



2005 Minerals Yearbook

SOUTHERN BALKANS

THE MINERAL INDUSTRIES OF THE SOUTHERN BALKANS

ALBANIA, BOSNIA AND HERZEGOVINA, CROATIA, MACEDONIA, SERBIA AND MONTENEGRO, AND SLOVENIA

By Walter G. Steblez

Europe's Southern Balkan (Adriatic) region is part of the southern Mediterranean Alpine folded zone, which extends through the Dinarides of the former Yugoslavia (Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia), the Albanides of Albania, and the Hellenides of Greece. Mining for base and precious metals may be traced through historical records to at least 5th century B.C. Evidence of early workings at the Bor copper deposit in Serbia suggests prehistoric origins.

Mineral deposits in the region underwent extensive development and exploitation during the second half of the 20th century. Commercial resources of major base metals included those of aluminum, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, and zinc. Such precious metals as gold, palladium, platinum, and silver were found mainly in association with such base metals as copper, lead, and zinc. Industrial minerals included clays and volcanic materials and a broad range of carbonate and silicate rocks, gravels, and sands. Mineral fuels comprised coal (lignite), natural gas, and petroleum.

Until the early 1990s, the mining, processing, and downstream use of base metals established the region as a major European source of copper, lead, and zinc and a major world producer of chromite. The transition of the region from central economic planning to market economy systems between 1991 and 2001 also began a swift deconstruction of existing political and social structures. The ensuing political, social, and ethnic tensions and conflict destroyed or degraded much of the region's mineral industries and industrial infrastructure. In 2005, political and social tensions in the Province of Kosovo in Serbia and Montenegro and in Macedonia continued to abate, which improved conditions for capital investment. The future status of the mineral industries in the countries of the Adriatic Balkan region would be clarified following a political settlement and normalization not only among the states in the region, but also within these states, especially Bosnia and Herzegovina, Croatia, Macedonia, and Serbia and Montenegro.

ALBANIA

In 2005, Albania's gross domestic product (GDP) based on purchasing power parity amounted to about \$16.3 billion. The GDP increased in constant dollars by 6% compared with that of 2004. Industrial production amounted to about 10% of the GDP compared with 14% of the GDP in 2004 (Institute of Statistics of Albania, 2005, p. 29).

Albania's mineral deposits included such metalliferous mineral commodities as chromite, copper ore, and nickeliferous iron ore and such mineral fuels as natural gas and petroleum.

The decline in Albania's overall mineral production mainly stemmed from the country's transition from rigid central economic planning to a market economy; this process began in the early 1990s and has continued through 2005. Of the metal ores, only chromite and a token amount of copper were mined in 2005. In past decades, Albania was among the world's top three producers and exporters of chromite. In 2005, the output of marketable chromite (concentrate and direct shipping ore) increased significantly by about 22% compared with that of 2004. The output of ferrochromium declined by about 25% compared with that of 2004 (table 1).

Many of the country's remaining mineral producing enterprises continued to operate under foreign management. In the metals sector, these enterprises included the ferrochromium plants at Burrel and Elbasan (Darfo S.p.A. of Italy) and the Munelle Mine and other copper mines (Ber-Oner Madencilik San ve Tic As of Turkey).

Dolomite, gypsum, marble, phosphate rock, and other industrial minerals have been worked only intermittently during the past several years. Dolomite and kaolin were the only industrial minerals that were reported to have been produced in the years covered in table 1. The output of dolomite in 2005 declined by about 38% compared with that of 2004; mine production of kaolin increased by about 3.3%. The production of cement and clay increased by 8.5% and 3.3%, respectively, compared with output levels reached in 2004.

In 2005, the production of petroleum continued to increase; output was about 12% greater than that of 2004. The production of natural gas, however, declined by about 5%, and petroleum coke, by almost 18% (table 1). Canadian Banker Petroleum Ltd. continued to explore for oil and gas and to develop new wells at the Marinza and the Patos oilfields. In 2004, Banker Petroleum put 37 wells into production and ordered equipment for 20 wells for early 2005. According to company sources, petroleum resources at the Marinza and the Patos oilfields amounted to about 1.96 billion barrels; the development of these oilfields and the modernization of existing equipment would allow for maximum petroleum recovery of about 98 million barrels (Banker Petroleum Ltd., 2004; 2006).

Outlook

The development of Albania's mineral industry is contingent on such factors as the stability of social institutions, the creation of modern infrastructure, and the adoption of legislation that would attract foreign investment. International financial institutions have continued to assist Albania in developing these objectives.

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BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina was a major industrial center and mineral producing area in the former Yugoslavia. The metallurgical sector included steel and aluminum enterprises; the latter provided feedstock for the former Yugoslavia's aircraft production. Major mineral resources included bauxite, iron ore, and lead-zinc ore. Resources of industrial minerals included but were not limited to asbestos, clays, gypsum, magnesite, and sand and gravel. Resources of mineral fuels included coal and minor deposits of petroleum. The dissolution of former the Yugoslavia in the early- to mid-1990s severed long-standing economic ties in the region; this partly accounted for a sharp reduction of production. Social unrest and armed civil strife, which damaged and (or) destroyed facilities and infrastructure, further depressed Bosnia and Herzegovina's mining and processing activity.

The rehabilitation of Bosnia and Herzegovina's mineral industry was gradual and uneven owing mainly to the semiautonomous status of the country's political subdivisions. Bosnia and Herzegovina continued to comprise two constituent regions: the Federation of Bosnian Moslems and Croats (FBC) and Republika Sprska (RS), which accounted for about 51% and 49% of Bosnia and Herzegovina's territory, respectively. Consequently, Bosnia and Herzegovina's mineral resources and mining and processing facilities were exploited in the FBC and RS under virtually separate economic environments.

In 2005, Bosnia and Herzegovina's gross domestic product (GDP) based on purchasing power parity amounted to about \$26.6 billion (International Monetary Fund, 2006^{§1}). In constant dollars, the GDP increased by about 5.3% compared with that of 2004. The value of mining output in 2005 as a share of the GDP amounted to about 2.6%; the total value of mine production rose by about 17% compared with that of 2004 (Agency for the Statistics of Bosnia and Herzegovina, 2006). The total value of mine production in the FBC amounted to more than 4% of the GDP; the output value of industrial minerals, metal ores, and coal and peat increased by about 8%, 7%, and 3%, respectively, compared with output levels attained in 2004. In the RS, the total value of mining and quarrying output increased by about 18% compared with that of 2004; the output value of metal ores and coal and peat rose by about 66% and 11%, respectively. The value of industrial mineral mining in the RS, however, declined by about 8% compared with that of 2004 (Republika Srpska Institute of Statistics, 2006). The metals sector reported a rise in output of aluminum and steel.

¹References that include a section mark (§) are found in the Internet Reference(s) Cited sections.

In 2005, Aluminij d.d. Mostar (Mostar), which was located in FBC and was Bosnia and Herzegovina's sole producer of primary aluminum, reported a production increase of more than 8% compared with that of 2004. Bauxite production in the RS rebounded from a low output level of 71,312 metric tons (t) in 2002 to 821,000 t in 2004 and to an estimated (preliminary) 800,000 t in 2005. Mostar reported plans to increase the production capacity of primary aluminum by 15,000 metric tons per year (t/yr) (valued at \$36 million) and to build a 9,000-t/yr aluminum semimanufactures plant, valued at \$20 million, in 2006 (Metals Insider, 2006a, b). The production of lead and zinc concentrates in the RS was reported to have resumed in 2004 and 2005; the output of these commodities, however, remained well below output levels of the early 1990s.

In 2005, Mittal Steel Company Ltd. acquired a 41% share of BH Steel Zeljezara Ltd. (valued at \$98 million) from the Kuwaiti Investment Agency, which was in addition to the 51% of BH Steel's shares that Mittal acquired in 2004 when it was formed by the merger of LNM Holdings of the United Kingdom and Ispat Group of India. With a clear majority (92%) share ownership of BH Steel, Mittal renamed the steel mill Mittal Steel Zenica (Zenica). In early 2005, Zenica completed the installation of a new 100-t electric arc furnace with a rated capacity of about 800,000 t/yr. The company also announced plans to invest about \$200 million to restart integrated production at the mill (Mittal Steel Company Ltd., 2005; Reuters, 2005). In 2005, the country's steel production amounted to more than 283,000 t, which was close to two-and-one-half times the output level in 2004 (table 3).

Major activities in the energy sectors were centered on the acquisition of the Stanari lignite mine in RS by United Kingdom-based EFT Group and plans by EFT to build a 429-megawatt thermal power station near Stanari, which would use lignite from the Stanari Mine. The construction of the powerplant would cost about \$303 million; the powerplant would supply about 25% of the total annual energy output of Bosnia and Herzegovina. About 2.8 million metric tons of lignite from the Stanari Mine annually would serve as feedstock for the powerplant (EFT Group, 2005; Petroleum Economist Ltd., 2005).

Outlook

The country's slow return to normalcy is becoming more evident. Foreign investment capital appears to be transecting territorial boundaries; production in the area's mineral industries is being restarted; and linkages among former commercial partners, which were terminated during the civil strife of the mid-1990s, are again being made.

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CROATIA

Petroleum extraction and refining remained the main sector of Croatia's mineral industry. Industrial minerals quarrying and the production of metals played a far lesser role in meeting the country's mineral consumption needs.

Most of Croatia's output of industrial minerals was consumed in the domestic market. The country remained heavily reliant on imports of metals for its industrial needs.

In 2005, Croatia's gross domestic product (GDP) based on constant prices increased by about 4.3% compared with that of 2004. In 2005, the GDP was calculated to be \$53 billion based on purchasing power parity (Crostat, 2006, p. 8; International Monetary Fund, 2006§). Industrial production rose by 5.1% compared with that of 2004. The total value of mining and quarrying output, however, declined by 3% compared with that of 2004. Exports of Croatia's crude materials, which amounted to \$487 million (including those of the mining and quarrying sector, less mineral fuels), increased by about 8.5% compared with those of 2004. Similarly, imports of crude materials, which amounted to \$379 million, increased by 7.4%. Mineral fuels exports, which amounted to about \$1.2 billion, increased by \$32 million compared with those of 2004; imports of mineral fuels rose by 41% (Crostat, 2006, p. 70).

The total output of energy carriers, in terms of value, fell short of the 2004 level of production by about 1.8%. In terms of the volume of output, the production of natural gas reportedly declined by about 1% compared with that of 2004; the production of petroleum (including condensate) declined by about 2% (table 5; Crostat, 2006, p. 9).

INA-Industrija Nafta d.d. Zagreb (INA), which was Croatia's state-owned natural gas and petroleum exploration and production company, reported total investments in exploration and development in 2005 of about \$168 million. INA's investment in Croatia amounted to about \$108 million, or more than 64% of the total; the balance of INA's investments in exploration projects were in such areas outside Croatia as Angola, Egypt, and Syria. INA's discreet exploration investment outlay amounted to about \$42.4 million, of which \$41.4 million was targeted for exploration sites in Syria; this resulted in moderate increases in reserves of condensate, natural gas, and petroleum at the Hayan block of the Jihar oil and gas deposit in Syria. Total outlays for domestic and foreign development projects amounted to about \$125.4 million (INA-Industrija Nafta d.d., 2006, p. 26).

Domestic oilfield and gasfield developments in 2005 included the drilling of five wells: one gas well and four oil wells in the Pannonian Basin. At Medimurje, three natural gas fields were under development: the Vukanovec, the Vuckovec, and the Zebanec fields. Total output from these gasfields between 2008 and 2018 was expected to amount to an estimated 1.1 billion cubic meters of gas. The largest gasfield development project, however, was in the offshore Adriatic area. Production of natural gas from the Ika (five wells) and the Ida (six wells) fields was scheduled to start in early 2006 following the completion of five production platforms and the installation of connecting and export pipelines. The development of the Annamaria field, which is located between Croatia and Italy, was scheduled for completion in 2008, and the startup of production was slated for 2009. The Katarina gasfield also underwent development. A production platform was installed during the year, and three developmental wells were to be drilled in 2006. According to INA's annual report, total reserves of natural gas in Croatia as of December 31, 2005, amounted to about 29.8 million cubic meters; total resources amounted to about 34.8 million cubic meters (INA-Industrija Nafta d.d., 2006, p. 28, 38).

At yearend 2005, the Governments of Croatia and Hungary discussed possible cooperative ventures. These included connecting their oil and gas pipeline systems into a single network and the construction of a 340-kilometer liquefied natural gas terminal on the Adriatic Sea with outlets to major European distribution centers (Alexander's Gas & Oil Connections, 2006).

Outlook

The extraction and processing of hydrocarbons were expected to remain the principal elements of Croatia's mineral industry. Steel and industrial minerals designated for construction, however, may see increases of production in the future as infrastructure development begins to increase. The International Bank for Reconstruction and Development in conjunction with the International Finance Corporation chose Croatia as a priority market in Southern Europe for investment in infrastructure (International Bank for Reconstruction and Development and International Finance Corporation, 2004).

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MACEDONIA

The mineral industry of Macedonia continued to recover slowly in 2005. Macedonia's installed production capacities included those for the mining and processing of metals (mainly nonferrous) and for a variety of industrial minerals; mineral fuels were limited to the production of lignite. Crude petroleum was imported and processed at the country's sole domestic refinery. In 2005, the production of lead-zinc ores was not resumed; the output of these commodities ceased in 2003 owing to financial considerations and labor disputes; environmental issues also contributed to production stoppages and closures (table 7; Metal Bulletin, 2003).

The country's gross domestic product (GDP) based on purchasing power parity in 2005 amounted to about \$15.4 billion; the real GDP in 2005 increased by about 4% compared with that of 2004 (International Monetary Fund, 2006§). Industrial production rose by about 7% compared with that of 2004 and represented about 41% of the GDP. Following a decline in the total value of the mining and quarrying sector in 2004, the total value of mining and quarrying output in 2005 rose by more than 40% compared with that of 2004.

In 2005, the output of lignite declined by about 4% compared with that of 2004, and the output of the mining and quarrying of industrial minerals increased by more than 3% compared with that of 2004 (table 7; Republic of Macedonia State Statistical Office, 2006). Overall, the mineral industry, which comprised the mining and quarrying of metals, industrial minerals, and mineral fuels, accounted for about 17% of total industrial output in 2005 (National Bank of Macedonia, 2006, p. 22).

Although the volume of trade was not available during the preparation of this survey, Macedonia's foreign trade expressed in U.S. dollar values does have bearing on volume, as constant currency values for 2004 and 2005 were used to create comparative indices. In 2005, the export of crude material, which included mineral commodities, increased by almost 54% compared with that of 2004. Exports of metal-bearing ores and metal scrap amounted to about \$33 million, which was a more than threefold increase compared with those of 2004. Exports of crude mineral fertilizers and industrial minerals amounted to about \$18.4 million, or an increase of about 16% compared with those of 2004. Exports of mineral fuels and lubricants amounted to about \$164 million, which was a more than twofold increase compared with those of 2004. Macedonia's imports of crude material, (which included mineral commodities) increased by about 38% compared with those of 2004, and the value (\$107 million) of crude material imports exceeded that of crude material exports by about 57%. Imports of metal-bearing ores and scrap amounted to about \$48 million, which was an increase of about 49% compared with that of 2004. The value of imports of crude mineral fertilizers and industrial minerals, which amounted to almost \$9 million, was about 47% that of exports in 2005. Imports of mineral fuels and lubricants amounted to about \$618 million, which was an increase of almost 56% compared with that of 2004 and was almost fourfold the value of exports. In 2005, Macedonia's exports of iron and steel semimanufactures occupied a major position in the country's export trade profile. In terms of value, exports of iron and

steel semimanufactures accounted for more than 26% of total exports (International Monetary Fund, 2006, p. 4-5; Republic of Macedonia State Statistical Office, 2006).

Macedonia's lead and zinc mining and processing operations remained moribund in 2005. These operations, which included the Sasa, the Toranica, and the Zletovo Mines, went into bankruptcy in 2004 in accordance with a Government decision that was made in consultation with the International Bank for Reconstruction and Development with the aim of privatizing the mines. Recent studies of these and related industries suggest that a restart of mining and processing operations would require extensive environmental remediation work. According to studies undertaken by the United Nations Environmental Programme, major point sources of environmental pollution in Macedonia and in the Balkans, in general, were mining and mineral processing facilities (Peck and Zinke, 2006, p. 24).

The Sasa Mine, which ceased effective lead and zinc production in 2003, reportedly had such substantial environmental issues as major dust emissions, mine and tailings dam discharges into surface aquifers, and an unlined tailings landfill with no effluent treatment at the base (Peck and Zinke, 2006, p. 26). The situation at the Zletovo Mine was analogous to that of the Sasa Mine: the tailings dam near the beneficiation plant has had a history of discharges into the outlying aquifers; the tailings landfill reportedly was also unlined with no effluent treatment at the base. The Zletovo lead-zinc smelter at Veles reportedly was included among the problematic point sources of pollution, especially with respect to effluent discharges into outlying soils from the slag landfill. The Toranica Mine also lacked a tailings pond lining; effluents containing cadmium, lead, and zinc from the pond often contaminated nearby rivers and other aquifers. Similar environmental issues affected the country's chromite mines, copper mining and processing facilities, and ferroalloy producing plants (Peck, 2004, p. 105; Peck and Zinke, 2006, p. 27, 32).

Exploration activity during the year included plans by Sirius Exploration plc of the United Kingdom to undertake the evaluation of the Kadiica and the Osogovo copper porphyry deposits in northeastern Macedonia. Sirius was to undertake the work under the auspices of a joint-venture agreement with Phelps Dodge Corp. of the United States. Under the provisions of the joint-venture agreement, Phelps Dodge would develop the sites should they prove to be major copper-bearing deposits [2 million metric tons (Mt) of contained copper] and would reimburse Sirius at twice its exploration expenditure and 1.5% of future net smelting income. Sirius would be free to develop these properties if they do not meet the above criteria (Mining Journal, 2005).

Macedonia continued to produce bentonite, cement, feldspar, gypsum, sand and gravel, stone (carbonate and silicate), and other construction materials mainly for export. In 2005, exports of crude nonmetallic mineral exceeded imports by more than double.

Lignite mining and petroleum refining were the only industries in Macedonia's mineral fuels sector. Lignite production in 2005 amounted to about 8.2 Mt. Domestic mining supplied about 70% of the fuel for the Bitola coal-fired electric power station, which supplied more than 70% of the country's electricity needs. Lignite resources reportedly may be exhausted

by 2010 at the present rate of production, however (National Bank of Macedonia, 2006, p. 71-72).

Outlook

Despite the moribund status of nonferrous metals production in 2005, the production of copper, lead-zinc, and associated metals was expected to resume and grow in volume owing not only to their availability but also to gradual environmental remediation and increasing regional stability and investor confidence. Foreign direct investment (FDI) in the country's mining and quarrying sector in 2005 amounted to more than \$20.5 million, which was more than three times greater than FDI in 2004.

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SERBIA AND MONTENEGRO

Serbia and Montenegro was a modest producer of bauxite, copper, and lead and zinc ores, and such industrial minerals as clays, feldspar, gypsum, magnesite, pumice, and salt. The output of mineral fuels included coal, natural gas, and petroleum.

Despite internal tensions arising from Montenegro and Serbia's Kosovo Province's attempts to gain independent nation status, in 2005, Serbia and Montenegro displayed modest economic progress. According to the International Monetary Fund, Serbia and Montenegro continued to report overall economic growth in 2005. The gross domestic product (GDP) based on purchasing power parity amounted to about \$43.1 billion; in constant prices, the GDP grew by about 4.5% compared with that of 2004 (International Monetary Fund, 2006§). Owing to the expected dissolution of the country into two independent republics, such Governmental agencies as the Statistical Office ceased to operate in 2006; consequently, most data for Serbia and Montenegro for 2005 was obtained separately from each republic.

The total value of industrial production in Serbia increased by about 0.8% compared with that of 2004. The overall value of mining and quarrying increased by 2.1% compared with that of 2004; the value of natural gas and petroleum production declined by 4.5% and that of coal mining increased by 2.9%; the output values of industrial minerals and metal ores increased by 17.2% and 5.8%, respectively. Serbia's output value of metals increased by about 16.7% compared with that of 2004; that of natural gas and petroleum derivatives and industrial minerals declined by 2.7% and 2.3%, respectively (table 9; Republichki Zavod za Statistiku Srbije, 2006, p. 254, 255).

In 2005, the value of Montenegro's total industrial output declined by almost 2% compared with that of 2004. The total output value of mining and quarrying increased by almost 2% compared with that of 2004. The output value of mineral fuels extraction declined by 13.3% compared with that of 2004; the output value of mining and quarrying of industrial minerals and metals, in aggregate, showed an increase of about 10.2% compared with the preceding year (Republika Crna Gora Zavod za Statistiku, 2006, p. 21).

The Government continued to reduce restrictions on foreign investment in the country's mineral industry. In 2005, foreign investment in the country's mineral industry encompassed such targets as the Rudarsko Topionicki Bazen Bor (RTB Bor) copper mining and processing complex in Serbia, the Rudnici Boksita bauxite mines in Montenegro, and magnesite and nickel interests in Serbia's Kosovo Province. Planned copper and gold exploration and development projects included three sites in eastern Serbia at Crni Vrh, with valuable associated minerals that included cadmium, germanium, lead, rhenium, selenium, and zinc (Reuters, 2005a).

Commodity Review

Metals

Aluminum.—Serbia and Montenegro's facilities for the production of primary aluminum were located in Montenegro. In 2005, the production of bauxite increased by more than 10% compared with that of 2004. Although alumina production fell short of output in 2004 by about 4%, aluminum production increased by about 1.7% compared with that of 2004 (table 9). Aluminum exports in 2005 exceeded 44,000 metric tons (t), which was an increase of about 33% compared with those of 2004; Slovenia and Italy were the principal aluminum importers in both years (Republichki Zavod za Statistiku Srbije, 2006, p. 289).

In 2005, Russia's RUSAL aluminum smelting complex acquired 65.4% of Kombinat Aluminijuma Podgorica (KAP) in Montenegro in midyear. In November, RUSAL also announced plans to acquire a 20-year concession to operate the Rudnici bauxite mine, which was a major feedstock supplier to KAP. The 20-year concession was valued at about \$5 million (Metals Insider, 2005; Mining Journal, 2005b).

Copper.—Serbia remained Serbia and Montenegro's sole producer of copper ore and primary copper metal. In 2005, the gross mine output of copper ore increased by more than 9% compared with that of 2004. Copper in concentrate was

26,100 t, which was an increase of about 9% compared with the preceding year; primary copper production was more than two-and-one-half times greater than that in 2004 (table 9). This, however, was an improvement over mine output of copper in 2003 when production fell by 28% compared with that of the preceding year. The production rebound in 2004-05 at the RTB Bor copper mining and processing complex followed production shortfalls that stemmed from facility expansion and restructuring in 2003 and 2004.

The mining and processing operations at RTB Bor were considered one of the major regional point sources of environmental pollution (airborne and those entrained into aquifers) and required remedial action prior to the company's privatization. Major pollutants included sulfates of cadmium, copper, iron, lead, and zinc. Additionally, a concrete culvert/collector beneath the flotation tailings site, which was in a state of deterioration, required rapid intervention. The International Bank for Reconstruction and Development approved a loan valued at about \$30 million for upgrading the RTB Bor complex, especially those facilities that were largely responsible for environmental pollution. About \$15 million was to be allocated for the reclamation of aquifers and lands adjacent to the RTB Bor complex (Tanjug, 2005; Peck and Zinke, 2006, p. 35-37, 40).

In addition to the mine and smelter output of copper, the ore mined and processed by RTB Bor also had such associated precious metals as gold, platinum-group metals (PGM), and silver, and also some base nonferrous metals.

In 2005, Dundee Precious Metals Inc. (Toronto, Ontario, Canada) and Eurasian Minerals Inc. (Vancouver, British Columbia, Canada) were granted exploration and mining concession contracts in the Bor region. Dundee was granted a concession to explore for copper and gold at Crni Vrh in eastern Serbia near Bor (Reuters, 2005a). The primary ore type in this region, which is known as the Timoc Magmatic Complex district (part of the Carpatho-Balkan Metallogenic Province), consists of porphyry deposits; such other ore types as epithermal deposits were believed to be near exhaustion. The main mineral commodities mined in the Timoc district were copper, gold, and silver; important associated commodities were lead and zinc, molybdenum, and PGMs; the principal ore deposits in this region, apart from Bor, are the Majdanpek, the Veliki Krivelj, and the Borska Reka deposits (Republic of Serbia Ministry of Mining and Energy, 2004, p. 20). Dundee's target sites additionally were believed to contain cadmium, germanium, rhenium, and selenium. The grant permitted Dundee to conduct exploration and survey work for 3 years with a possible 2-year extension. Also, mining concessions were granted for 25 years. Dundee planned outlays totaling \$13.6 million for the 2006 exploration program (Dundee Precious Metals Inc., 2006).

Eurasian Minerals Inc. of Vancouver, British Columbia, Canada, was granted an exploration permit for the Borovo-Donje Nevlje and the Brestovac areas near Bor in the Timoc Magmatic Complex, which is endowed with resources of about 20 million metric tons (Mt) of copper and about 1,000 t of gold. The Brestovac permit covers an area of about 77 square kilometers (km²) and comprises the Brestovac area (25 km²) and the Zlot area (52 km²); initial drill results indicated zinc (2.07% to 4.67%), copper (0.11% to 0.13%), and gold (0.4 grams per

metric ton) (Eurasian Minerals Inc., 2005a, b). Additionally, exploration and survey work by Eurasian Minerals continued in the region at the Lece, the Plavkovo, the Stara Planina, and the Zajaca exploration permits, which were granted by the Government in 2004. Initial rock chip sampling showed varying amounts of copper, gold, lead, and zinc in these areas (Eurasian Minerals Inc., 2005a, b).

In 2005, Cambridge Mineral Resources plc of the United Kingdom, which was the corporate successor to Hereward Ventures plc, continued exploration work at the Gradishte, the Ivan Kula, and the Tulare permit areas. Trenching results at Gradishte indicated the presence of porphyry-based copper and gold (Cambridge Mineral Resources plc, 2005, p. 3).

Iron and Steel.—In 2005, the combined crude steel production from Serbia and Montenegro's two steel mills increased by more than 10% compared with that of 2004; the output of pig iron increased by about 16% during the same period. U.S. Steel Serbia (USSB) (a subsidiary of the U.S. Steel Corporation since 2003; formerly Sartid AD) in Serbia and HK Zeljezara Niksic AD in Montenegro had effective steelmaking capacities of about 2.2 Mt and 300,000 t, respectively. In 2005, USSB reported that it had upgraded and restarted the second blast furnace, which had been taken offline in 1987. The blast furnace rebuilding project, which was valued at \$33 million, would bring USSB to its full capacity of 2.2 Mt from the 1.1-Mt production level of 2004 (Reuters, 2005b). In 2005, the privatization of Zeljezara Niksic remained unsettled. In September, the Agency for Economic Restructuring and Foreign Investments extended the submission deadline for bids to the end of the year.

Lead and Zinc.—A clearer picture of future mine production of lead and zinc awaits the resolution of the final political status of Serbia's lead-and zinc-rich Kosovo Province and definitive exploration results in the Bor region. Rudarsko-Metalursko-Hemijski Kombinat za Olovo i Cink Trepca [Trepca lead-zinc mining, beneficiation, and smelting complex (Trepca)] remained under a United Nations (UN) protectorate status. In 2005, the production of refined lead appeared to have ceased, although mining continued; output at yearend amounted to more than 160,000 t of ore, in which recoverable lead and zinc were about 1,800 t and 3,000 t, respectively (table 9).

Industrial Minerals

Serbia and Montenegro produced a broad range of industrial minerals, which included cement, crude magnesite, lime, quartz sand, and sand and gravel. In 2005, the total value of mine output of industrial minerals increased by more than 17% compared with that of 2004 (Republički Zavod za Statistiku Srbije, 2006, p. 254). In 2005, one of the major issues in this sector included a concession, which was granted by the Serbian Government to Rio Tinto plc of the United Kingdom, to explore for and mine boron in the Jarondol Basin. Reportedly, Rio Tinto planned to allocate about \$26 million for exploration and during any subsequent mining would return 3% of the total net revenue from boron mining to the Serbian Government (Reuters, 2005a).

Mineral Fuels

In the mineral fuels sector, the increases in the output of brown coal and lignite were the chief factors in the total increase of coal production of about 3.5% compared with that of 2004. In 2005, the value of coal imports rose by 9.3%; imports (volume) of natural gas and petroleum, however, declined by 18% and 16%, respectively, compared with those of 2004. In 2005, the Russian Federation remained Serbia and Montenegro's main supplier of fossil fuels. Complete statistical data were available only for Serbia for 2005. Given Serbia's significantly greater size and industrial infrastructure, however, Serbia's trade data, which show the Russian Federation supplying 100% of Serbia's gas imports and about 91% of the petroleum imports, would account for the major portion of the country's total mineral trade (Republički Zavod za Statistiku Srbije, 2006, p. 292).

The Mineral Industry of the Serbian Province of Kosovo

The Serbian Province of Kosovo became a UN protectorate in 1999 under the provisions of UN Security Council Resolution 1244 following the Kosovo crisis that year. More recently, the UN Interim Administration Mission in Kosovo (UNMIK) was involved in efforts to restore Kosovo's infrastructure, industry, and economy, in general, much of which was damaged or destroyed in the conflict of 1999. To promote the reconstruction and development of Kosovo's mineral sector, UNMIK undertook the drafting of mining legislation and the establishment of an independent commission on mines and minerals. The Province of Kosovo's mineral assets include metals [bauxite, iron ore (nickeliferous), and lead-zinc ore], mineral fuels (lignite), and industrial minerals (aggregates, dimension stone, and magnesite) (International Bank for Reconstruction and Development, 2005, p. 3–7). Major events in 2005 included the reactivation of the Trepca lead and zinc mining and processing facilities, which had been dormant since the end of hostilities in the area in 1999 (Ibraj, 2005). Other mineral assets that were being privatized included the Glogovac ferronickel plant, three associated nickeliferous iron ore mines, and the Goleshi and the Strezoc magnesite mines and processing facilities (Ibraj, 2005; Mining Journal, 2005a)

Outlook

Serbia and Montenegro is slowly recovering from extreme political and social tension, which pervaded the region in the late 1990s and early 2000s and disrupted long-established regional markets. The production of all minerals is expected to recover slowly during the next several years owing to such factors as investor reticence stemming from a lack of full regional stability, especially the uncertainty about Kosovo's future status.

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SLOVENIA

Slovenia remained reliant on imports of minerals to meet the needs of its economy. Domestic mine production continued to be limited to the extraction of coal, natural gas, petroleum, and a variety of industrial minerals. In 2005, imports of crude materials (including ores and concentrates), mineral fuels, and metals (ferrous and nonferrous) constituted about 22% of total imports. In terms of value, imports in these categories exceeded exports by almost two times (Statistical Office of the Republic of Slovenia, 2006, p. 58-59).

In 2005, Slovenia's gross domestic product (GDP) based on purchasing power parity amounted to \$43.045 billion. In constant dollars, the GDP increased by 4.1% compared with that of 2004. Industrial production rose by about 3.4% compared with that of 2004. The total value of mine and quarry production increased by almost 7% compared with that of 2004. The output value of basic metals and semimanufactures increased by about 8% during the same period. Exports of crude materials (including metals and industrial minerals) accounted for about 2.2% of total exports in 2005; imports of crude materials accounted for about 5.3% of total imports (Statistical Office of the Republic of Slovenia, 2006, p. 43, 56, 57).

The Kidričevo Talum d.o.o. primary aluminum smelter and three steel mills [Slovenske Železarne (SŽ), which was a state-owned holding company that maintained ownership of SŽAcroni Jesenice d.o.o. (Acroni) and SŽ Metal Ravne d.o.o. (Metal Ravne); and Store Steel Ltd. (formerly a subsidiary of the Inexa Group of Sweden since 1999)] were the main components of Slovenia's metallurgical industry.

In 2005, Talum's output (by volume) of primary and secondary aluminum increased by about 15% compared with that of 2004. The value of aluminum exports declined by more than 1% compared with that of 2004; Italy was the leading importer of aluminum from Slovenia, accounting for about 41% of total imports.

In 2005, Talum's management decided to close potline B owing to cost considerations involved in modernizing the potline to meet the European Union's environmental standards. Aluminum production levels would be maintained through increased processing of secondary aluminum. Talum planned to expand the capacity of potline C, whose output would be mixed with remelted aluminum scrap (Metals Insider, 2006).

In 2005, Slovenia's total output of crude steel rose by about 6.8% compared with that of 2004; the output of steel semimanufactures rose by about 2.9% (table 11). Acroni, which was the country's major producer of crude steel, reported that it was continuing facility modernization that included the installation of a new line for solution annealing of stainless steel plates, the replacement of bell-type annealing furnaces, and a series of units for pollution abatement. Also, the company undertook a modernization study of its rolling mill with the

objective of performing a total upgrade to be completed by 2010 (SŽAcroni Jesenice d.o.o., 2006, p. 3, 18). In 2005, Acroni's total sales amounted to 267,196 metric tons of steel, which was an increase of almost 1% compared with those of 2004; sales revenues, however, increased by almost 15% (SŽAcroni Jesenice d.o.o., 2006, p. 5).

In 2005, Slovenia's production of natural gas, petroleum, and brown coal and lignite, declined by 14%, 13.3%, and 5.6%, respectively, compared with output levels attained in 2004 (table 11). In 2005, imports of mineral fuels increased to about 10.6% of total imports compared with 8.2% in 2004.

Outlook

During the past decade, Slovenia's economic transition from a central planning model to an open market system has gradually diminished the role of the mineral industry; higher value industries began playing an increasingly greater role in the country's economy. Raw materials needed by Slovenian industry to a greater extent are from sources that are beyond the country's borders.

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TABLE 1
ALBANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005	
METALS						
Bauxite ^c	5,000	5,000	5,000	-- ^r	-- ³	
Chromium:						
Chromite, gross weight ^c	200,000	215,000	220,000	160,300 ^r	170,000 ³	
Marketable ore and concentrate:						
Marketable ore (41.6% Cr ₂ O ₃)	86,000	82,000	89,000 ^r	40,000 ^r	50,000	
Concentrate	--	9,000	10,000	14,430 ^r	16,270	
Total	86,000	91,000	99,000 ^r	54,430 ^r	66,270	
Ferrochromium	11,900	22,800	37,800	47,700 ^r	35,780	
Copper:						
Ore:						
Gross weight	--	--	--	29,030	73,000	
Concentrate:						
Gross weight	--	--	--	3,210	8,480	
Cu content ^c	--	--	--	642	1,696 ³	
Iron and steel:						
Crude steel ^c	94,100	96,600	86,117	98,026	140,000	
Rolled steel	--	--	--	135,000	150,000	
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	--	348 ^r	578	530 ^r	575 ^c
Clay, kaolin ^c	do.	385	350	--	300 ^r	310
Dolomite ^c		500,000 ^r	1,000,000 ^r	1,500,000 ^r	1,613,000 ^{r,3}	1,000,000
Olivinite ^c		200	200	200	200	200
Salt		25,783	22,746	21,448	24,783	25,000 ^c
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bitumen, natural ⁴		--	4,200	42,076	61,035	60,000 ^c
Coal, lignite	thousand metric tons	16,400	20,300	18,000	12,600 ^r	12,000 ^c
Gas, natural, gross production ⁵	thousand cubic meters	10,980	9,150	11,617	11,965	11,347
Petroleum:						
Coke		45,000	40,000	57,541	58,712	47,900
Crude, gross weight		329,370	350,038	359,253	399,740 ^r	448,041

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to total shown. ^rRevised. -- Zero.

¹Table includes data available through November 2006.

²In addition to the commodities listed, a variety of industrial minerals and construction materials (common clay, quartz, titanomagnetite, stone, and sand and gravel) are produced, but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Includes asphalt and bitumen produced at petroleum refineries.

⁵Separate data on marketable production are not available, but gross and marketed output are regarded as being nearly equal.

TABLE 2
ALBANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005¹

(Thousand metric tons unless otherwise specified)

Commodity	Location of main facilities (all state-owned)	Annual capacity
Cement	Elbasan, 32 kilometers southeast of Tirana; Kruje, 20 kilometers northwest of Tirana; Shkoder, 85 kilometers northwest of Tirana; and Vlore, southwest of Tirana	1,200
Chromite	Bater (including Bater I and II and Martanesh), 40 kilometers northwest of Tirana	450
Do.	Bulquize (including Bulquize south, Fush, Ternove, and Todo Maco), 35 kilometers northwest of Tirana	450
Do.	Kalimash, 60 kilometers north of Tirana	250
Do.	Kam, 70 kilometers north of Tirana	100
Do.	Klos, 20 kilometers northeast of Tirana	50
Do.	Pogradec (including Katjiel, Memelisht, Pojske, Pishkash, and Prrrenjas), 50 kilometers east of Tirana	100
Coal, lignite	Maneze, Mezes, and Valias Mines in Tirana Durres area; Krabe Mine, 20 kilometers southeast of Tirana; Alarup and Cervnake Mines, in Pogradec area, 80 kilometers southeast of Tirana; Mborje-Drenove Mine in Korce area, 85 kilometers southwest of Tirana; and Memaliaj Mine in Tepelene area, 110 kilometers south of Tirana	2,500
Copper:		
Ore	Fushe-Arrez, 80 kilometers north of Tirana	350
Do.	Gjejan, 100 kilometers northeast of Tirana	150
Do.	Golaj (including Nikoliq and Pus), 120 kilometers northeast of Tirana	150
Do.	Kurbnesh-Perlat, 55 kilometers northeast of Tirana	100
Do.	Rehove, 110 kilometers southeast of Tirana	100
Do.	Reps (including Gurch, Lajo, Spac, and Thurr), 55 kilometers north of Tirana	350
Do.	Rreshen, 50 kilometers north of Tirana	50
Do.	Shkoder (including Palaj, Karma I and II), 85 kilometers northwest of Tirana	100
Smelter	Kukes, 110 kilometers northeast of Tirana	6
Do.	Lac, 35 kilometers northwest of Tirana	7
Do.	Rubik, 50 kilometers north of Tirana	4
Ferrochromium	Burrel, 35 kilometers northeast of Tirana	40
Do.	Elbasan, 32 kilometers southeast of Tirana	36
Iron ore	Prrrenjas (Bushtrica, Prrrenjas, Skorska I and II), 70 kilometers southeast of Tirana	650
Do.	Guri i Kuq (including Cervenake, Grasishta, Guri i Kuq, Hudenisht and Guri Pergjgur), 25 kilometers east of Tirana	500
Natural gas	million cubic feet Gasfields on southwest Albania between Ballsh and Fier	16,000
Nickel, smelter	Elbasan	6
Petroleum:		
Crude	42-gallon barrels per day Oilfields at Marineze, Ballsh, Shqisht, Patos, Kucova, Gorrisht, and others	35,000
Refined	do. Refineries: Ballsh, Cerrik, Fier, and Stalin	33,000
Steel	Steel of the Party Metallurgical Combine at Elbasan	150

¹A substantial portion of these enterprises have been operating significantly below capacity during the transition to a market economy; the capacities provided in this table represent only the latest available information and may not show the true status of these enterprises.

TABLE 3
BOSNIA AND HERZEGOVINA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005	
METALS						
Aluminum:						
Bauxite	90,027	71,312	573,000	916,928 ^r	900,000	
Alumina, metallurgical grade	30,928	--	35,011	356,844 ^r	350,000	
Metal, ingot; primary and secondary	95,064	102,271	112,503	121,296 ^r	131,232	
Iron and steel:						
Ore and concentrate:						
Gross weight	264,540	212,114	126,929	280,596 ^r	300,000	
Fe content	132,000	106,000	63,000	140,300 ^r	150,000	
Metal:						
Ferroalloys ^c	20,000 ^r	20,000 ^r	20,000 ^r	19,820 ^{r,3}	15,000	
Pig iron ^c	60,000	60,000	60,000	60,000	60,000	
Crude steel	138,685	115,222	166,368	117,170	283,111	
Semimanufactures ^c	160,000	150,000	113,000	150,000	150,000	
Lead:						
Concentrate, gross weight	3,271	--	--	1,668 ^r	1,700	
Metal, smelter, primary and secondary ^c	100	100	100	35 ^r	50	
Manganese ore: ^c						
Gross weight	2,000	2,000	2,000	2,000	2,000	
Mn content	500	500	500	500	500	
Zinc concentrate, gross weight	3,432	--	--	2,135 ^r	2,200	
INDUSTRIAL MINERALS						
Asbestos, all kinds ^c	500	500	500	500	500	
Barite concentrate ^c	100	80	80	65 ^r	70	
Cement	thousand metric tons	703,843	912,611	890,179	1,044,944	1,000,000
Clays:						
Bentonite	9,829 ^r	13,050 ^r	16,967 ^r	24,353 ^r	25,000	
Ceramic clay, crude	40,097	4,340	35,861	16,784 ^r	20,000	
Fire clay, crude	34	10	--	--	--	
Kaolin:						
Crude	13,000 ^r	6,500 ^r	50,000	46,000 ³	45,000	
Calcined	5,000 ^r	3,000 ^r	--	--	--	
Dolomite, crude	49,073	96,584	96,776	223,378 ^r	200,000	
Gypsum:						
Crude	76,100	44,200	63,050 ^r	139,520 ^r	55,000	
Calcined	6,052	6,504	6,042	6,000 ^c	6,000	
Lime	88,839	58,316	79,302 ^r	146,000 ^r	120,000	
Magnesite, crude	2,000	2,000	2,000	2,000	2,000	
Nitrogen, N content of ammonia	500	500	500	500	500	
Quartz, quartzite, glass sand ^c	50,000	50,000	50,000	50,000	50,000	
Salt, all sources	200,000	200,000	200,000	260,500	250,000	
Sand and gravel, excluding glass sand	thousand cubic meters	348	362	476	450	400
Sodium compounds:						
Soda ash	36,882	--	11,804	11,000 ^c	11,000 ^c	
Caustic soda ^c	5,000	5,000	5,000	5,000	5,000	
Sodium bicarbonate ^c	500	500	500	500	500	
Stone (excluding quartz and quartzite), dimension, crude:						
Ornamental	square meters	41,700	35,900	35,800	35,000 ^c	35,000 ^c
Crushed and brown, n.e.s.	thousand cubic meters	231	321	153	150	150
Other	cubic meters	10,540	11	--	--	--
Sulfur, byproduct of metallurgy ^c	1 ^r	--	--	--	--	
MINERAL FUELS AND RELATED MATERIALS						
Brown coal and lignite	thousand metric tons	7,579	7,799	9,006	8,896 ^r	9,000
Petroleum refinery products		326,000	291,000	72,000	110,000	110,000

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

¹Table includes data available through November 2006.

²In addition to commodities listed, common clay was also produced, but available information is inadequate to make reliable estimates of output.

³Reported figure.

TABLE 4
BOSNIA AND HERZEGOVINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Alumina		Energoinvest	Plants at Birac-Zvornik	600
Do.		do.	Plant at Mostar	280
Aluminum		Aluminij d.d. Mostar.	Smelter at Mostar	150
Bauxite		Energoinvest	Mines at Vlasenica, Jajce, Bosanska Krupa, Posusje, Listica, Citluk, and other locations	2,000
Cement		Tvornica Cementa Kakanj d.d.	Plant at Kakanj	650
Do.		D.D. Fabrica Cementa Lukavac	Plant in Lukavac	340
Coal:				
Brown		SOUR Titovi Rudnici Uglja, Tuzla	Mines in BiH	12,000
Lignite		do.	do.	7,000
Ferrous alloys		Elktrobosna, Elektrohemijaska i Elektrotermijaska Industrija	Plant at Jajce	80
Iron ore		Rudarsko Metalurški Kombinat Zenica	Mines at Vares, Ljubija, and Radovan	5,000
Lead-zinc ore		Energoinvest	Mine and mill at Srebrenica	300
Manganese ore		Mangan-Energoinvest	Mine and concentrator at Buzim	100
Petroleum, refined	thousand 42-gallon barrels per day	Energoinvest: Rafinerija Nafte Bosanski Brod	Refinery at Bosanski Brod	100
Pig iron		B-H Steel-Zeljezara Ltd. (Kuwait Consulting and Investment, 50%, and Zeljezara Zenica Ltd., 50%)	Blast furnace at Zenica	2,250
Salt, rock	cubic meters per year	Hemijski Kombinat "Sodaso," Rudnik Soli i Solni Bunari	Mines at Tusanj	120,000
Do.	do.	do.	Production from brine at Tuzla, BiH	2,000,000
Steel, crude		Mittal Steel Zenica (Mittal Steel Company Ltd., 92%)	Plant at Zenica	2,060

TABLE 5
CROATIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005 ^c	
METALS						
Aluminum:						
Metal, ingot, primary and secondary	16,019	1,000	1,200	5,500	4,400	
Alloys	823	812	1,180	1,100	1,100	
Semimanufactures, rolled	34,106	33,774	38,114	35,000	35,000	
Ferrochromium	361	--	--	--	--	
Steel:						
Crude, from electric furnaces	57,993	33,851	43,380	80,000 ^r	69,000	
Semimanufactures:						
Bars and wire rod	31,583	2,078	17,459	35,000 ^r	30,000	
Seamless tubes	35,297	23,435	25,728	50,000 ^r	30,000	
Welded pipe	39,935	37,509	67,501	50,000 ^c	50,000 ^c	
INDUSTRIAL MINERALS						
Cement	thousand metric tons	3,246	3,378	3,654	3,811	3,800
Clays:						
Bentonite		10,580	12,102	13,568	16,000	15,000
Ceramic clay ^e		6,000	150,000	188,000 ³	637,000	200,000
Gypsum:						
Crude		130,861	145,000	166,000	148,000	150,000
Calcined		1,217	1,200	1,400 ^c	1,200 ^c	1,200 ^c
Lime	thousand metric tons	253	269	251	250	250
Nitrogen, N content of ammonia	do.	316	289	322	404	400
Pumice and related materials, volcanic tuff	do.	42	41	29	23	20
Salt, all sources		32,585	36,885	31,281	23,000	25,000
Sand and gravel, excluding glass sand	thousand cubic meters	3,500	4,650	4,878	35,000	35,000
Silica:						
Quartz, quartzite, glass sand		252,013	275,121	237,141	128,000	130,000
Glass:						
Flat glass	thousand square meters	305	390	495	400 ^c	400 ^c
Container glass		140,570	148,612	171,070	150,000 ^c	150,000 ^c
Other hollow glass		1,631	1,711	1,466	1,400 ^c	1,400 ^c
Stone, excluding quartz and quartzite, dimension stone, crude:						
Ornamental	square meters	1,044,944	1,127,948	1,093,573	1,000,000 ^c	1,000,000 ^c
Crushed and brown, n.e.s.	thousand metric tons	12,941	14,736	19,022	19,000 ^c	19,000 ^c
Other ^e	cubic meters	25,000	25,000	25,000	20,000	20,000
Sulfur, byproduct of petroleum ^c		15,000	7,069	7,471	7,500 ^c	7,500 ^c
MINERAL FUELS AND RELATED MATERIALS						
Carbon black		21,180	19,386	21,497	21,000 ^c	20,000
Natural gas, gross production	million cubic meters	2,010	2,122	2,190	1,851	1,837
Petroleum, crude:						
As reported, includes condensate	thousand metric tons	1,121	1,108	1,052	1,155 ^r	1,134
Refinery products		5,400,000	4,513,338	4,742,012	4,500,000 ^c	4,500,000 ^c

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

¹Table includes data available through November 2006.

²In addition to commodities listed, common clay also was produced, but available information is inadequate to make reliable estimates of output levels.

³Reported figure.

TABLE 6
CROATIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Alumina		Jadral, Jadranski Aluminijum	Jadral Alumina Plant	150
Aluminum		Boris Kidric Tvornica Lakhir Metala	Smelter at Sibenik	75
Do.		Top-Tvornica Olovni i Aluminjskikh	Semimanufactures producer at Savska	NA
Cement		Dalmacija Cement	Sv. Juraj plant at Kastel Sucurac	1,300
Do.		do.	Sv. Kajo plant at Solin	750
Do.		do.	Majdan plant at Solin Majdan	780
Do.		Istra Cement International D.D.	Plant at Pula	70
Do.		Tvornica Cementa Koromacno	Plant at Koromacno	420
Do.		Tvornica Cementa Umag D.D.	Cement plant at Umag	480
Do.		Nasicecement D.D.	Nacise plant at Tajnovac	840
Coal, bituminous		Istarski Ugljenokopi Rasa	Mines at Labin and Potpican	500
Natural gas	million cubic feet	Industrija Nafted.d. Zagreb (INA)	Main natural gasfields at Bogsic Lug and Molve	70,000
Petroleum, crude	thousand 42-gallon barrels per day	do.	Oilfields in Croatia and Slovenia (Benicanci, Zutica, Struzec, Ivanic Grad, Lendava, and others locations)	70
Do.	do.	do.	Refineries at Urinj and Rijeka	160
Do.	do.	do.	Refinery at Sisak	150
Pig iron		Metalurski Kombinat Zeljezara Sisak	2 blast furnaces at Sisak	235
Salt	cubic meters	Solana Pag, Solana Ante Festin	Marine salt: Pag Island	13
Steel, crude		SP MK Zeljezare Sisak d.d.	Plant at Sisak	75
Do.		Jadranska Zelezjara Split	Plant at Split	170

NA Not available.

TABLE 7
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2001	2002	2003	2004	2005
METALS					
Aluminum, metal, ingot, secondary	4,000	4,000	4,000	4,000	4,000
Cadmium, smelter output kilograms	73 ⁴	111 ⁴	75 ⁴	--	--
Copper, mine and concentrator output:					
Ore, gross weight thousand metric tons	1,500	1,200	1,200	--	5,000
Concentrate, gross weight	25,000	15,000	15,000	--	110,000
Concentrate, Cu content	9,000	5,600	2,567 ^r	--	21,800 ⁴
Gold kilograms	500	500	400	--	750
Iron and steel:					
Iron ore:					
Concentrate	10,000	10,000	10,000	10,000	10,000
Pellets	10,000	10,000	10,000	10,000	10,000
Agglomerate	5,000	5,000	5,000	5,000	5,000
Metal:					
Ferroalloys:					
Ferronickel (38% Ni), gross weight	10,300 ⁴	17,000 ⁴	15,000 ^r	14,000 ^r	15,000
Ferrosilicon	50,000	60,000 ^r	50,000	56,000 ^r	50,000
Total	60,300	77,000 ^r	65,000 ^r	70,000 ^r	65,000
Steel, crude	217,758 ^{r,4}	224,601 ⁴	291,354 ⁴	315,000 ⁴	350,000 ⁴
Semimanufactures	296,279 ^{r,4}	261,886 ⁴	305,111 ⁴	637,000 ⁴	650,000 ⁴
Lead:					
Mine output:					
Ore gross weight (Pb-Zn ore)	600,000	200,000	40,000	-- ⁴	--
Concentrate, Pb content	20,000	15,000 ⁴	5,000 ⁴	-- ⁴	--
Primary and secondary:					
Smelter	8,000	3,500	3,500	-- ⁴	--
Refined	19,700	19,800	8,000 ⁴	-- ⁴	--
Nickel, metal, Ni content of FeNi	3,100 ⁴	5,149 ⁴	5,629 ⁴	5,300 ⁴	8,100 ⁴
Silver kilograms	15,000	12,000	10,000	--	--
Zinc:					
Concentrate, Zn content	20,000 ^c	10,000 ^c	4,000 ⁴	-- ⁴	--
Metal, refined, primary and secondary	52,000	38,000	15,100 ⁴	-- ⁴	--
INDUSTRIAL MINERALS					
Cement thousand metric tons	630 ⁴	600	768 ⁴	820 ⁴	800
Clays, bentonite	25,000	25,000	25,000	25,000	25,000
Diatomite	5,000	5,000	5,000	5,000	5,000
Feldspar	20,449 ⁴	21,000	21,000	21,000	20,000
Gypsum:					
Crude	20,000	20,000	20,000	20,000	20,000
Calcined	3,000	3,000	3,000	3,000	3,000
Lime	500	500	500	500	500
Pumice and related materials, volcanic tuff	50,000	50,000	50,000	50,000	50,000
Sand and gravel, excluding glass sand thousand cubic meters	100	100	100	100	100
Stone, excluding quartz and quartzite:					
Dimension, crude square meters	150,000	150,000	150,000	150,000	150,000
Ornamental thousand cubic meters	300	300	300	300	300
Crushed and brown, n.e.s. cubic meters	5,000	5,000	5,000	5,000	5,000
Other thousand metric tons	26,000	25,000	25,000	25,000	25,000
Talc:					
Crude	800	800	800	800	800
Washed	557 ⁴	550	550	550	550
MINERAL FUELS AND RELATED MATERIALS					
Lignite thousand metric tons	8,106 ⁴	8,640 ⁴	8,360 ⁴	8,500 ⁴	8,200 ⁴
Petroleum, refinery products thousand 42-gallon barrels	6,000	6,000	6,000	6,200	7,000

^rRevised. -- Zero.

¹Estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Table includes data available through November 2006.

³In addition to commodities listed, common clay also is produced, but available information is inadequate to make reliable estimates of output.

⁴Reported figure.

TABLE 8
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity ^c
Cement	Azbestcementa "Usje" Preduzece za Proizvodnju Cementa	Plant at Skopje	2,190
Chromite, concentrate	Jugohrom, Hemijsko-Elektrometakurski Kombinat (HEK)	Concentrator at Radusa	150
Copper ore	Bucim, Rabotna Organizacija za Rudarstvo i Metalurgija za Baker	Mine and mill at Bucim, near Radovis	4,000
Ferroalloys	Jugohrom, Hemijsko-Elektrometalurski Kombinat (HEK)-Jegunovce	Plant at Jegunovce	80
Iron ore	Skopje, Rudnici i Zeljezarnica Skopje	Mines at Tajmiste, Demir Hisar, and Damjan	1,000
Lead metal	Zletovo, Topilnica za Cink i Olovo	Imperial smelter at Titov Veles	40
Do.	do.	Refinery at Titov Veles	40
Lead-zinc, concentrate	Sasa-Makedonska Kamenica Mine (Sase, Rudnici za Olovo i Cink)	Mill near Kamenica	65
Lead-zinc ore	Prepobotuvacki, Kombinat Zletovo-Sasa: Sase, Rudnici za Olovo i Cink	Mine near Kamenica	300
Do.	Zletovo, Rudnici za Olovo i Cink	Mine and mill near Probistip	700
Nickel: ¹			
Ore	Feni Industries	Mine and opencast mine near Kavadarci	2,300
Metal	do.	Ferronickel plant at Kavadarci	7
Steel, crude	Makstil A.D. Skopje (Duferco Group, 54.4%)	Plant at Skopje	260
Zinc metal	Zletovo, Topilnica za Cink i Olovo	Imperial Smelter plant and refinery at Titov Veles	65

¹Nickel in ferronickel.

TABLE 9
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005
METALS					
Aluminum:					
Gross weight:					
Alumina, calcined	200,660	237,396	239,739	245,005 ^r	250,000
Bauxite	610,000	612,000	540,000	610,000 ^r	600,000
Metal, ingot, primary and secondary	100,176	111,689	116,744	107,000	117,000
Copper:					
Mine and concentrator output:					
Ore:					
Gross weight					
					thousand metric tons
Cu content	7,123	7,968	5,714 ^r	5,495 ^r	6,000
Concentrate:					
Gross weight	150,000 ^c	185,000 ^c	102,000	95,000	97,000
Cu content	31,000	36,900	26,400	24,000	26,100
Metal:					
Blister and anodes:					
Primary	24,000	36,000	14,000 ^r	12,000 ^r	16,300
Remelted	35,000 ^c	6,700 ^{r,c}	3,600	1,100 ^r	6,000
Total	59,000	42,700 ^r	17,600 ^r	13,100 ^r	22,300
Refined:					
Primary	22,465	26,897	9,000	12,000	23,300
Remelted	10,000 ^c	9,000 ^c	5,029	7,000 ^r	6,000
Total	32,465	35,897	14,029	19,000 ^r	29,300
Gold, refined					kilograms
	--	858	363	400	400
Iron and steel, metal:					
Pig iron	461,000	485,000	635,000	994,000 ^r	1,000,000
Crude steel	598,000	596,000	569,199 ^r	1,167,000 ^r	1,286,000
Semimanufactures	801,000	877,000	926,000	950,000	950,000
Lead:					
Mine and concentrate output:					
Ore:					
Gross weight (Pb-Zn ore)	531,000	284,000	183,000	180,000	185,000
Pb content ^c	5,800	3,100	2,000	2,000	2,000
Concentrate:^c					
Gross weight	16,000	8,500	5,500	5,500	5,500
Pb content	5,200	2,800	1,800	900 ^r	1,800
Metal, primary and secondary, refined	--	200	500	800	--
Magnesium, metal ^c	1,500 ³	1,800	1,500	1,500	1,500
Platinum-group metals:^c					
Palladium					kilograms
	10 ³	10	8	8	8
Platinum					do.
	1 ³	1	1	1	1
Selenium	14,000	15,000 ^c	7,000	7,000 ^c	7,000 ^c
Silver	5,745	6,838	2,028	2,000 ^c	2,000 ^c
Zinc:					
Zn content of Pb-Zn ore ^c	15,000	9,300	7,500	7,500 ^r	8,500
Concentrator output, gross weight ^c	17,500	20,300	5,000	7,000 ^r	8,000
Zn content of concentrate ^c	5,988	6,900	1,900 ^r	2,000 ^r	3,000
Refined	13,467	1,478	62	4,000 ^r	20,000
INDUSTRIAL MINERALS					
Asbestos fiber, all grades	194	372	111	110 ^c	110 ^c
Cement					thousand metric tons
	2,418	2,396	2,075	2,240	2,200
Clays:					
Ceramic clay ^c	30,000	30,000	25,000	25,000	25,000
Fire clay:^c					
Crude	30,000	30,000	30,000	30,000	30,000
Calcined	10,000	10,000	10,000	10,000	10,000
Kaolin, crude	60,900	95,622	99,460	95,000 ^c	95,000 ^c
Feldspar, crude	4,451	7,813	3,045	3,500 ^c	3,500 ^c
Gypsum, crude	58,045	54,937	42,261	45,000 ^c	45,000 ^c
Lime					thousand metric tons
	467	468	402	400 ^r	400

See footnotes at end of table.

TABLE 9—Continued
SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005	
INDUSTRIAL MINERALS—Continued						
Magnesite:						
Crude	thousand metric tons	36	33	24	20	20
Caustic calcined ^e		2,500	2,500	2,000	1,500	1,500
Mica, all grades		303	426	185	200	200
Nitrogen, N content of ammonia		65,900 ^r	65,000 ^{r, e}	60,000 ^r	60,000 ^{r, e}	60,000 ^e
Pumice and related volcanic materials, volcanic tuff ^e		100,000	100,000	100,000	100,000	100,000
Salt, all sources		61,646	42,243	78,271	75,000	75,000
Sand and gravel, excluding glass sand	thousand cubic meters	1,967	2,074	1,507	1,500	1,500
Silica:						
Quartz sand		301,402	258,801	260,880	260,000	260,000
Glass		106,000	104,000	65,000	80,000	80,000
Sodium compounds:						
Caustic soda		7,584	6,787	7,450	7,000 ^e	7,000 ^e
Sodium sulfate ^e		800	800	800	800	800
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	84,000	103,000	69,000	70,000	70,000
Crushed and broken, n.e.s. ^e	thousand cubic meters	3,000	3,000	2,000	2,000	2,000
Other, stone blocks ^e	cubic meters	1,000	1,000	500	500	500
Sulfur, byproduct:^e						
Metallurgy	thousand metric tons	100	75	40	50	50
Petroleum	do.	1	1	1	1	1
Total	do.	101	76	41	51	51
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand metric tons	70	70	54	50	50
Brown	do.	376	423	397 ^r	352 ^r	350
Lignite	do.	32,936	32,995	34,543	35,192	35,000
Total	do.	33,382	33,488	34,994 ^r	35,594 ^r	35,400
Natural gas, gross production	million cubic meters	506	400	364	317	320
Petroleum:						
Crude, as reported	thousand metric tons	746	682	671	652	650
Refinery products	do.	1,793	2,369	2,380	2,300 ^e	2,300 ^e

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through November 2006.

²In addition to commodities listed, common clay and diatomite also are produced, and tellurium may be recovered as a copper refinery byproduct, but available information is inadequate to make reliable estimates of output.

³Reported figure.

TABLE 10
SERBIA AND MONTENEGRO: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Alumina		Kombinat Aluminijuma Titograd	Plant at Titograd, Montenegro	200.
Aluminum		do.	Smelter at Titograd, Montenegro	100.
Antimony, ores and concentrates		Zajaca, Rudarsko Tapioncarski Bazen	Mines and mills near Zajaca, Serbia	80.
Do.		do.	Mines and mill at Rajiceva Gora, Serbia	300.
Antimony, metal		do.	Smelter at Zajaca, Serbia	4.
Bauxite		Rudnici Boksita, Niksic	Mines in Montenegro at Kutsko Brdo, Zagrad, Biocki Stan, Durakov Dol, and other locations	650.
Cement		Becinska Fabrika Cementa	Plant at Beocin, Serbia	2,031.
Do.		Fabrika Cementa Novi Popovac	Plant at Popovac, Serbia	1,613.
Coal:				
Bituminous		Ibarski Rudnici Kamenog Uglja	Mines at Jarando and Usce, near Baljevac na Ibru, Serbia	250.
Lignite		SOUR Kolubara, Rudarsko Energetsko Industrijski Kombinat, RO	Opencast mines: Polje B and Polje D	10,000.
Do.		Kolubara Povrsinski Kopovi	Tamnaski Kopovi (also known as Kolubarski Rudnici Lignita), near Vreoci, Serbia	14,000.
Do.		SOUR Elektroprivreda Kosova, RO Kosovo, Proizvodnja Separacija i Transport Uglja	Opencast mines: Dobro Selo and Belacevac, near Obilic, Serbia	2,000.
Copper		Rudarsko Topionicki Bazen Bor (RTB Bor)	Smelter at Bor, Serbia	180.
Do.		do.	Electrolytic refinery at Bor, Serbia	180.
Do.		do.	Mine and mill at Bor, Serbia	5,000 ore.
Do.		do.	Mine and mill at Majdanpek, Serbia	15,000 ore.
Do.		do.	Mine and mill at Veliki Krivelj, Serbia	8,000 ore.
Lead, metal		Rudarsko-Metalursko-Hemijski Kombinat za Olovo i Cink Trepca (Trepca)	Smelter at Zvecan, Serbia	180.
Do.		do.	Refinery at Zvecan, Serbia	90.
Lead-zinc ore		do.	Mines at Ajvalija, Kopanaonik, Badovac; Trepca, Blagodot, Lece; Veliki Majdan, Tisovak; and Ksbnica, Rudnik, Suplja Stijena	5,000.
Do.		do.	Mills at Kriva Feja, Lece, Rudnik, Badovac, Leposavic, Zvecan, and Maravce, Suplja Stijena	3,160.
Do.		Hemijska Industrija Zorka: Brskovo, Rudnici Olova i Cinka	Mine at Brskovo, Montenegro	500.
Do.		Veliki Majdan Rudnik Olova i Cinka	Mine at mill near Krupanj, Serbia	250.
Magnesite, concentrate		Rudnici Magnezita "Sumadija"	Mine and plant at Sumadija, 20 kilometers northwest of Cacak, Serbia	120.
Do.		Rudnik i Industrija Magnezita "Strezovce"	Opencast mine at Beli Kamen, Strezovce, near Itiova Metrovica, Serbia	300.
Do.		do.	Sinter plant at Strezovce	40.
Do.		Magnohrom, Rudnik Magnezita "Magnezit"	Mine at Bela Stena, Baljevac na Ibru, Serbia	30.
Natural gas	million cubic feet	Naftaplin (Naftagas), RO za Istrazivanje, i Provozdnju Nafte i Gasa	Natural gasfields in Serbia Kinkinda and others	30,000.
Petroleum:				
Crude	thousand 42-gallon barrels per day	Naftagas, Naftna Industrija	Oilfields in Serbia: Kikinda and others	30.
Refined	do.	Naftagas, Naftna Industrija: Rafinerija Nafte Pancevo	Refinery at Pancevo, Serbia	110.
Do.	do.	Rafinerija Nafte Novi Sad	Refinery at Novi Sad, Serbia	28.
Pig iron		U.S. Steel Serbia	Blast furnace at Smederevo, Serbia	720.
Steel, crude		do.	Plant at Smederevo, Serbia	2,200.
Do.		HK Zeljezara Niksic AD	Plant at Nicsic, Montenegro	300.
Zinc, metal		Rudarsko Metalursko Hemijski Kombinat Olova i Cinka Trepca, Metalurgija Cinka	Electrolytic plant at Titova Metrovica, Serbia	40.
Do.		Hemijska Industrija Zorka	Electrolytic plant at Sabac, Serbia	40.

TABLE 11
SLOVENIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2001	2002	2003	2004	2005	
METALS						
Aluminum, ingot, primary	76,632	87,600	109,800	120,666	138,500	
Iron and steel, metal:						
Ferroalloys:						
Ferrosilicocalcium ^e	100	100	--	--	--	
Ferrosilicon ^e	9,000	9,000	9,000	9,000	9,000	
Crude steel from electric furnaces	462,000	481,000	543,000	548,000	585,000	
Semimanufactures	450,000	400,000 ^e	594,000	621,000	638,939	
Lead, refined, secondary	15,400	15,400	15,400	16,000	15,400	
INDUSTRIAL MINERALS						
Cement ^e	thousand metric tons	1,300	1,250	1,300	1,300	1,300
Clays:						
Bentonite		3,738	4,122	4,000 ^e	4,000 ^e	4,000 ^e
Ceramic clay, crude		2,500 ^e	2,000 ^e	2,261	1,819	1,800 ^e
Lime	thousand metric tons	1,434	1,636	1,500 ^e	1,500 ^e	1,500 ^e
Pumice and related materials, volcanic tuff ^e		40,000	40,000	40,000	40,000	40,000
Quartz, quartzite, glass sand ^e		200,000	200,000	200,000	200,000	200,000
Salt, all sources		107,755	128,212	125,000 ^e	125,000 ^e	125,000 ^e
Sand and gravel, excluding glass sand	thousand metric tons	11,510	10,897	11,000 ^e	11,000 ^e	11,000 ^e
Stone, excluding quartz and quartzite, crude:						
Dimension		45,000 ^e	6,858	12,603	10,667	15,262
Other ^e	cubic meters	10,000	10,000	10,000	10,000	10,000
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Brown coal	thousand metric tons	685	639	608	611	594
Lignite	do.	3,448	4,048	4,222	4,198	3,945
Natural gas	thousand cubic meters	6,100	6,000 ^e	4,900	5,040 ^r	4,335
Petroleum, crude		700 ^e	763	482	344	298

¹Revised. -- Zero.

²Estimated data are rounded to no more than three significant digits.

³Table includes data available through November 2006.

³In addition to commodities listed, common clay, coke, and petroleum products also were produced, but available information is inadequate to make reliable estimates of output.

TABLE 12
SLOVENIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Kidričevo Talum d.o.o.	Plant at Kidricevo	120
Aluminum	do.	Smelter at Kidricevo	72
Cement	Salonit Anhovo	Plant at Anhovo	1,120
Coal:			
Brown	SOZC, Rudarsko Energetski Kombinat E. Kardelj	Mines: Sasavski Rudnici at Trbovlje, Hrastnik, Ojstro, Senovo, and Kanizarnica	1,300
Lignite	Rudarsko Energetski Kombinat Velenje, RO Rudnik Lignita-Velenje	Mine at Velenje	5,000
Lead metal	Rudnik Svinca in Topilnica, Mezica	Smelter at Mezica	35
Do.	do.	Refinery at Mezica	30
Petroleum, refined	Industrija Nafta d.d. Zagreb (INA) Rafinerija Nafta Lendava	Refinery at Lendava	16
Pig iron	Združeno Podjetje Slovenske Železarne	Two blast furnaces at Zelazara Jesenice	300
Do.	Zelazara Store	Electric reduction furnaces at Store pri Celju	290
Steel, crude	Slovenske Železarne	Plant at Jesenica	400
Do.	do.	Plant at Ravne	162
Do.	do.	Plant at Store	140