,000	30,000	30,000
Sulfuric acid		89,712	84,463	85,000 e/	80,000 e/	80,000 e/
Talc e/		1,200	500 4/	500	500	500
Mineral fuels and related materials:						
Coal:						
Bituminous	thousand tons	962	924	877	738	725
Brown	do.	6,538	6,552	6,008	6,008	5,207
Lignite	do.	7,575	8,089	7,610	7,696 r/	7,873
Total	do.	15,075	15,565	14,495	14,442 r/	13,805
Coke, metallurgical e/		650	650	650	650	650
Fuel briquets	thousand tons	323	214	250	250 e/	200
Gas, natural, marketed	million cubic meters	4,756	4,513	4,300	3,100	3,000
Peat, agricultural use e/	thousand tons	45 4/	50	50	50	50

See footnotes at end of table.

TABLE 3--Continued
HUNGARY: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Mineral fuels and related materials--Continued:						
Petroleum:						
Crude:						
As reported	thousand tons	1,477	1,355	1,258	1,243	1,136
Converted e/	thousand 42-gallon barrels	9,800	9,100	8,400	8,400	7,500
Refinery products e/ 6/	do.	40,000	40,000	40,000	40,000	40,000

e/ Estimated. r/ Revised. -- Zero.
1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.
2/ Table includes available data through November 2001.
3/ In addition to the commodities listed, diatomite and a variety of other crude construction materials, such as common clays, are produced, but available information is inadequate to make reliable estimates of output levels.
4/ Reported figure.
5/ Hungary is believed to produce some blast furnace ferromanganese.
6/ Excludes refinery fuel and losses.

TABLE 4
HUNGARY: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Hungarian Aluminum Industrial Corp. (HUNGALU)	Ajka Timfoldgyar plant, about 120 kilometers southwest of Budapest, near Lake Balaton	400
Do.	do.	Almasfuzito Timfoldgyar plant near the Czech Republic border, 63 kilometers northwest of Budapest	240
Do.	do.	Moson-Magyarovar plant, in northwestern Hungary about 12 kilometers from Austrian and Czech borders	30
Aluminum, primary	do.	Inota plant, near Varpalota, 75 kilometers southwest of Budapest	46
Bauxite	HUNGALU: Bakony Mining Enterprise	Bakony District extending roughly 100 kilometers northwest along Lake Balaton	1,500
Cement	Belpafatvalvi Cement es Meszipari Rt. [Principal investors: Heidelberger and Schwenk (Germany) and Hungarian Group)]	Belpatfalva, near Miskolc, 125 kilometers northeast of Budapest	1,100
Do.	Beremend Cement es Meszipari Rt. [Principal investors: Heidelberger and Schwenk (Germany) (100%)]	Beremend, 45 kilometers south of Pecs	1,090
Do.	Dunai Cement es Meszmu Kft. [Principal investors: Heidelberger and Schwenk (Germany) (100%)]	Vac, 50 kilometers north of Budapest	1,200
Do.	Hejocsabai Cement es Meszipari Rt. [Principal investors: Holderbank (Germany) and Hungarian Group]	Hejoscaba, 150 kilometers northeast of Budapest	1,450
Do.	Labatlani Cementipari Kft. [Principal investor: Holderbank (Germany) (100%)]	Labatlan, 20 kilometers north of Tatabanya	550
Clays	Agyag-Asvany Kft. [Principal investor: Noran Resources plc (Ireland)]	Felsopeteney, one underground and two open pit mines and a 5,000-metric-ton-per-year processing plant. Products include ball clay, kaolin, and refractory clay	35
Coal:			
Bituminous and lignite	Magyar Szenbanyaszati Troszt (MSZT) (Hungarian Coal Mining Trust)	Tatbanya and Oroszlany coal mining region, 45 kilometers west of Budapest	8,900
Do.	do.	Mecsek coal mining region, near Pecs and Komlo, north of the Yugoslav border	3,100
Do.	do.	Borsod coal mining region, 130 kilometers northeast of Budapest	5,200
Lignite	do.	Thorez opencast mine at Visonta, 80 kilometers northeast of Budapest	7,000
Manganese	Orszagos Rec-es Asvanybanyak (National Ore and Mineral Mines)	Urkut manganese ore mines, 120 kilometers southwest of Budapest	160

See footnotes at end of table.

TABLE 4--Continued
HUNGARY: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity	Major operating companies	Location of main facilities	Annual capacity
Natural gas million cubic feet	Hungarian Oil and Gas Co. (MOL)	Szeged and Algyo gasfields, southern Hungary	152,000
Do.	do.	Hajduszoboszo gasfields, 180 kilometers east of Budapest	50
Do.	do.	Smaller gasfields: Szank, Kardoskut, Bekes, Berefurdo, and others	39
Perlite	Perlit 92 Kft. [Principal investors: Noran Resources plc (Ireland) and Hungarian Group]	Palhaza, northeastern Hungary; open pit mine and processing plant	150
Petroleum:			
Crude thousand barrels	Hungarian Oil and Gas Co. (MOL)	Szeged-Algyo field, near Romanian-Yugoslav border; 50% of total capacity	7,000
Refined	Subsidiaries of MOL:		
Do. do.	Danube Petroleum Refining Co.	Szazhalombatta	55,000
Do. do.	Tisza Petroleum Refining Co.	Leninavaros	22,000
Do. do.	Zala Petroleum Refining Co.	Zalaegerszeg	4,000
Silica	Uveg-Asvany Kft. [Principal investors: Noran Resources plc (Ireland) and Hungarian Group]	Mine and plant at Fehevaresugo	660
Steel	Dunaferr Dunai Vasmu Rt.	60 kilometers south of Budapest	1,400
Do.	OAM-Ozdi Acelmuvek Kft.	120 kilometers northeast of Budapest	360
Do.	DAM-Diosgyori Acelmuvek es Kereskedelmi Kft.	Diosgyoer, 145 kilometers northeast of Budapest	850

1/ Table includes data and information available through November 2001.

TABLE 5
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Metals:						
Aluminum, metal, primary	metric tons	51,900	53,614	54,168	50,974	46,941
Cadmium:						
Meta, primary	do.	--	22	-- r/	-- r/	--
Oxide	do.	31	62	61	27 r/	30 e/
Copper:						
Ore:						
Gross weight	do.	27,427	21,165	27,594	28,395	28,503
Cu content	do.	472,600	464,600	490,900	523,120	525,000 e/
Concentrate:						
Gross weight	do.	1,650	1,600	1,750	1,900 e/	1,900 e/
Cu content	do.	421,900	414,800	436,200	464,000	465,000 e/
Metal:						
Smelter:						
Primary	do.	410,000 r/	415,500	422,243	490,384 r/	507,846
Secondary e/	do.	4,800	15,000	10,000	9,000 r/ 4/	10,000
Total	do.	414,800 r/	430,500 r/	432,243 r/	499,384 r/	517,846
Refined, electrolytically, primary and secondary	do.	424,700	440,600	446,837	470,494	486,002
Gold, metal, smelter	kilograms	598	435	409	489 r/	367
Iron and steel:						
Pig iron:						
For foundry use		219	263	288	197 r/	200 e/
For steel production		6,321	7,032	5,841	5,036 r/	6,292
Total		6,540	7,295	6,129	5,233 r/	6,492
Ferroalloys:						
Ferromanganese, from blast furnace	metric tons	59,900	47,500	50,152	100 r/	50,000
From electric furnace:						
Ferrochromium	do.	3,785	6,200	4,200	-- r/	--
Ferrosilicomanganese	do.	25,000	20,000	15,100	10,000 e/	15,000 e/
Ferrosilicon	do.	71,800	77,300	75,000	62,481 r/	65,000 e/
Other electric furnace alloys	do.	5,800	8,500	13,300	2,700 r/	5,000 e/
Total	do.	106,385	112,000	107,600	75,181 r/	85,000 e/

See footnotes at end of table.

TABLE 5--Continued
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Metals--Continued:						
Iron and steel--Continued:						
Steel, crude:						
From open hearth furnaces		1,118	1,057	494	378	500 e/
From oxygen converters		6,757	7,531	6,223	5,452	6,496
From electric furnaces		2,554	2,994	3,197	3,022	3,500 e/
Other		3	2	1	1	2 e/
Total		10,432	11,584	9,915	8,853	10,498
Semimanufactures:						
Hot rolled		8,532	9,296	7,987	6,991	7,530
Cold rolled		1,788	1,982	1,764	2,194	2,000 e/
Pipe		532	538	500	484	500 e/
Lead:						
Pb-Zn ore, gross weight		5,034	4,938	5,052	5,068	4,500
Mine output:						
Pb content of Pb-Zn ore	metric tons	74,900	68,800	73,814	81,849	65,000 e/
Pb content of Cu ore	do.	38,600	42,600	42,600	35,000 r/	35,000 e/
Total	do.	113,500	111,400	116,414	116,849 r/	100,000 e/
Concentrate, gross weight	do.	88,700	84,600	90,400	104,000 e/	80,000 e/
Pb content	do.	59,800	55,600	59,533	68,358	55,000 e/
Metal:						
Smelter:						
Primary	do.	26,400	29,600	28,700	31,000 r/	25,000 e/
Secondary	do.	43,000	43,700	50,500	50,000 e/	30,000 e/
Total	do.	69,400	73,300	79,200	81,000 r/	55,000 e/
Refined	do.	66,000	64,800	64,300	63,895	45,412
Platinum-group metals, average content of slimes: e/ 5/						
Palladium	kilograms	18	12	12	12	12
Platinum	do.	30	20	20	21	21
Selenium	tons	73	76	67	67 r/	70 e/
Silver, mine output, Ag content, recoverable	do.	935	1,038	1,108	1,100	1,144
Zinc:						
Zn content:						
Mine output	metric tons	186,500	182,900	182,349	185,689	170,000 e/
Concentrate output	do.	159,000	158,300	157,874	160,082	155,000 e/
Metal, smelter, primary and secondary	do.	165,000	172,919	178,016	177,804	161,000
Industrial minerals:						
Barite:						
Crude	do.	21,700	3,400	--	--	--
Beneficiated	do.	6,200	600	--	--	--
Cement:						
Klinker for cement		11,756	12,739	11,974	11,678 r/	12,000 e/
Hydralic cement		13,959	15,003	14,970	15,555 r/	14,810
Portland cement		12,668	13,824	13,934	14,310 r/	14,000 e/
Clays:						
Bentonite	metric tons	1,800	--	24,000	96,000	--
Fuller's earth	do.	6,200	6,100	5,400	5,000 r/	5,000 e/
Fire clay		248	199	175	140	153
Kaolin:						
Crude		281	262	270	300	300 e/
Beneficiated		72	84	82	89	99
Diamond, synthetic	thousand carats	206	35	7	-- r/	--
Diatomite		1,700	1,200	1,531	1,200 r/	1,500 e/
Feldspar:						
Run oif mine	metric tons	64,000	74,000	26,500	9,000 r/	10,000 e/
Beneficiated	do.	58,300	75,700	72,900	70,000	70,000 e/
Gypsum and anhydrite, crude 6/		1,028	1,035	1,029	1,163	1,284
Lime, hydrated and quicklime		2,461	2,516	2,406	2,299	2,300 e/
Magnesite:						
Ore, crude		21,000	30,000	38,300	54,800 r/	50,000 e/
Concentrate		19,300	6,403	5,745	--	--
Calcined	metric tons	800	400	--	-- e/	-- e/
Nitrogen, N content of ammonia		1,713	1,740	1,299	1,151	1,200 e/

See footnotes at end of table.

TABLE 5--Continued
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Industrial minerals--Continued:						
Salt:						
Rock		923	791	748	923	831
Other		3,240	3,188	2,536	2,488	3,476
Total		4,163	3,979	3,284	3,411	4,307
Sand, excluding glass sand:						
Foundry sand		1,067	1,035	979	905	900 e/
Filling sand		17,510	14,155	13,695	11,352	11,000 e/
Lime-sand brick production sand	thousand cubic meters	1,086	799	728	673 r/	700 e/
Silica:						
Quartz and quartz crystal	metric tons	55,200	77,600	26,883	9,326	10,000 e/
Quartz, refractory	do.	294,000	205,000	204,000	172,000	175,000 e/
Quartz schist	do.	6,500	6,518	3,100	--	--
Glass sand		1,111	1,124	1,375	1,418	1,400 e/
Glass:						
Construction, flat		322	426	523	500 e/	500 e/
Technical		52	52	65	64	60 e/
Commercia		67	70	74	79	70 e/
Packing		811	873	918	928	70 e/
Sodium compounds, n.e.s.:						
Carbonate (soda ash), 98%		893	933	983	910	1,018
Caustic soda (96% NaOH)		705	718	807	737	394
Stone:						
Dolomite, mine output		5,345	5,781	5,679	1,861	2,204
Limestone, for lime production		12,764	13,136	11,950	12,373 r/	12,000 e/
Limestone, for nonlime end use		26,748	28,201	28,364	25,109 r/	29,801
Crushed and dimension stone, mine output		18,180	20,618	23,113	23,877 r/	23,000 e/
Sulfur:						
Native, frasch		1,745	1,673	1,348	1,175	1,369
Byproduct:						
From metallurgy		200 e/	256	260	278 r/	280 e/
From petroleum		30 e/	44	57	74	75 e/
Total		230 e/	300	317	352 r/	355 e/
From gypsum e/		12	12	10	10 r/	10 e/
Total		1,987	1,985	1,675	1,537 r/	1,734
Mineral fuels and related materials:						
Coal:						
Bituminous		137,987	137,793	115,726	111,894 r/	103,331
Lignite		63,845	63,169	62,820	60,839	59,484
Total		201,832	200,962	178,546	172,733 r/	162,815
Coke, coke oven		10,340	10,536	9,944	8,575	9,000 e/
Fuel briquets, all grades		96	80	64	50	50 e/
Gas:						
Natural	million cubic meters	4,754	4,836	4,852	4,757	4,956
Manufactured:						
Town gas	do.	16	10	8 r/	7 r/	10 e/
Coke oven gas	do.	4,247	4,414	4,145	3,579 r/	3,500 e/
Generator gas e/	do.	400	400	400	400	400
Total	do.	4,663	4,824	4,553 r/	3,986 r/	3,910 e/
Natural gas liquids e/	thousand 42-gallon barrels	30	30	35	40	40
Peat, fuel and agricultural		198	206	243	310	380 e/
Petroleum:						
Crude, reported		317	289	357	425	653
Refinery products 7/		30,000 e/	14,885	16,191	16,784	18,000 e/

e/ Estimated. r/ Revised. -- Zero.
1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.
2/ Table includes available data through November 2001.
3/ In addition to the commodities listed, antimony and germanium, associated with polymetallic deposits, and cobalt and nickel, associated with copper ores, are produced in quantities that so far have not warranted further recovery.
4/ Reported figure.
5/ Estimates based on reported platinum- and palladium-bearing final (residual) slimes and their average Pt and Pd content from electrolytic copper refining.
6/ Includes building gypsum as well as an estimate for gypsum used in the production of cement.
7/ Includes virtually all major products.

TABLE 6
POLAND: EXPORTS OF SELECTED MINERAL COMMODITIES

(Thousand metric tons, unless otherwise specified)

Commodity	1998	1999	2000
Metals:			
Aluminum and articles thereof	148	168	216
Copper and copper alloys	193	230	248
Steel and steel semimanufactures	2,065	1,876	2,363
Silver metric tons	1,033	1,057	1,042
Zinc	81	102	NA
Industrial minerals:			
Glass	362	370	598
Cement	2,131	1,617	978
Sulfur	833	801	1,024
Mineral fuels:			
Coal	28,078	24,104	23,200
Coke and semicoke	3,252	2,875	3,690
Refined petroleum	1,844	1,970	2,154

NA Not available.

Source: Central Statistical Offiice of Poland, Statistical Yearbook, 1999, 2000, and 2001.

TABLE 7
POLAND: IMPORTS OF SELECTED MINERAL COMMODITIES

(Thousand metric tons unless otherwise specified)

Commodity	1998	1999	2000
Metals:			
Aluminum and articles thereof	241	279	303
Iron ore and concentrate	9,982	7,418	9,737
Steel and steel semimanufactures	1,839	2,155	2,348
Industrial minerals:			
Glass	362	370	429
Mineral fertilizers	1,223	1,562	1,288
Mineral fuels:			
Coal, including briquettes	4,199	2,374	NA
Natural gas million cubic meters	7,539	7,314	NA
Petroleum	15,367	15,873	18,000

NA Not available.

Source: Central Statistical Offiice of Poland, Statistical Yearbook, 1999, 2000, and 2001.

TABLE 8
POLAND: RESOURCES OF MAJOR MINERALS IN 2000

(Million metric tons unless otherwise specified)

	Number of deposits		Geologically documented resources		
Commodity	Total	Exploited	Total	Exploited	+/- 1999
Metal ores:					
Copper	14	5	2,485	1,567	-57.0
Lead and zinc	20	3	184	43	-4.1
Industrial minerals:					
Raw materials for chemicals:					
Sulfur, native	17	5	504	161	-0.2
Rock salt	20	4	80,365	8,441	-24.4
Raw materials for construction:					
Clay, argillaceous material for constrction ceramics:	1,208	400	4,008	647	+15.3
Ceramic clays	27	6	142	12	-0.2
Refractory clays	18	5	57	7	-0.3

See footnotes at end of table.

TABLE 8--Continued
POLAND: RESOURCES OF MAJOR MINERALS IN 2000

(Million metric tons unless otherwise specified)

Commodity	Number of deposits		Geologically documented resources		
	Total	Exploited	Total	Exploited	+/- 1999
Industrial minerals--Continued:					
Raw materials for construction--Continued:					
Dolomites	11	4	357	168	+15.6
Sand and gravel:					
Glass sand	30	7	606	131	-1.6
Filling sand	33	10	4,712	1,217	-469.9
Moulding sand	78	12	355	121	-1.3
Quartz sand for brick and concrete	157	53	725	152	+7.5
Gravel aggregates	4,174	1,479	14,621	3,090	+156.7
Stone:					
Stone for construction and road use	511	209	8,119	3,969	+104.8
Limestone and marl for lime and cement use	177	33	17,450	5,778	-229.6
Mineral fuels:					
Coal:					
Bituminous	130	47	45,362	16661	-1484.8
Lignite	78	12	13,984	2,136	-6.6
Gas					
Natural billion cubic meters	241	179	142	113	-6.7
Coal methane do.	42	18	91	16	+1.8
Petroleum	91	79	14	13	-0.4

Source: Central Statistical Office of Poland, 2001, Statistical Yearbook of the Republic of Poland; Polish Academy of Sciences, 2000, Minerals Yearbook of Poland.

TABLE 9
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/	Major operating companies	Location of main facilities	Annual capacity
Aluminum:			
Primary	Huta Aluminum "Konin" S.A.	Konin	52.
Secondary	Zaklady Metalurgiczne "Skawina"	Skawina	20.
	Zaklady Metali Lekkich SA "Kety"	Kety	
	Zaklady Metalurgiczne "Trzebinia"	Trzebinia	
Barite 3/	Kopalnia Barytu "Buguszow" Sp. z.o.o.	Boguszow, Stanislawow	40.
Cement:	Zaklady Cementowo-Wapiennicze "Gorazdze" S.A.	Chorula	1,800 clinker; 2,400 cement.
Do.	Cementownia "Ozarow" S.A.	Ozarow	2,200 clinker; 2,400 cement.
Do.	Cementownia "Chelm" S.A.	Chelm	1140 clinker; 2,640 cement.
Do.	Kombinat Cementowo-Wapienniczy "Warta" S.A.	Dzialoszyn	600 clinker; 1,150 cement.
Do.	Cementownia "Malogoszcz" S.A.	Malogoszcz	1,840 clinker; 1,800 cement.
Do.	Zaklady Cementowo-Wapiennicze "Nowiny" S.A.	Sitkowka	785 clinker; 1,070 cement.
Do.	Cementownia "Strzelce Opolskie" S.A.	Strzelce Opolskie	1,257 clinker; 1,630 cement.
Do.	Kombinat Cementowo-Wapienniczy "Kujawy" S.A.	Bielawy	900 clinker; 1,000 cement.
Do.	Cementownia "Rudniki" S.A.	Rudniki	840 clinker; 1,470 cement.
Do.	Cementownia "Wierzbica" S.A.	Wierzbica	759 clinker; 1,000 cement.
Do.	Cementownia "Nowa Huta" S.A.	Krakow	290 clinker; 1,100 cement.
Do.	Cementownia "Rejowiec" S.A.	Rejowiec	600 clinker; 845 cement.

See footnotes at end of table.

TABLE 9--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/	Major operating companies	Location of main facilities	Annual capacity
Cement--Continued:	Cementownia "Odra" S.A.	Opole	433 clinker; 800 cement.
Do.	Cementownia "Groszowice" Sp. z.o.o.	do.	304 clinker; 425 cement.
Do.	Cementownia "Wiek"	Ogrodzieniec	710 clinker; 240 cement.
Do.	Fabrika Cementu "Wysoka"	Lazy	304 clinker; 425 cement.
Do.	Cementownia "Wejhorowie"	Wejhorowo	42 clinker; 45 cement.
Do.	Cementownia "Warszawa"	Warszawa (Warsaw)	600 cement.
Do.	Cementownia "Polcement-Saturn"	Wojkowice	400 cement.
Clay, kaolin	KSM "Surmin-Kaolin" S.A.	Lower Silesia, Nowogrodziec	50.
Coal:			
Anthracite	Zaklad Wydobywczo Przetworczy Antracytu Walbrzych-Gaj	Lower Silesia	200.
Bitumiuous	Bytomska Spolka Weglowa S.A.	Upper Silesia (nine mines)	140,000.
	Rudzka Spolka Weglowa S.A.	do. (six mines)	
	Gliwicka Spolka Weglowa S.A.	do. (seven mines)	
	Katowicki Holding Weglowy S.A.	do. (eleven mines)	
	Nadwislanska Spolka Weglowa S.A.	do. (eight mines)	
	Rybnicka Spolka Weglowa S.A.	do. (five mines)	
	Jastrzebska Spolka Weglowa S.A.	do. (six mines)	
	Seven independent mines	do.	
	Walbrzyskie Kopalnie Wegla Kamiennego	Lower Silesia	
	KWK "Nowa Ruda"	do.	
	KWK "Bogdanka" S.A.	do.	
Lignite	KWK "Belchatow"	Belchatow	75,000.
	KWK "Turow"	Turow	
	KWK "Konin"	Konin	
	KWK "Adamow"	Adamow	
	KWK "Sieniawa"	Sienawa	
Coke	Zaklady Koksownicze im. Powstancow St.	Upper Silesia	12,000.
	Zaklady Koksownicze "Przyjazn"	do.	
	Kombinat Koksochemiczny "Zabrze"	do.	
	Huta im. sendzimira	do. (Krakow)	
	Huta "Czestochowa"	do. (Czestochowa)	
	Zaklady Koksownicze "Walbrzych"	Lower Silesia	
Copper:			
Gross weight:			
Ore (1.2% to 2.2% Cu)	Kombinat Gorniczo Hutniczy Miedzi (KGHM) Polska Miedz S.A.	Lubin-Glogow District: Lubin Mine	8,760.
Do.	do.	Polkowice-Sieroszowice Mine	12,775.
Do.	do.	Rudna Mine	15,440.
Concentrate (25.2% to 25.9% Cu)	do.	Lubin beneficiation plant	465.
Do.	do.	Polkowice beneficiation plant	450.
Do.	do.	Rudna beneficiation plant	700.
Metal, refined	do.	Refineries at Glogow I, Glogow II, and Legnica	480.
Feldspar	Strzeblowskie Kopalnie Surowcow Mineralnych	Mine at Sobotka, Lower Silesia; workings at Pagorki Zachodnie and Parorki Wschodnie	50.
Ferroalloys:			
Electric furnace (FeSiMn, FeMn, FeCr, FeSi)	Huta "Laziska" S.A.	Upper Silesia and Laziska Gome	170.
Blast furnace (FeMn)	Huta "Pokoj" S.A.	Upper Silesia, Rudna Slaska	90.
Gold kilograms	KGHM "Polska Miedz" S.A.	Refinery at Glogow "Trzebinia"	550.
Gypsum and anhydrite	Zaklady Przemyslu Gipsowego "Dolina Nidy"	Southeastern Poland, Gacki	1,400.
	Zaklad Gipsowy "Stawiany"	Southeastern Poland, Szarbkow	
	Kopalnia Anhydrytu "Nowy Lad"	Lower Silesia, Niwnice	
	KGHM "Polska Miedz" S.A.	Lower Silesia, Iwiny	
Helium thousand cubic meters	Zaklad Odazotowania Gazu	Western Poland, Odolanow	3,000.

See footnotes at end of table.

TABLE 9--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/	Major operating companies	Location of main facilities	Annual capacity
Lead:			
Concentrate	Zaklady Gorniczo Hutnicze "Boleslaw"	Mines and concentrators at Olkusz and Pomorzany, Bukowno region	60.
	Zaklady Gorniczo "Trzebionka" S.A.	Mines and concentrators at Trzebinia	
Metal, refined	Huta Cynku "Miasteczko Slaskie"	Refinery at Miasteczko Slaskie	60.
	Huta Metali Niezelaznych "Szopienice"	Katowice	
Lime	Zaklady Przemyslu Wapienniczego Trzuskawica	Kieleckie County, Swietokrzyskie Mountains	4,500.
	Slaskie Zaklady Przemyslu Wapienniczego Opolwap S.A.	Opole County	
	Zaklady Przemyslu Wapienniczego Bukowa	Kieleckie County, Swietokrzyskie Mountains	
	Kombinat Cementowo-Wapienniczy Kujawy S.A.	Bydgoskie County	
	Zaklady Cementowo-Wapiennicze Gorazdze S.A.	Opole County	
	Zaklady Cementowo-Wapiennicze "Nowiny" S.A.	Kieleckie County	
	Produkeyjno-Handlowo-Uslugowe Wapmo-Sabinow	Czestochowa County	
	Wojcieszowskie Zaklady Przemyslu Wapienniczago Sp. z.o.o.	Jeleniogorskie County	
	Zaklady Przemyslu Wapienniczego w Sulejowie	Piotrkowskie County	
	Zaklady Przemyslu Wapienniczy w Plazie	Katowickie County	
Natural gas million cubic meters	Ministry of Mining and Energy	Gasfields at pre-Carpathian foothills, Carpathian Mountains Lowlands, near Ostrow Wielkopol-ski, Poznan, and Trzebnica, north of Wroclaw	4,900.
Nitrogen:			
Ammonia (NH_3)	Zaklady Azotowe "Pulawy" S.A.	Pulawy in eastern Poland	2,400.
	Zaklady Azotowe "Kedzierzyn" S.A.	Kedzierzyn in Upper Silesia	
	Zaklady Azotowe "Wloclawek" S.A.	Wloclawek in central Poland	
	Zaklady Azotowe S.A. w Tarnowie	Tarnow in southern Poland	
	Zaklady Azotowe S.A. w Chorzowie	Chorzow in Upper Silesia	
	Zaklady Chemiezne "Police"	Police in northwest Poland	
Fertilizer (N)	Zaklady Chemiezne "Police"	Police in northwest Poland	1,700.
Petroleum:			
Crude	Polskie Gornictwo Naftowe i Gazownictwo Warszawa	Oilfields in north and northwest lowlands; sub-Carpathian region and Carpathian Mountains	200.
Do.	Predsiebiorstwo Poszukiwan i Eksploatacji Rpy i Gazu "Petrobaltic"	Baltic Sea shelf	100.
Refined	Petrochimia "Plock"	Plock in central Poland	13,500.
	Rafineria "Gdansk"	Gdansk in northern Poland	
	Rafineria "Chechowice"	Czechowice in southern Poland	
	Rafineria "Trzebinia"	Trzebinia in southern Poland	
	Rafineria "Glimar" Gorilice	Gorilice in southern Poland	
	Rafineria "Jedlicze"	Jedlicze in southern Poland	
	Podkarpackie Zaklady Rafyneryjne w Jasle	Jaslo in southern Poland	
Salt, all types	Inowroclawskie Kopalnie Soli S.A.	Gora, Mogilno I, and Mogilno II mines at Inowroclaw in central Poland	6,500.
	Kopalnia Soli "Klodawa"	Klodawa in central Poland	
	Kopalnia Soli "Wieliczka"	Wieliczka, in southern Poland, near Krokow; mining deposits at Barycz and Wieliczka	
	Kopalnia Soli "Bochinia"	Southern Poland, mines at the Lezkowice and Siedlec-Moszczenica-Lapczyca deposit	
	KGHM "Polska Miedz" S.A.	Sieroszowice in southwestern Poland	
	Kopalnia Wegla Kamiennego "Debiensko"	Debiensko in Upper Silesia	
	Janikowskie Zaklady Sodowe "Janikosoda" S.A.	Janikowo in central Poland	
Selenium	Huta Metali Niezelaznych "Szopienice"	Katowice	80.
	KGHM "Polska Miedz" S.A.	Refinery at Glogow	
Silver	do.	Refined from ore produced by the Szopienice Pb-Zn smelter-refinery largely from KGHM supplied slimes	1.
	Zaklady Metalurgiczne "Trzebinia"		

See footnotes at end of table.

TABLE 9--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/	Major operating companies	Location of main facilities	Annual capacity
Steel:			14,000 (crude).
Crude and semimanufactures	Huta "Katowice" S.A.	Plant at Dobrowa Gornicza, producing pig iron, cast steel, crude steel, and hot-rolled products	
	P.P. Huta im. T. Sendzimir	Steelworks at Krakow, producing pig iron, crude steel, hot- and cold-rolled products, pipes, and cast iron	
	P.P. Huta "Zawierciu"	Steelworks at Zawierciu, producing crude steel, hot-rolled products, cast iron, and cast steel	
	P.P. Huta "Czestochowa"	Steelworks at Czestochowa, producing pig iron, crude steel, hot-rolled sheets, pipes, and cast iron	
	Huta "Ostrowiec" S.A.	Steelworks at Ostrowiec-Swietokrzyski, producing crude steel and hot-rolled products	
	P.P. Huta "Labedy"	Steelworks at Gilwice, producing crude steel and hot-rolled products	
	Huta "Lucchini-Warszawa" Sp. z.o.o.	Steelworks at Warsaw, producing crude steel, hot-rolled products, and cold-rolled strip	
	P.P. Huta "Florian"	Steelworks at Swietochlowicach, producing crude steel, hot-rolled sheets, galvanized sheets, and cold-rolled strip	
	Huta "Stalowa Wola" S.A.	Steelworks at Stalowa Wola, producing crude steel	
	Huta "Jednosc" S.A.	Steelworks at Siemianowice Slaskie, producing crude steel, hot-rolled products, and pipes	
	Huta "Batory" S.A.	Steelworks at Chorzow, producing crude steel, hot-rolled products, and pipes	
	P.P. Huta "Baildon"	Steelworks at Katowice, producing crude steel, hot-rolled products, cold-rolled strip, and cast steel	
	Huta "Malapanew" S.A.	Steelworks at Ozimek, producing crude steel and cast steel	
	Huta "Zabrze" S.A.	Steelworks at Zabrze, producing crude steel, cast iron, and cast steel	
	Huta "Zygmunt" S.A.	Steelworks at Byton, producing crude steel, cast iron, and cast steel	
Semimanufactures only	P.P. Huta im. Cedlera	Steelworks at Sosnowice, producing hot-rolled products, cold-rolled strip, and cast iron	
	P.P. Huta "Kosciusko"	Steelworks at Chorzow, producing hot-rolled products	
	Huta "Pokoj" S.A.	Steelworks at Rudna Slasko, producing hot-rolled products	
	Huta "Andrezej" S.A.	Steelworks at Zawadskie, producing pipes	
	Huta "Ferrum" S.A.	Steelworks at Katowice, producing pipes	
	P.P. Huta "Bobrek" S.A.	Steelworks at Byton, producing pig iron, hot-rolled products, and cast iron	
	Huta "Buczek" S.A.	Steelworks at Sosnowice, producing cast iron and pipes	
	P.P. Huta "1 Maja"	Steelworks at Gilwice, producing hot-rolled products	
	Zaklad Wielkopiecowy "Szczecin" Sp. z.o.o.	Steelworks at Szczecin, producing pig iron	
Sulfur	P.P. Kopalne i Zaklady Przetworcze Siarki "Siarkopol"	Operations at Tarnobrzeg, mining the Jeziorko-Grebow-Wydza deposit	5,700.
	P.P. Kopalne i Zaklady Chemiczne Siarki "Siarkopol"	Operations at Grzybow, mining the Osiek and Grzybow-Gacki deposits	
Zinc, metal, refined	Huta Cynku "Miasteczko Slaskie"	Imperial Smelter at Miasteczko Slaskie	60.
Do.	Zaklady Metalurgiczny "Silesia" (input from Huta Metali Niezelaznych "Szopienice"	Refinery at Katowice	(30).
Do.	Zaklady Gorniczo Hutnicze "Boleslaw"	Refinery at Boleslaw	65.
Do.	Huta Metali Niezelaznych "Szopienice"	Katowice	28.

See footnotes at end of table.

TABLE 9--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

1/ Table includes data and information available through November 2001.
2/ The data presented in this table were compiled, for the most part, from information provided in the Minerals Yearbook of Poland (Bilans Gospodarki Surowcami Mineralnymi w Polsce Na Tie Gospodarki Swiatowej 1995), prepared and published by the Department of Mineral and Energy Policy, Mineral and Energy Economy Research Centre of the Academy of Sciences of Poland, The Ministry of Environmental Protection, Natural Resources, and Forestry. Additionally, very valuable information and criticism was provided by Mr. Krystof Galos and other members of this academic department.
3/ The production of barite at the "Boguszow" barite mine was stopped in 1997 owing to large-scale area flooding, and its future status is uncertain.

TABLE 10
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Metals:						
Aluminum:						
Alumina e/		100,000	100,000	100,000	100,000	100,000
Aluminum ingot, primary		111,446	110,205	108,006 r/	109,203	109,813
Copper:						
Mine output:						
Ore, Cu content		89	72	155	-- r/	--
Concentrate, gross weight		386	314	676	-- r/	--
Metal, refined, primary and secondary		25,000	25,000	25,000 e/	25,000 e/	--
Gallium, metal e/	kilograms	600	600	600	500	500
Gold, metal	do.	492	458	340	363	306
Iron and steel:						
Iron ore:						
Gross weight		960	970	899	891 r/	900
Fe content		240	250	300 r/	300 r/	300 e/
Concentrate, Fe content		436	453	479	458	447
Metal:						
Pig iron		2,928	3,072	2,756 r/	3,100 e/	3,100 e/
Ferroalloys, total electric furnace 4/		93	95	95 e/	95 e/	95 e/
Ferrochromium	metric tons	19,900	11,394	11,785 r/	6,986 r/	7,000 e/
Ferrosilicon	do.	70,000 r/	50,133 r/	49,963 r/	70,000 r/	50,000 e/
Steel, crude		3,458	3,484	3,178 r/	3,600	3,600 e/
Semimanufactures e/		3,500	3,600	3,500	3,500	3,500
Industrial minerals:						
Barite, concentrate	metric tons	44,930	62,102	14,880	15,900	13,700
Cement, hydraulic		2,841	3,136	2,875 r/	3,000	3,000 e/
Clays:						
Bentonite	metric tons	74,820	79,760	81,010	64,390	77,000
Kaolin	do.	23,240	22,720	14,580	22,930	21,000
Refractory	do.	3,000	3,000	12,000	3,000	3,000 e/
Diamond, synthetic e/	carats	5,000	5,000	5,000	5,000	5,000
Dolomite		2,069	1,989	1,796	1,505 r/	1,500 e/
Gypsum and anhydrite, crude	metric tons	121,000	116,000	128,000	117,000	120,000 e/
Lime, hydrated and quicklime		764	685	644 r/	700 e/	700 e/
Magnesite, concentrate	metric tons	824,800	863,600	877,840	918,000 r/	1,000,000
Nitrogen, N content of ammonia e/	do.	250,000	250,000	250,000	250,000	250,000
Perlite	do.	25,160	25,020	24,240	19,460	17,020
Salt	do.	106,800	126,800	100,470	119,000	121,700
Sand and gravel	thousand cubic meters	1,432	1,872	1,906	1,469 r/	1,500 e/
Stone:						
Limestone and other calcareous stones for cement		7,000 e/	7,800	7,200	7,000 r/	7,000 e/
Crushed stone	thousand cubic meters	3,739	3,510	4,318	2,844 r/	3,000 e/
Talc	metric tons	9,000	6,100	2,820	1,900	1,800
Zeolites	do.	10,000	14,000	10,000	14,000 r/	10,000 e/
Mineral fuels and related materials:						
Coal, brown and lignite		3,829	3,942	3,966	3,745	3,650
Coke:						
Metallurgical		1,854	1,708	1,730	1,515 r/	1,500 e/
Unspecified e/		200	200	200	200	200
Gas, manufactured, coke oven	million cubic meters	307	309	311	235 r/	250

See footnotes at end of table.

TABLE 10--Continued
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Country and commodity 3/		1996	1997	1998	1999	2000
Mineral fuels and related materials--Continued:						
Petroleum						
Crude:						
As reported		68	63	61	59 r/	60
Converted	thousand 42-gallon barrels	480	426	400 e/	400 e/	400 e/
Refinery products e/	do.	40,500	40,000	40,000	40,000	40,000

e/ Estimated. r/ Revised. -- Zero.
1/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.
2/ Table includes available data through November 2001.
3/ In addition to the commodities listed, arsenic, diatomite, feldspar, illite, sodium compounds, sulfur, and sulfuric acid also were produced, but available information is inadequate to make reliable estimates of output levels.
4/ May include some FeCrSi and FeNi, if any were produced.

TABLE 11
SLOVAKIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2000 1/

(Thousand metric tons unless otherwise specified)

Country and commodity 2/ 3/		Major operating companies	Location of main facilities	Annual capacity
Aluminum		ZSNP Aluminum Works (Slovalco)	Ziar and Hronom, central Slovakia	60
Antimony:				
Ore		Liptovska Dubrava	Central Slovakia	50
Do.		Pezinok	Western Slovakia	50
Smelter		Vajskova	Central Slovakia	2
Cement		Lietavska Lucka, Stupava, and Turna	Slovakia	5,400
Coal:				
Brown		Hornonitranske Bane, a.s.	Prievidza, central Slovakia	3,500
Do.		Bana Dolina, a.s.	V'lky Krtis, southern Slovakia	500
Lignite		Bana Zhorie, a.s.	Holic, western Slovakia	400
Copper:				
Ore		Slovinky, Hodrusa-Hamre, and Rudnany	Central Slovakia	500
Refinery		Krompachy	do.	27
Gallium	kilograms	ZSNP Aluminum Works (Slovalco)	Ziar and Hronom, central Slovakia	4,000
Iron:				
Ore		Nizana Slana and Rudnany	Central Slovakia	160
Concentrate		do.	do.	1,300
Lead-zinc, ore		Banska Stiavnica	do.	200
Magnesite		SMZ a.s. Jelsava	Eastern Slovakia	350
Do.		Slovmag a.s. Lubenik	Central Slovakia	150
Petroleum, refinery		Bratislava, Dubova	Slovakia	NA
Salt		Solivary a.s., Presov	Eastern Slovakia	150
Steel, crude		VSZ Holding, a.s. [formerly Vychodoslvenske Zeleziane sp (East Slovak Iron and Steel Works)]	Kosice, eastern Slovakia	4,000
Do.		Zeleziarne Podbrezova a.s.	Podbrezova, Slovakia	600

NA Not available.
1/ Table includes data and information available through November 2001.
2/ Names and locations of main facilities, mines, and oil refineries are identical.
3/ All mining companies are Government-owned.