THE MINERAL INDUSTRIES OF EUROPE AND CENTRAL EURASIA

By Richard M. Levine, Steven T. Anderson, Walter G. Steblez, David R. Wilburn, Chin S. Kuo, Harold R. Newman, and Glenn J. Wallace

The area of Europe and Central Eurasia treated in this volume encompasses territory that extends from the Atlantic coast of Europe to the Pacific coast of the Russian Federation and includes the British Isles and Iceland. Greenland, which is located in the northwestern Atlantic Ocean and the Sakhalin and the Kurile Islands, which are located off the Sea of Japan in the Pacific Ocean and which are political extensions of Denmark and the Russian Federation, respectively, are also treated in this volume.

In 2004, the countries of Central Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Macedonia, Poland, Serbia and Montenegro, Slovakia, and Slovenia) and the Baltic countries (Estonia, Latvia, and Lithuania) had completed the successful transition from authoritarian governments with central economic planning to open political systems with market-based economies. The transition among the countries of the Commonwealth of Independent States (CIS) (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan) was less complete, with some of these countries having made little progress and others having taken significant steps towards the establishment of open political systems and market-based economies.

The CIS was founded in 1991 by several republics of the former Soviet Union (FSU) and was later extended to include all the former Soviet republics except the Baltic states of Estonia, Latvia, and Lithuania. The CIS was established to provide a common economic space for the countries in the region. The CIS does not have supranational powers and all member countries have equal standing under international law. Although the member countries are pledged to economic integration, few actual measures have been taken to make the CIS a functioning integrated economic bloc similar to the European Union (EU) and, by 2004, stresses had emerged within the CIS that were undermining its stated purposes.

Economic integration in Western Europe evolved into the formation of the EU, which is a supranational entity that at yearend 2003 comprised Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom (EU15). The admission of new member countries has been one of the significant political programs of the EU. To gain membership, countries must fulfill political and economic requirements, such as achieve stability of the institutions that guarantee democracy, the rule of law, human rights, and respect for and protection of minorities; have a functioning market economy and the capacity to cope with competitive pressure and market forces within the EU; and be able to take on the obligations of EU membership, including adherence to the aims of political, economic, and monetary union.

The European Commission (EC) extended EU membership to the following 10 countries (EU10) in May 2004: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. The EC also continued negotiations with Bulgaria and Romania during the year (with expected accession to the EU in either 2007 or 2008), with Croatia and Turkey (with no exact time given for expected accession), and with other countries in the Balkans (in the preliminary stages of negotiation). The EU also attempted to support more democratic stability and economic development in CIS countries, such as Ukraine, through its European Neighborhood Policy (ENP) (European Commission, undated§¹).

In 2004, the consolidation of Western and Eastern Europe into an economic bloc, the EU, was fairly advanced. The admission of the EU10 into the EU during the year left the northern Balkan countries (Bulgaria and Romania) and much of the southern Balkan countries (Albania, Bosnia-Herzegovina, Croatia, Macedonia, and Serbia and Montenegro) outside of the EU. Although all the unattached Balkan countries sought membership in the EU, only Bulgaria and Romania achieved sufficient economic and political transformation to be considered for near-term membership (2007). The very much diminished European Free Trade Area (EFTA), which comprises Iceland, Norway, and Switzerland, remained closely associated with the EU.

The accession of the EU10 countries increased the EU population by about 75 million to a total of about 450 million, with Poland alone accounting for about 40 million more people. With the addition of the EU10, the population of the EU exceeded that of the United States by nearly 20%, in 2004, and its total gross domestic product (GDP) based on purchasing power parity exceeded that of the United States by about 5% compared with that of 2003 when the population of the EU was only slightly larger than that of the United States, and its GDP, slightly smaller.

Despite efforts at economic integration, large variations still existed among certain EU countries with respect to their per capita GDPs and rates of growth and unemployment, although not necessarily with the distribution that was expected before the expansion. From 1997 until 2005, the average real GDP of the EU10 countries grew by about 4%; the older member states of the EU (EU15) averaged only about 2.5% growth during the same timeframe. In 2004, the average unemployment rate in the EU10 was about 13.4%, but this was not much worse than the 8% unemployment for the EU15 during the year. Although

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

some labor and business migration took place, it proved to be only a marginal phenomenon with labor relocation rarely accounting for even 1% of the active working population of the host (EU10) country (European Commission, 2005a, p. 2, 7, 31-32; 2005§).

Some worst-case scenarios concerning the 2004 EU enlargement did not appear to hold through the end of 2004 and were further dispelled through 2005. Although the average level of administrative regulation of industry and state control was considered higher in the Czech Republic, Hungary, Poland, and Slovakia than in the EU15 in 2004, antitrust exemptions and legal barriers to competition in 2003 were already lower in the these four new member nations than in the older EU countries, on average. In 2004, the EU10 countries were considered likely to perform substantially better than the EU15, on average, in applying EU laws by the end of 2005. Through 2005, small transfers of funds from the older EU countries were made to ease the economic, political, and social transition for the new countries, but totaled only 0.15% of the annual combined GDP of the EU15 countries. The amount of such transfers to any EU10 country was kept well below the levels previously distributed to such countries as Spain and Ireland at the time they entered the EU. The EU laws included the Lisbon agenda of reforms for the EU that was approved in 2000 and was targeted at increasing economic growth, global competitiveness, and employment in the EU, with an overall objective of helping EU businesses compete more effectively with their American and Asian counterparts. Specifically regarding EU unemployment and the competitiveness of its industries, including its member countries' mineral industries, the Lisbon laws were adopted to encourage reform of rigid labor markets, generous pensions, and bloated welfare systems in the EU15 countries. Politicians and voters from the EU15 expressed their view that the EU10's lower wages and taxes, on average, constituted unfair competition between firms located in the newer versus the older regions of the expanded European Union (EU25) (Economist, The, 2004; European Commission, 2006a, p. 29, 47-48, 57-58, 67, 77; 2005§).

In 2004 and through 2005, competition from the EU10 appeared to encourage structural change throughout the EU that involved renewed efforts to cut costs and trim benefits at companies in the EU15 countries, including those firms involved in the EU15 countries' mineral industries. For the most part, the EU10 countries did not appear overly aggressive in lobbying for major shares of the EU subsidy for agriculture, and did not appear to be in favor of the level of state intervention in industries that still permeates the economies of most of the EU15 countries. The EU10 placed more emphasis on working toward structural change of the economy and pursuit of new markets, rather than obtaining industrial and agricultural subsidies. The EU10 appeared to favor more open markets, with trade (exports plus imports) representing 93% of the new countries' GDPs, on average, compared with an average of 55% for the countries of the EU15.

A major function of the EU has been to remove barriers to trade in an attempt to create a single market and to develop a common set of policies that range across different sectors of the economy. New and prospective EU members must adhere to the

EU's environmental and commercial standards. No common policy, however, was in place regarding the mineral extractive industries; tax harmonization with the EU15, increased state intervention, or increased regulation of industry would severely dampen the burgeoning global competitiveness of the EU10 economies. The mineral industries of the EU10 countries plus Bulgaria and Romania (in 2007) were expected to increase both employment and production of the mineral industry of the EU, proportional to the total number of employees and GDP of the EU. Mine production of metals was expected to increase the most relative to the 2004 level of EU production, but production of industrial minerals and mineral fuels was also expected to play a greater role in the expanding EU economy (Economist, The, 2004; European Commission, 2006a, p. 60; Raw Materials Supply Group, 2006, p. 7, 11).

Acknowledgments

The U.S. Geological Survey acknowledges and thanks the following foreign Government agencies, international institutions, and private research organizations for providing mineral-production statistics, basic economic data, and other mineral-related information:

- Albania—INSTAT (Institute of Statistics);
- Armenia—National Statistical Service;
- Azerbaijan—State Statistical Committee of Azerbaijan Republic;
- Belarus—Ministry of Statistics and Analysis of the Republic of Belarus;
- Croatia—Statistical Information and Documentation Division;
- Czech Republic—Czech Geological Survey, Ministry of Industry and Trade;
- Denmark—Danmark og Gronlands Geologisk Undersogelse;
 - Estonia—Geological Survey of Estonia;
 - Finland—Statistics Finland;
- Germany—Bundesanstalt fuer Geowissenschaften und Rohstoffe;
- Hungary—Magyar Köztársaság Gazdasági És Közlekedési Minisztérium Magyar Geológiai Szogálat (Hungarian Geological Survey);
 - Iceland—Statistics Iceland;
 - Ireland—Geological Survey of Ireland;
 - Kazakhstan—Agency on Statistics;
 - Kyrgyzstan—Ministry of Foreign Affairs;
 - Lithuania—Industrial Statistic Division;
 - Luxembourg—Central Statistical Service;
 - Poland—Central Statistical Office;
 - Portugal—IGM-Division de Statistical Studies;
 - Romania—National Institute of Statistics;
 - Slovakia—Statistical Office;
 - Slovenia—Slovenian Government;
 - Ukraine—State Statistics Committee; and
 - United Kingdom—British Geological Survey.

General Economic Conditions

Because of the very different path of development in Western Europe (now the EU and the EFTA) compared with that of Central Eurasia (now the CIS) and other centrally planned economy countries after World War II, an economic asymmetry between these two areas emerged that was particularly apparent in the mineral sector. This asymmetry framed the initial commercial relationship in the minerals sphere between the two areas following the dissolution of the Soviet Union, and it still persisted in 2004. The EU continued to import raw materials from, toll-smelt raw materials in, sell equipment and technology to, and invest in mineral development projects in the as-yet unaffiliated countries of the Balkans and the CIS; these commercial activities, however, were largely not reciprocated by the countries with formerly centrally planned economies.

The countries of the EU and the CIS are substantial participants in the world mineral economy and occupy important roles as suppliers and consumers of all major mineral commodities. In 2004, the EU continued to be a major world processing and consuming region and its role in the world mineral industry continued to be one of processing and consuming rather than mining. Central Eurasia remained a major world supplier of mined and processed minerals, but its consumption of these commodities remained at a low level. The unaffiliated countries of the Balkans played a much lesser role in both the supply and consumption of most mineral commodities.

As a major world mineral processing and consuming area, the EU remained a determinant of world demand for all mineral commodities. With the near exhaustion of much of its mineral reserves and the decline in its role as a world mine producer of minerals, the EU continued to produce metals, which included aluminum, copper, lead, steel, and zinc, using largely imported raw materials and secondary materials; its mineral processing and manufacturing industries accounted for a significant share of the world production of semimanufactured and fabricated ferrous and nonferrous metals. Germany remained the EU's dominant smelter and refiner of most metals.

In 2004, the mineral industries in Western Europe were either maintaining a stable level of output or reducing it. A decrease in output in many mining and processing sectors was expected in the next decade as reserves are depleted and processing facilities and plants age and are neither renovated nor replaced. Despite the diminution of Western Europe's importance as a mining region, Western Europe is an important world financial center and the headquarters of such major global mining transnationals as Anglo American S.A., Rio Tinto plc, and BHP Billiton plc. Also, Western Europe played a significant role in the extraction and processing of certain industrial minerals and mineral fuels worldwide. Significant petroleum and natural gas resources have been developed in the North Sea, and there were also significant coal reserves. Germany remained a significant mine producer of a number of industrial minerals and coal.

Some metals were mined in the EU15 (mainly iron ore and copper), but mine production of metals was not globally significant. The key issue with the mineral industry for EU countries was the need to secure supplies of metallic mineral raw materials (such as concentrates, ores, and scrap) for their

metal refining and processing industries. The accession of Poland, in particular, increased the EU's capacity to mine coal and copper and to produce steel, but the metal processing sectors of the mineral industries of the EU25 countries still remained heavily dependent upon imports of mineral materials. The EU15 did still mine and quarry a globally significant amount of industrial minerals, including feldspar, kaolin, marble, potash, salt, and sand, although the region was still not economically self-sufficient in any of them. The EU15 accounted for about 20% of world production of industrial and construction minerals and was among the world's leading producers of feldspar, kaolin, and natural stone. In 2004, the EU was considered to be somewhat enhancing its global stature in metal mining as a result of extensive exploration for metal deposits in Ireland and Scandinavia and on the Iberian Peninsula (Enterprise Europe, 2000, p. 18-19; Raw Materials Supply Group, 2006, p. 5-6).

The EU continued to secure mineral raw materials from major producing countries in Africa, Asia, and Latin America, as well as in Central Eurasia. Natural gas and petroleum imports from Russia were particularly important. To this end, a common economic space with Russia was very important. EU-Russia tariffs were already considered to be acceptably low, but differences in Russia's regulatory framework (industrial policy and regulations on industrial products) from that of the EU was viewed as an important source of nontariff barriers to freer trade in industrial products, including minerals. In attempting to create a more common economic space for industry, Russian authorities appeared interested in focusing on certain industrial sectors that included metals and some mineral-based chemicals. The EU interest in cooperation on enterprise and industrial policy issues in Russia was to align environmental, technical, and other regulations; manage the impact of restructuring industry to be more market based; help establish a better institutional environment for competitive business activity and investment; and possibly extend to Russia the EU support network for the EU's small- and medium-sized enterprises, which accounted for the vast majority of EU mining companies. Satisfaction of most of these objectives of this strategic partnership was expected to enable Russia to become a member of the World Trade Organization (WTO) (Enterprise Europe, 2005, p. 21).

The EU's negotiations concerning a common economic space with Russia were considered part of a strategic partnership strategy and were not directly part of the EU's ENP, although Russia was still considered a neighbor by the EU and the provisions of the two brands of policy appeared to be quite similar. The existence of the ENP does not imply impending negotiations for EU enlargement into those countries covered by the policy, nor does it offer an accession perspective. The key elements of the ENP are the ENP Action Plans, which were expected to be mutually agreed between the EU and Moldova and Ukraine in 2005. In 2004, negotiations of ENP Action Plans also began between the EU and Armenia, Azerbaijan, and Georgia, among the countries analyzed in this report. As an example, the ENP Action Plan with Ukraine was expected to start in 2005 and be implemented through 2008; the main economic objective was to continue progress in the establishment of a fully functioning market economy in Ukraine that would include market price-formation, control of state aid, and a legal environment that ensures fair competition between economic operators (including those in the mineral industry). Fair competition was to include equitable participation of companies in trade opportunities and in obtaining investment (foreign, other private, or public). Although exact parameters were not set in this plan, the EU also pledged to aid the Government in a large-scale privatization of Ukraine's state-run industries, including the state-run components of the country's mineral industry (European Commission, 2006b, p. 133-138).

In the CIS, Kazakhstan, Russia, and Ukraine were the main mineral producing countries. Russia, which occupied 75% of the territory of the CIS, was by far the largest country in the CIS in both population and territory and had the leading mineral producing sector. Azerbaijan, Kyrgyzstan, Uzbekistan, and several other CIS countries also were important producers and processors of minerals. According to estimated 2004 data, Russia ranked first in the world in the production of asbestos, diamond, mica scrap and flake, natural gas, nickel, palladium, and titanium sponge; second in the world in the production of aluminum, mica (sheet), pig iron, platinum, potash, crude petroleum, silicon, and mine output of tungsten; and among the top five world producers of such other mineral commodities as mine output of arsenic, boron, cobalt, fluorspar, gold, indium, iodine, iron ore, lime, peat, phosphate rock, sulfur, and vermiculite, and of ferroalloys, magnesium compounds and metal, nitrogen, pig iron, crude steel, and vanadium..

Kazakhstan was a significant producer of such mineral products as arsenic, barite, beryllium metal, bismuth, cadmium, chromite, copper, ferroalloys, lead, titanium sponge, uranium, and zinc. Ukraine was a significant producer of such mineral products as ferroalloys, iron ore, manganese ore, pig iron, crude steel, and titanium raw materials. Other CIS countries were significant world producers of one or more mineral commodities, including Armenia (molybdenum), Azerbaijan (oil), Belarus (potash), Kyrgyzstan (antimony metal, gold, mercury ore and metal), Tajikistan (aluminum), Turkmenistan (natural gas), and Uzbekistan (gold, uranium), and all the CIS countries produced a range of other mineral commodities.

The three main mineral producing countries in the CIS (Kazakhstan, Russia, and Ukraine) all experienced economic growth in 2004. The Russian economy continued to grow at a rapid rate, with GDP increasing by 7.1% in 2004 compared with that of 2003, and industrial production increasing by 7.3%. Growth in real incomes was estimated to be 7.8%. Foreign investment reached \$9.4 billion, which was a record level and in part contributed to inflationary pressures. Consumer price index inflation was 11.7%, which exceeded the planned target of 10% (World Bank, 2005§).

The Russian Federal budget was 4.2% of the GDP, which was a record high and generated a budgetary surplus of an estimated 687 billion rubles. In 2004, Russia's trade balance was an estimated record \$87.2 billion surplus spurred by high prices for Russia's commodity exports. Despite these positive indicators, the Russian economy experienced an apparent slowdown in industrial production in 2004, which appeared to be related to more-rapid increases in production costs than productivity as well as to capacity constraints and remaining high uncertainty

in relations between Government and business (World Bank, 20058).

In 2005, in accordance with a new law on subsurface resources with respect to development of strategic resources, Russia's Ministry of Natural Resources named five deposits as strategic deposits. Strategic deposits may have oil reserves of more than 150 Mt, gas reserves of more than 1 trillion cubic meters, and copper reserves of more than 10 Mt of ore. Auctions that offer the rights to develop deposits that have been declared strategic deposits will not be open to any Russian companies or persons that form part of a group that includes foreign companies or persons.

Although in 2004 Russia's metallurgical sector profited from steep increases in world metals prices that more than compensated for cost increases, the country's metallurgical sector continued to show a declining growth trend. A number of analysts have said that the Russian metals industry has experienced increasingly constrained capacity in recent years (World Bank, 2005§).

The oil sector also experienced a slowdown in growth and investment despite exceptionally high world market prices. In the oil sector, the link between higher prices and profits was weakened by very high marginal taxation. In addition, the slowdown in growth in the oil sector and in some other parts of the economy may have been a repercussion of the prolonged Yukos affair in which Russia's leading oil company was dismantled and the head of the company imprisoned; this action led to perceptions of potential state retribution against private businessmen and of greater discretionary state intervention in economic affairs to the disadvantage of private business (World Bank, 2005§).

Despite these political uncertainties, the flow of foreign direct investment (FDI) to Russia continued, with FDI increasing to an estimated record \$9.4 billion in 2004 compared with \$6.8 billion in 2003. Cumulative per capita foreign investment inflows to Russia (about \$260), however, were quite low relative to most other transitional countries (World Bank, 2005§).

Although Russia has experienced impressive growth, stabilization, and poverty reduction for 5 consecutive years, major concerns for Russia persisted concerning the sustainability, or even the desirability, of recent macroeconomic developments because accelerated growth since 2003 was linked to sharp increases in prices for commodity exports, particularly oil and gas. Concern was raised about the competitiveness of Russian manufacturing, which could suffer further owing to the real appreciation of the ruble, higher resource prices, rapid wage growth, and the steady decrease in excess industrial capacity (World Bank, 2005§).

Another area of concern for Russia, according to a report by the World Bank, was that a number of economic studies have suggested that resource abundance is not necessarily an advantage in economic development. In recent years, economic development has taken place in a number of resource-poor countries, which include those of East Asia, while many relatively resource-rich countries in Latin America have performed less impressively. Besides being vulnerable to declines in commodity prices, the onset of the so-called "Dutch disease" is a potential disadvantage of resource abundance.

Dutch disease could happen if large foreign inflows from resource exports exert upward pressure on the real exchange and undercut the international competitiveness in some areas of the manufacturing sector and possibly discourage risk taking in the manufacturing sector. Attempts to improve the performance of the Russian economy were focusing increased attention on these potential problems. With the sharp rise in commodity prices, the ruble continued to appreciate in real terms, thereby increasing competitive pressures on the manufacturing and other tradable goods sectors of the economy (World Bank, 2005§).

Nevertheless, a consensus does not exist among economists that resource abundance is a major liability for the diversified economic development of such a large country as Russia, particularly if the country maintains an appropriate economic policy and realizes key reforms. Resource abundance could be an advantage for some areas of manufacturing in Russia. Russia's advantages in natural gas production and distribution and its ample gas reserves could help manufacturing firms obtain cheaper gas and cheaper thermal electric power generation than they could obtain elsewhere because the domestic rate for Russian gas is less than one-half of current world market prices in Europe or Asia and is significantly lower than in other CIS countries. Access to cheaper gas could offer Russian manufacturing firms a potentially strong comparative in the medium and longer term (World Bank, 2005§).

In the 1990s, Ukraine experienced 8 straight years of sharp economic decline in which the standard of living for most citizens declined by more than 50%; this decline led to widespread poverty. Since 2000, however, economic growth has averaged almost 9% per year, reaching 9.4% in 2003 and 12.5% in 2004; personal incomes also were rising and the hyperinflation of the early post-Soviet period had eased. Ukraine's currency, the hryvnia, which was introduced in September 1996, remained relatively stable. Despite the economic growth of recent years, however, Ukraine's long-term economic prospects depend on the acceleration of market reforms. The economy continues to be affected by excessive Government regulation, corruption, and lack of law enforcement (U.S. Department of State, 2006§).

With rich farmlands, a well-developed industrial base, a highly trained labor force, and a good educational system, Ukraine has many components of a major economy. The country also is rich in mineral resources, particularly iron ore, manganese ore, titanium ore, and industrial minerals. It also has a major ferrous metals industry and produces ferroalloys, pig iron, steel, and steel pipe. Its chemical industry produces coke, mineral fertilizers, and sulfuric acid. Manufactured goods include airplanes, diesel locomotives, metallurgical equipment, tractors, and turbines. It also is a major producer of grain, sunflower seeds, and sugar and has a broad industrial base, including much of the FSU's space and rocket industry. Although its oil and natural gas reserves are small, Ukraine has large coal resources and is one of the world's leading energy transit countries, with pipelines that transport Russian and Caspian oil and gas across its territory (U.S. Department of State, 2006§).

Ukraine's foreign investment law has allowed foreigners to purchase businesses and property, to repatriate revenue and profits, and to receive compensation in the event that property is nationalized by a future government. However, complex laws and regulations, poor corporate governance, weak enforcement of contract law by courts, and corruption have inhibited large-scale FDI in Ukraine. Although the country has a functioning stock market, the lack of protection for minority shareholder rights has severely restricted investment activities. As of October 1, 2004, total FDI in Ukraine was about \$7.72 billion, which, at \$162 per capita, was one of the lowest figures in the region (U.S. Department of State, 2006§).

Countries of the FSU were important trading partners for Ukraine, especially Russia and Turkmenistan for energy exports. Ukraine's trade was becoming more diversified. Europe received more than one-third of Ukraine's exports, and about one-quarter of Ukraine's exports went to Russia and the other CIS countries. Exports of machinery and machine tools were rising relative to steel, which still constituted more than 30% of exports. Ukraine imported 90% of its oil and most of its natural gas. Russia was Ukraine's main supplier of oil, and Russian firms owned and/or operated the majority of Ukraine's refining capacity. Natural gas imports also came from Russia, with some gas supplied in exchange for Ukraine transporting Russian gas to Western Europe (U.S. Department of State, 2006§).

In 1992, Ukraine became a member of the International Monetary Fund and the World Bank. It is a member of the European Bank for Reconstruction and Development (EBRD) but not a member of the WTO. Ukraine applied for membership in the WTO in 1995. Although progress in acquiring membership has been slowed, it appeared to pick up momentum in early 2004 and the country made accession to the WTO by the end of 2005 a priority (U.S. Department of State, 2006§).

Kazakhstan is the largest country in area in Central Asia and one of the most sparsely populated in the world. The country has considerable mineral resources and vast areas of arable land. Education is close to universal. The country has made significant progress in transforming its economy since the breakup of the Soviet Union. Following the 1998 regional financial crisis, the country's economic performance has significantly improved (World Bank, 2006§).

Economic recovery in Kazakhstan started in 2000 and continued through 2004. The recovery was led primarily by the oil sector. The real GDP grew by 9.4% in 2004 compared with 9.3% in 2003. The Government created conditions designed to attract large amounts of FDI in its oil sector, which has become the driving force of the economy. Oil extraction and oil-related construction, transportation, and processing accounted for more than 16% of the GDP in 2004, and fuel and oil products made up 63% of exports. The value of manufacturing exports, however, has been stagnant since 1997 (World Bank, 2006§). As a result of increased oil exports and significant capital inflows, the currency appreciated against most currencies in 2004, and this trend was expected to make improving the competitiveness of domestic goods and services produced by the nonoil sectors an even greater challenge (World Bank, 2006§).

Kazakhstan implemented a number of structural reforms, including those of the pension system, public sector resource management, electricity sector, and banking. It has managed prudently the early phase of its oil windfall with part of

the revenues saved in the National Fund of the Republic of Kazakhstan established in 2000 to manage oil revenues. The Government has since focused on the optimal size of the National Fund. The Fund's balance was more than \$5 billion, which has contributed to macroeconomic stability. Kazakhstan was trying to improve its legal and regulatory frameworks and standards in an effort to join the WTO in the near future (World Bank, 2006§).

Oil production will continue to be the major activity driving the economy of Kazakhstan. Oil production is expected to double by 2010. Future economic prospects are considered bright if the Government continues to manage increasingly large oil revenues so as to avoid excessive volatility in key macroparameters and the so-called Dutch disease. The Government appears to understand the risks of heavy dependence on oil and is developing ways to achieve greater competitiveness and diversification of the economy with emphasis on basic infrastructure, competition, human capital, institutions, and investment climate (World Bank, 2006§).

Exploration

Exploration budgets for Europe and Central Eurasia increased in 2004 to about \$340 million from the 2003 estimate of about \$180 million, based on data provided by Metals Economics Group (MEG) (Metals Economics Group, 2004). In 2004, Europe and Central Eurasia accounted for about 9.7% of the world exploration budget on a percentage basis (Cox and Goulden, 2005§). Much of this activity was focused in Finland, Russia, Sweden, and Turkey.

Based on data collected for this summary, Finland, Sweden, and Turkey each accounted for about 8% of the reported MEG regional budget and Russia, for about 6% (Metals Economics Group, 2004). European mineral exploration focused on gold (60%), nickel (12%), copper (9%), and diamond (8%). Exploration activity in the CIS focused on gold (64%), base metals (9%), and platinum-group metals (PGM) (9%). Because of strong metal prices, many former mining areas of Europe were being reevaluated with newer geophysical methods; areas rich in base-metal sulfides were being reevaluated for PGM potential.

Russia and the other states of the CIS also have become a focus for minerals exploration, but, like China, the region presents both opportunities and risks. Based upon site data collected for this summary, exploration activity in this region was greatest in Russia and Kazakhstan, primarily for base metals, diamond, and gold. Russian gold deposits typically possess larger resource potential than the world average, but generally have lower grades and require special processing because of a greater frequency of hard refractory ore (Leskov, 2004). Detailed historical data on many sites collected under the Soviet system are often available, but differences in resource nomenclature add to the difficulty in assessment by foreign companies. In addition, accessibility and climate conditions can pose risks to deposit development. BHP Billiton Ltd. and De Beers SA were actively exploring for diamond in Russia, but exploration activity was preliminary.

In Russia, gold reserves at existing enterprises were being depleted, and access to licenses for exploration and mining of

small deposits could no longer be obtained locally but were issued by the Ministry of Natural Resources. The development of a number of major deposits continued to be postponed, most notably that of the Sukhoy Log deposit in the Irkutsk oblast that has reserves of more than 1,000 metric tons (t) of gold.

Despite the temporary lull in the growth of gold mining, the expansion of activities of the major gold mining companies acquiring exploration and development rights and foreign firms investing in gold development were expected to lead to a significant increase in Russian gold output. Foreign firms actively investing in the Russian gold mining sector in 2004 included Rio Tinto Ltd. of Australia; Barrick Gold Corp., Bema Gold Corp., Consolidated Puma Minerals Corp., High River Gold Mines Ltd., and Kinross Gold Corp. of Canada; and Minco PLC of Ireland.

Environment

Environmental protection continued to be a major issue. Environmental laws and regulations had been passed and largely implemented during the 1980s and 1990s in Western Europe, and most industrial enterprises, including those in the mineral sector, were obligated to meet established standards for effluent discharges into the environment. Meeting these environmental standards was among the major criteria for accession by new member countries into the EU. The environmental situation in Central Europe, the Balkans, and Central Eurasia at the start of their transition to market-based economic systems revealed a landscape of highly polluting heavy industries that, in many cases, posed serious health concerns. This was not owing to an absence or lack of environmental laws in the transitional economy countries but rather to very little effort being expended by the former regimes in these countries to enforce the existing pollution laws or, in some cases, to correct confusing and sometimes contradictory laws and regulations. Although the discharge of harmful pollutants from the mining and mineral processing sector decreased during the early 1990s in several Central European and Central Eurasian countries, this was largely the result of a sharp decline in production during that period. More recently, the new applicants for EU membership from this area have been making serious efforts to improve environmental regulatory processes and enforcement. Environmental concerns in the Czech Republic and Poland, for example, have prevented the development of gold and leadzinc deposits. The EU10, which included the former centrally planned economy countries of Central Europe, had to comply with all the EU's environmental regulations and policies by the time of their EU accession. Romania, which was scheduled to accede to EU membership in 2007, had undertaken, under the auspices of the World Bank, an extensive study of mine closures and corresponding environmental reclamation (World Bank, 2006).

Russia's legacy of environmental problems that stem from the Soviet Union's emphasis on industrial production include severe air, water, and soil pollution and radioactive contamination that is the result of emissions and discharges from facilities that produced or handled radioactive materials. Despite the large economic contraction that followed

independence, the country's economy was still heavily reliant on extractive industries. In its transition to a market economy, the Russian Government appeared to be more disposed toward promoting economic growth than to protecting the environment (U.S. Energy Information Administration, 2004§). Nevertheless, the environment remains an important issue, and the country's Environmental Protection Law and the Law on Ecological Expert Review were passed since Russia became independent. These laws prohibit the financing or implementation of any project that could have a potentially harmful effect on the environment without an environmental impact assessment, which must be prepared by the project sponsor. The Environmental Protection Law does permit a company to discharge hazardous substances after it obtains a permit and subject to the periodic payment of a fee based on the type and amount of the pollutant (U.S. Energy Information Administration, 2004§).

Russia signed the United Nations Framework Convention on Climate Change on June 13, 1992, and then ratified it on December 28, 1994. On March 11, 1999, Russia signed the Kyoto Protocol, which mandates specific commitments by countries to reduce their emissions of greenhouse gases (GHG) by an average of 5.2% below 1990 levels by between 2008 and 2012. The Russian Government ratified the Protocol in November 2004, which brought the international agreement into effect (United Nations Environment Programme, 2004§). Under the terms of the climate change agreement, Russia is not required to cut its emissions because it was classified as a country in transition; rather, Russia must maintain its carbon dioxide emissions in the 2008-12 period at the same level as that of 1990. Owing to the significant reduction in carbon dioxide emissions in the immediate post-Soviet era, Russia was not expected to have difficulty fulfilling its commitments under the Kyoto Protocol. Moreover, the country could benefit from an emissions trading scheme under the Protocol because Russia appears to have excess emissions credits to sell to other countries (U.S. Energy Information Administration, 2004§).

Single-source pollution is a major contributor to Russia's air pollution problem, as most Russian powerplants are old and lack modern pollution control equipment and produce large amounts of toxic emissions and waste. Several major cities are threatened by these problems as are such delicate ecosystems as Lake Baikal, which is the world's largest freshwater lake. Lake Baikal, which is a UNESCO World Heritage site, contains approximately 1,500 indigenous species of flora and fauna. The lake is threatened by runoff and air pollution from a cellulose production plant on one of the lake's major tributaries and a coal-fired powerplant on another (U.S. Energy Information Administration, 2004§).

Although Russia's industrial sector is responsible for much of the country's air pollution problems, nonpoint pollution from motor vehicles is playing an increasing role. Motor vehicles are subject to only minimal environmental regulations, and automobile emissions, which include lead, carbon monoxide, and nitrogen oxides, are major sources of air pollution (U.S. Energy Information Administration, 2004§).

The oil and gas extraction industries contribute to the air pollution problem. Small-scale accidents, pipeline leakage,

and tanker spills have contaminated many areas of Russia. Oil pipelines in such areas as the Tyumen region and the Khanty-Mansiysk Autonomous District have leaked significant amounts of oil, and serious health problems from the oil pollution have been reported in the more-contaminated areas. The most severe problems are found in Chechnya. An estimated 30 million barrels of oil have leaked into the ground from the region's black market "pirate" oil industry. In addition, since the dissolution of the Soviet Union, thieves have tapped into pipelines in Chechnya and stolen large quantities of oil from reserves at refineries in Grozny. According to Russian military ecologists, an estimated 15,000 "mini-refineries" have been built; residual refining wastes from these mini-refineries have been dumped with little regard for the environment and have contaminated the ground and water supplies, rivers, and fish. Furthermore, oil pollution from Chechnya could spread into the Caspian Sea, which is already polluted from oil and gas waste, petrochemical industry discharges, and agricultural runoff (U.S. Energy Information Administration, 2004§).

Environmental groups were protesting planned oil and natural gas pipelines that would transport mineral fuels from eastern Siberia to Asian markets, claiming that Russian officials were ignoring the protected status of the Siberian Plateau (Ukok Plateau), which covers parts of China, Kazakhstan, Mongolia, and Russia. New road and pipeline projects will entail not only enormous construction and maintenance costs, but they also will have a major environmental impact because they would be routed through highland marshes, tundra, permafrost areas, mountain passes, and elevations of up to 1.6 miles. A proposed oil pipeline from Angarsk in eastern Siberia to Daqing, China, was put on hold in 2003 after the Natural Resources Ministry ruled that the proposed route would violate Russia's environmental regulations. An oil pipeline from Angarsk to the Russian Pacific coast at Nakhodka was proposed and may be built instead of the pipeline to China (U.S. Energy Information Administration, 2004§).

In 2004, 10 nuclear powerplants with 30 reactors were operating in Russia, some of which are first generation graphitemoderated RBMK (Reactor Bol'shoy Moshchnosti Kanalniy) reactors similar to the ones involved in the major accident at Chernobyl in Ukraine. The RBMK reactor design is considered by many to be obsolete and fundamentally flawed as it lacks a containment dome. Nevertheless, Russia is seeking to extend the operating life of several RMBK reactors (U.S. Energy Information Administration, 2004§). Although the Russian nuclear industry continues to experience numerous accidents, maintenance at nuclear powerplants has improved in recent years and security against terrorist attacks has increased with the cooperation and financial assistance of the United States. Russia plans to increase the country's nuclear capacity by building 40 new reactors by 2030 (U.S. Energy Information Administration, 2004§).

Russia's environmental health is threatened by nuclear waste from both civilian and military nuclear power installations. In addition, in 2001, the Russian Parliament approved legislation that allows the storage of foreign nuclear waste on Russian soil with atomic energy authorities claiming that between 10,000 and 20,000 t of high-level nuclear waste could be imported

for storage and reprocessing in a decade. The storage plan is projected to earn the country \$20 billion in foreign revenues during the 10-year period that the Russian Government has said it plans to use to clean up the environment. Environmental groups have opposed Russia's long-term storage plans and neighboring states have expressed safety concerns regarding nuclear waste traveling close to their borders (U.S. Energy Information Administration, 2004§).

Russia's use of renewable energy sources, with the exception of hydropower, remains low relative to its consumption of fossil fuels. Hydropower accounts for about 20% of the total installed electricity-generating capacity. About 75% of Russia's hydroelectric capacity is located at 11 power stations with more than 1,000 megawatts (MW) of capacity each. These include the 6,400-MW Sayano-Shushenskaya powerplant in the Krasnoyarsk Province, which is the country's largest powerplant. Russia is building a number of very large hydropower projects in the Russian Far East, including the 3,000-MW Boguchansk pland in Krasnoyarsk and the 2,000-MW Bureya hydropower plant (U.S. Energy Information Administration, 2004§).

The Kamchatka Peninsula in the Russian Far East has rich geothermal resources, which could potentially provide an estimated 380 to 550 MW of geothermal capacity. The first phase of the 200-MW Mutnovskaya geothermal powerplant on the Kamchatka Peninsula was commissioned in 2002. The EBRD provided approximately \$100 million in financing for the project (U.S. Energy Information Administration, 2004§).

As prices for mineral products have increased in recent years, international and domestic investors are increasingly seeking to develop mineral resources on lands where Russia's indigenous peoples reside. In response, more nongovernmental organizations (NGOs) in Russia's Far East and Siberia regions, including NGOs of indigenous peoples, have been monitoring and trying to mitigate the effects of past, current, and future mining projects on the traditional way of life of indigenous peoples. An NGO, Pacific Environment, issued a report on the effects of mining on indigenous peoples in this region. Although Pacific Environment cited prominent examples of mining impacts on indigenous peoples in Siberia and the Russian Far East, a comprehensive review of the relationship between mining projects and Russia's indigenous peoples has not yet been compiled (Jones, 2005§).

Kazakhstan inherited significant environmental problems related to past military, industrial, and mining activities. It also faces land degradation, desertification, and water scarcity. The National Environmental Action Plan for Sustainable Development prepared in 1999 proposed a number of remedial investments, which were being undertaken by the Government. The World Bank has supported the Government's activities through the implementation of four ecological projects that address the management of drylands, preservation of the northern part of the Aral Sea, cleaning up the pollution of river and underground water, and the environmental rehabilitation of an oilfield (World Bank, 2006§).

Radioactive and toxic chemical sites associated with former defense industries and test ranges are scattered throughout Kazakhstan and pose health risks for humans and animals.

Industrial pollution also is severe in some cities. Two main rivers that flow into the Aral Sea, which had been the world's fourth largest inland sea, were diverted for irrigation, which has caused major portions of the Aral Sea to dry up and has exposed a harmful layer of chemical pesticides and natural salts; these substances are picked up by the wind and blown about in dust storms. Pollution also is severe in the Caspian Sea; it has been caused in part by the overuse of agricultural chemicals and salination from poor infrastructure and wasteful irrigation practices (Embassy of the Republic of Kazakhstan, undated§).

Ukraine has significant environmental problems, especially those that have resulted from the Chernobyl nuclear powerplant accident in 1986. In accordance with its previously announced plans, Ukraine permanently closed the Chernobyl Atomic Energy Station in December 2000. Design work and structural improvements to the "sarcophagus" erected by the Soviet Union following the accident were largely complete. A construction contract on the new shelter to be built around the sarcophagus was expected to be awarded by the end of 2004 (U.S. Department of State, 2005§).

In February 1992, the Ministry of Environment and Natural Resources of Ukraine was established as the legal successor of the Ministry of Environment and Nuclear Safety of Ukraine. The Ministry comprises the Department of Planning, Coordination and Development; the Administrative Department; the Environment Protection Department; the Department of Protection, Use and Restoration of Natural Resources; the Department of Geology and Mineral Resources Utilization; the Hydrometeorological Service and Monitoring Department; and the Department of Geodesy, Cartography and Cadastre (Ministry for Environmental Protection of Ukraine, 2006§).

The Ministry introduced a pollution fee system, which levies taxes on air and water emissions and solid waste disposal. Although the resulting revenues are channeled to environmental protection activities, enforcement of this pollution fee system is lax (U.S. Department of State, 2005§).

Ukraine is interested in cooperating on regional environmental issues. Conservation of natural resources is a stated high priority, although its implementation suffers from a lack of financial resources (U.S. Department of State, 2005§). Although the nuclear accident at Chernobyl and the environmental damage in Ukraine have been well documented, the degradation of Ukraine's environment extends far beyond Chernobyl. Soviet industrialization of Ukraine, especially in the Donetsk Basin, left a legacy of air pollution and industrial runoff into the Dnieper River that has contributed to the pollution and decay of the Black Sea. Also, the increase in car ownership since independence has created additional air pollution problems because a large percentage of these cars lack catalytic converters to reduce carbon monoxide exhaust emissions (U.S. Energy Information Administration, 2002§).

Many of Ukraine's thermal powerplants are old, employ antiquated equipment and obsolete technology, and lack modern pollution control equipment. To remedy this situation, Ukraine adopted in May 1996 the "National Power Energy Program Until the Year 2010," which calls in part for renovating thermal powerplants to enable them to continue operations for the next 25 years. The program, besides calling for the modernization of

powerplants and making them more environmentally friendly, includes increasing the use of renewable energy sources (U.S. Energy Information Administration, 2002§).

As has been the case in much of the FSU, the transition from the Soviet period in Ukraine has had offsetting effects on air pollution. On the one hand, the opening up of Ukrainian society has encouraged the formation of numerous environmental organizations and a flowering of environmental awareness among the general public. Environmental damage of the Soviet past have come to light and have been replaced by more environmentally friendly legislation and regulation (U.S. Energy Information Administration, 2002§). Also, as in Russia, the contraction of Ukraine's economy has helped decrease air pollution from the industrial sector. Numerous unprofitable factories were closed in the early transition to capitalism and Ukraine's decrease in industrial production has resulted in less air pollution from the industrial sector. On the other hand, Ukraine's economic woes have also affected the Government's ability to enforce environmental regulation effectively.

In terms of energy consumption per dollar of the GDP, Ukraine ranks as one of the most energy-intensive countries in the world because of its inefficient Soviet-era industries. Ukraine's energy intensity is considerably higher than any of its fellow transition neighbors, including Russia. Ukraine's intensity of carbon emissions also is extremely high owing to the country's reliance on coal and to the industry's low productivity and inefficiency (U.S. Energy Information Administration, 2002§).

The Ukrainian Government has taken several concrete actions to promote lower energy consumption and better energy efficiency. In February 2004, Ukraine ratified the Kyoto Protocol (Eco Club, 2004§). The National Energy Conservation Information Network was set up to disseminate energy conservation information to the general public and an international program with the Alliance to Save Energy was helping strengthen the role of Ukraine's NGOs and the private sector in raising public awareness of the benefits of energy efficiency. In addition, the United States Agency for International Development, in conjunction with the World Environment Center, was supporting 18 waste minimization/energy conservation demonstration projects at 10 enterprises located in the Donetsk and Dnipropetrovsk regions of Ukraine (U.S. Energy Information Administration, 2002§).

The use of renewable energy in Ukraine was one of the principal goals of the 1996 National Power Energy Program. Renewable energy sources represent about 10% of electricity generation, which is a figure that includes biomass gas and liquids, geothermal, hydropower, industrial and municipal wastes, solar, solid biomass and animal products, tide, and wind. Although this figure appears low, it can partially be explained by the fact that the development of renewable resources in Eastern Europe and the FSU remains limited primarily to expansion or refurbishment of existing hydroelectric units (U.S. Energy Information Administration, 2002§).

Renewable and alternative energy sources are beginning to find a market in Ukraine, however. As part of an alternative energy source program, the Ukrainian State Geology Committee, the Ministry of Coal, the United States Agency for International Development, and Ukrainian coal companies are working together to identify opportunities to develop coal bed methane as a commercially viable alternative energy source in Ukraine. Ukraine is a member of the U.S.-led, international Methane to Markets Initiative that pledges to reduce global methane emissions. Through multilateral cooperation, the initiative promotes cost-effective near-term methane recovery and use as a clean energy source (U.S. Energy Information Administration, 2002§).

In addition, the Ukrainian Parliament passed a bill in July 2001 that aims to develop alternative energy sources, such as solar and geothermal. Additionally, through the Wind Power Development Project, Ukraine seeks to establish wind power as a significant source of electricity generation by 2020 (U.S. Energy Information Administration, 2002§).

Commodity Overview

The data presented in this mineral commodity overview section were obtained from the summary tables in this report and from comparable data and the summary tables in the Minerals Yearbook, volume III, Europe and Central Eurasia from 1990 through 2003. The data show an increase of secondary production and/or recovery of nonferrous metals primarily in Western Europe. Although large-scale ferrous scrap collection has been an important component of raw materials supply for some time, the large-scale recovery of nonferrous metals is a more-recent undertaking. The statistics for nonferrous scrap metal recovery, which have become more readily available in recent years, show the EU to be playing a major world role and Western Europe to be the dominant producer of such secondary nonferrous metals as aluminum, copper, lead, tin, and zinc. Although to a much lesser extent, the Balkans and Central Eurasia have also begun to play a role in secondary nonferrous scrap production.

This report includes commodity outlook tables. Estimates for production of major mineral commodities for 2007 and beyond have been based upon supply-side assumptions, such as announced plans for increased production/new capacity construction and bankable feasibility studies. The outlook tables in this summary chapter show historic and projected production trends; therefore, no indication is made about whether the data are estimated or reported and revisions are not identified. Data on individual mineral commodities in tables in the individual country chapters are labeled to indicate estimates and revisions. The outlook segments of the mineral commodity tables are based on projected trends that could affect current producing facilities and on planned new facilities that operating companies, consortia, or Governments have projected to come online within indicated timeframes. Forward-looking information, which includes estimates of future exploration, mine development and production, cost of capital projects, and timing of the start of operations, are subject to a variety of risks and uncertainties that could cause actual events or results to differ significantly from expected outcomes. Projects listed in the following section are presented as an indication of industry plans and are not a U.S. Geological Survey (USGS) prediction of what will occur.

Bauxite and Alumina and Aluminum.—Western Europe was the main primary aluminum-producing region in Europe and Central Eurasia and also the main producer of secondary aluminum. Central Eurasia's production of primary aluminum was close to that of Western Europe's, but Central Eurasia was far behind that of Western Europe in the production of secondary aluminum. Central Eurasia was by far the area's leading producer of bauxite although not on a scale of the world's leading producers.

Russia was the world's second ranked producer of aluminum after China. A steady increase of Russia's substantial aluminum smelting capacity is projected, thereby contributing to Central Eurasia's positive outlook for aluminum production. Russia also was planning to double its amount of secondary aluminum production to between 250,000 and 300,000 t/yr, although no specific date was given for achieving this goal.

In 2004, Russia's aluminum industry was in the process of expanding its production of bauxite, alumina, and aluminum. The country's leading aluminum producer was RUSAL, which was the world's third ranked producer of aluminum and alloys with 9.9% of global aluminum production. RUSAL produced 2.7 Mt of aluminum in 2004 at four aluminum smelters in Russia (Bratsk, Krasnoyarsk, Novokuznetsk, and Sayanogorsk).

RUSAL planned to increase aluminum production to more than 5 Mt/yr and alumina production to 8 Mt/yr by 2013. The company planned to increase alloy production to 50% of total output. Only 9% of RUSAL's growth in aluminum production was expected to take place outside Russia, but 77% of its growth in alumina production was expected to take place abroad.

The remainder of the country's aluminum and alumina was produced by the Russian firm SUAL, which was the country's major producer of bauxite. SUAL initiated the Komi Aluminium project, which was one of the most comprehensive projects ever undertaken within the Russian aluminum industry; the project involves the development of the vertically integrated aluminum complex Komi Aluminum, which is located 1,200 km northeast of Moscow near the city of Ukhta in the Komi Republic. The Komi Aluminum project includes the development, construction, and operation of a bauxite, alumina, and aluminum production complex based on the SUALowned Middle Timan bauxite reserves, which are located 270 kilometers northwest of the proposed complex. The Middle Timan deposit, which has proven reserves of 260 Mt of ore, is Eurasia's largest. The project involves increasing annual bauxite extraction at the Middle Timan bauxite deposit to more than 6 Mt from the current 1.5 Mt by 2008, and constructing a 1.4-Mt/yr-capacity alumina refinery in Sosnogorsk in the Komi Republic and an aluminum smelter in the Komi Republic with the capacity to produce between 300,000 and 500,000 t/yr of primary aluminum. Construction of the complex would result in a 50% increase in total Russian alumina production to 4.5 Mt and increase the Russian aluminum industry's use of domestic raw materials to between 70% and 80% from 40%.

Copper.—In 2004, Central Europe (mainly Poland) and Central Eurasia (Kazakhstan and Russia) were the chief areas of mine production. Although Western Europe was only a

minor mine producer of copper, it produced a significant share of total world output of primary and secondary refined copper. Belgium was the leading producer of refined copper in Western Europe and fourth in the region following Russia, Poland, and Kazakhstan in 2004. Germany, Spain, and Sweden, in that order, followed Belgium as Western Europe's next ranked refined copper producers in 2004.

Central Eurasia followed Western Europe closely as a producer of refined copper, but Central Europe produced only about one-half the amount of refined copper as Central Eurasia. Russia remained the major producer of refined copper in Central Eurasia. Kazakhstan was also a major producer, but had only about one-half the production of Russia. In Central Europe, Poland remained the main producer of refined copper, with output about 11% above that of Kazakhstan, but significantly below that of Russia.

Development and expansion of mine production of copper in Europe and Central Eurasia, in conjunction with reported ongoing and planned mine closures, could result in a net increase of copper mine production of about 400,000 t by 2011. Kazakhstan, Russia, and Serbia appeared to be the countries where most significant production growth was likely to take place in both mine output and refined copper production.

All copper ore in Poland was mined by Kombinat Gorniczo Hutniczy Miedzi (KGHM) Polska Miedz S.A. (KGHM S.A.), which was a major world copper mining, beneficiation, smelting, and refining complex in the Lubin area. KGHM S.A. accounted for almost 4% of world mine copper production in 2004. The Rudna Mine was the leading copper ore producer with a mining capacity of about 11 Mt/yr. Poland's copper reserves were projected to be depleted by 2040 (Ney and Smakowski, 2004).

In 2004, Kazakhstan, Poland, and Russia ranked among the top 10 copper ore producing countries in the world. Russia's leading copper producing enterprise, MMC Noril'sk Nickel, produced about 55% of Russia's copper output. Although Noril'sk's development plan to 2015 issued in 2003 called for Noril'sk to maintain the total amount of ore mined on the Taymyr Peninsula close to the 2003 level of 14 Mt/yr, a projected long-term output plan for Noril'sk issued in 2005 raised ore output to 22 Mt/yr. With metal prices and demand at very high levels, the new projections seem in accord with Noril'sk's marketing strategy.

Although reserves of nickel-rich ore at Noril'sk's deposits in East Siberia were being depleted, large quantities of cuprous and disseminated ores were projected to be adequate much farther into the future. However, the cuprous ores have a much lower nickel content and somewhat lower copper content and the disseminated ores are lower in all base-metals content than the nickel-rich ores. The nickel-rich, cuprous, and disseminated ores are similar in their PGM content. After 2010, with the change in ratio of ore types mined, the percentage of copper and PGM produced will increase in proportion to the amount of nickel produced.

Outside of Noril'sk, Russian copper output will increase with the development of the large Udokan copper deposit in Chita oblast in the eastern part of the country. This deposit reportedly has confirmed reserves of 20 Mt of ore with an average copper content of 1.5%. Only Russian firms will be able to bid for development of Udokan because in 2005, in accordance with a new law on the development of strategic subsurface resources, Russia's Ministry of Natural Resources named Udokan (along with four other deposits), as a strategic deposit because it has copper reserves of more than 10 Mt of ore. The rights to develop deposits that have been declared strategic will be open only to Russian companies or persons, and they may not form part of a group that includes foreign companies or persons.

Kazakhmys Corp., which is headquartered in Dzhezkazgan in central Kazakhstan, produces more than 90% of Kazakhstan's copper. Based on 2004 production, Kazakhmys is the world's 10th ranked mined copper producer and 10th ranked refined copper producer. Kazakhmys had a number of mining projects in Kazakhstan that were intended to provide for production growth and production replacement. The majority of these projects were anticipated to come online in the short to medium term and would include both new sites and expansion of existing mines.

Gold.—In 2004, Central Eurasia remained the dominant gold producing area within Europe and Central Eurasia, accounting for more than 90% of the region's total output of gold. Central Eurasia's output was projected to increase through 2011.

In 2004, in Central Eurasia, Russia, Uzbekistan, Kazakhstan, and Kyrgyzstan, in that order, were the leading gold producers. Kazakhstan's gold production (to a much greater degree than that of Russia or Uzbekistan) was of byproduct gold associated with the country's nonferrous metals industry.

Russia was expected to continue to be the region's main gold producing area through 2011. Russia has large quantities of undeveloped reserves with which it could increase output. In 2004, the Russian gold mining sector experienced a continuation of key trends that had been affecting the sector for the past 5 years. Mine production remained at about the same level as that of the past 3 years, the share of gold from lode deposits was increasing, the number of small gold mining companies was being reduced, major companies were playing an even larger role in gold output, and foreign gold companies in the past 2 years were intensifying their investment activities. Although proven gold reserves are found in one-half of the Russian regions, only six Russian regions, all located in the eastern part of the country, were producing more than 10 t/yr of gold and accounted for nearly 80% of Russian gold output. In 2004, increased gold production was achieved primarily owing to the increased production of recycled gold (11.3 t). Development of a number of major deposits continued to be postponed, most notably that of the Sukhoy Log deposit in the Irkutsk oblast, which has reserves of more than 1,000 t of gold. Despite the temporary lull in growth in gold mining, the expansion of activities of major gold mining companies in acquiring exploration and development rights and of foreign firms in investing in gold development were expected to lead to a significant increase in Russian gold output.

Iron and Steel.—The level of steel production in the region was not expected to change appreciably through 2011. Some anticipated growth in steel production in Central Eurasia was expected to offset some production declines in Western Europe.

With respect to the steel industry in 2004, the EU15 were primarily concerned that the degree of privatization of the

production capacity of crude steel in these new and potential member countries was insufficient, although much of the steel industry in the EU15 countries had itself not been privatized until 10 years prior to establishment of the EU or even more recently. In 2004, the degree of privatization in the production of crude steel in Bulgaria, the Czech Republic, Hungary, Latvia, Romania, and the Slovak Republic was estimated by the EU to be 100%; Poland, 95%; and Turkey, 80%; in Croatia, this sector was estimated still to be 100% state-owned (Enterprise Europe, 2003, p. 8-9; European Commission, undated§).

The EU requested that the annual productivity levels for the steel sectors of steel producers in the EU10 countries be close to the average productivity of the EU15 [about 550 metric tons per year (t/yr) of crude steel per employee]. In 2003, the EU15 recommended that about 1.4 Mt/yr of less-productive steel production capacity be permanently closed in Poland and 590,000 t/yr be closed in the Czech Republic by the end of 2006 to obtain something close to the EU average level of productivity in those countries. By March 2005, however, Poland had shut down only 90,000 t/yr of capacity, and the Czech Republic apparently still had not shut down any crude steel production capacity. These countries and others in the EU10 were able to defend maintaining high levels of crude steel production capacity because of increased demand and greatly improved steel market conditions for steel producers (relative to when the closures had been recommended by the EU). The EU15 maintained that that productivity issues would provide sufficient grounds for requiring closure of less-efficient capacity if steel prices were to decline even slightly. In 2004, the average crude steel productivity level in Turkey was estimated by the EU to be about 435 t/yr per employee; in the Czech Republic and Hungary, 400 t/yr; in Poland, 280 t/yr; in Latvia, 250 t/yr; in Bulgaria and the Slovak Republic, 235 t/yr; in Romania, 115 t/yr, and in Croatia, 100 t/yr (Commission of the European Communities, 2005; Enterprise Europe, 2005, p. 21-22; European Commission, undated§).

In 2004 in Western Europe, steel production totaled more than 157,000 Mt. Germany continued to be the leading producer of crude steel, producing more than 46 Mt, followed by France, Spain, Italy, the United Kingdom, and Belgium. In Central Europe, all the steel producing countries had an annual output of about 11 Mt or less. Poland was the leading steel producer followed by the Czech Republic, Romania, and Slovakia. Steel production in Central Eurasia totaled 114 Mt. Russia and Ukraine together accounted for more than 90% of Central Eurasia's steel output; Russia's output of almost 66 Mt was considerably larger than Ukraine's output of almost 39 Mt. In 2004, Russia was the world's third ranked steel producer after China and Japan.

Russia and Kazakhstan were expected to have modest growth in steel production owing to new investment in plant modernization. In 2004, the Russian ferrous metals sector had a successful year in part because metal and ore prices remained high. Coal, coke, and iron ore prices stayed at a high level throughout the year, and steel prices rose by almost 60%. Having accumulated sufficient liquid assets, Russian steel companies found ways to invest in increasing production capacity or in acquiring new assets. Increased investments for

renovations were planned for, in particular, the Magnitogorsk, the Nizhniy Tagil, Novolipetsk, the Severstal, and the Vyksa steel mills.

In 2004, Ukraine was among the world's 10 leading steel producing countries and increased output by almost 5%. The increase in steel production was driven by exports. Ukraine's steel production far exceeded its steel consumption of only about 5 Mt/yr. Ukraine's State Mining and Metals Sector Development and Reforms Program to 2011 envisioned modest increases in production by 2011, with crude steel production projected to grow to 40 Mt compared with 39 Mt in 2004 and pig iron to remain at 31 Mt. Ukraine's annual steel consumption of 100 kilograms per person was projected to grow to between 200 and 250 kilograms per person per year by 2010, which would more than absorb the planned production increases.

Iron Ore.—Russia and Ukraine were the major iron ore producers in the region. As of January 1, 2002, according to official Russian reserve calculations, Russia had 172 iron ore deposits with a reserve base that totaled 56.6 billion metric tons (Gt) with an average iron content of 35.87% and reserves that totaled about 25 Gt. Open pit production accounted for more than 90% of ore production. Despite recent increases in iron ore production, Russia will likely find it increasingly difficult to sustain such increases without significant investment because mining conditions for iron ore were becoming difficult owing to the increasing depths of the open pits. Plans called for iron ore production to increase by 10.8% by 2005 compared with that of 2000 and by 12.4% by 2010 compared with that of 2000, and then to slow to an 11.6% increase by 2015 compared with that of 2000. Expansion of iron ore mining was planned in the Kursk Magnetic Anomaly (KMA); the expansion was expected to require large investment, however, because the ore lies under a thick layer of sedimentary rock that is inundated with water. Efforts were also underway to develop technology to mine deeper lying high-grade ore deposits in the KMA.

Ukraine has about 30 Gt of iron ore reserves. Reserves were reportedly adequate for between 15 and 20 years at the current rate of extraction. Two-thirds of the iron ore reserves are in the Krivoy Rog basin, where practically all iron ore mining takes place. Although reserves are adequate to maintain production at the current rate past 2011, a large increase in production would require significant investment to develop underground mines to access additional reserves and to process large accumulations of iron-rich tailings. Nevertheless, Ukraine's reserve base was considered adequate to sustain production for another 50 to 80 years, and was expected to play a key role in the development of Ukraine's ferrous metals sector.

In the northern and southern Balkans, iron ore output continued on a small scale as producers developed more electric-arc-furnace steel production and replaced domestic iron ore production with imports from the CIS. Sweden remained the only significant source of iron ore in Western Europe.

Central Eurasia was expected to continue to be the region's main producer of iron ore through 2011, with a small increase in production projected for this area. In Central Europe, a large increase in production was projected in Bosnia and Herzegovina. Some decline in iron ore production was projected for Western Europe by 2011, but this decline was

expected to be compensated for by a growth in production in Central Europe and Central Eurasia. Overall, a less than 10% increase in iron ore output was projected for the entire region by 2011.

Lead and Zinc.—Western Europe, Central Europe, and Central Eurasia were relatively minor mine producers of lead. Europe and Central Eurasia continued to be an important producing region for primary and secondary refined lead. Although Western Europe was a significant producing region for primary refined lead, it produced an even larger share of the world's reported output of secondary refined lead. Data on recovery and use of secondary lead in Central Eurasia has remained incomplete, which makes it difficult to compare production levels for this commodity. In Central Eurasia, only Kazakhstan was a major producer of primary refined lead. Central Europe produced a small share of the world's output of primary and secondary lead.

Poland remained the leading mine producer of lead ore in the entire region followed by Ireland. In Western Europe, Sweden was a significant lead mining country, and in Central Eurasia, Kazakhstan followed by Russia were the significant mining countries for lead.

An overall 10% increase in mine production of lead appeared to be set for this region through 2011, with the largest increase in mine output projected for Kazakhstan. The most significant change in mine output of lead for the region was projected to take place in Poland, where production could decrease by 31% between 2004 and 2011. The decline in Polish output was anticipated because of depletion of reserves at the Olkusz-Pomorzamy and the Trzebionk lead-zinc mines, which will result in closure of these mines in the 2006-08 period. The low quality of lead-zinc ores in Russia in terms of metal content in comparison with other parts of the world will inhibit investment in their development.

Reported plans for Europe and Central Eurasia until 2011 indicate an increase in the production of primary refined lead, with output buoyed by anticipated production increases in the Central Eurasian and Central European areas, especially in Kazakhstan and Russia.

Kazakhstan is the major lead and zinc producing country in the CIS and was also the leading producer of these metals in the Soviet era. The industry was controlled by the company Kazzinc, which controlled all lead and zinc production except for zinc output associated primarily with copper, which was controlled by Kazakhmys. In Kazakhstan, the Yuzhpolimetal firm was completing construction of a new 15,000-t/yr lead refinery on the base of the old Chimkent lead plant. Plans also called for Uzbekistan to start up a lead plant in 2004 at the Almalyk mining and metallurgical complex.

Europe and Central Eurasia's mine output of zinc accounted for about 15% of world production but more than 30% of the world's output of zinc metal. Western Europe was the region's leading producer of primary zinc metal followed by Central Eurasia and Central Europe. Practically all reported data on secondary zinc production came from Western Europe.

The outlook for the region's mine output of zinc appears set to show some increase through 2009. In Russia, development of the Tarnerskoye copper-zinc deposit in the Ural Mountains was

proceeding, with startup projected for May 2004. The project was scheduled to reach full capacity to mine 800,000 t/yr of copper-zinc ore by 2005.

In 2004, Kazzinc launched the new Shubinskoye mining subsidiary, which will operate the Shubinskoe underground mine, which has reserves estimated to be 1.5 Mt of polymetallic and copper ores. Mining was scheduled to start in the fourth quarter of 2004. Kazzinc planned to begin production of zinc from the Shaimerden mine in the summer of 2006. Production capacity from the Shaimerden mine would be 60,000 t/yr of zinc metal. In 2004, Kazzinc was awarded the tender for exploration and development of the Dolinnoe and the Obruchevskoe deposits near the town of Ridder in eastern Kazakhstan with mining expected to commence in 2011. Plans called for mining 600,000 t/yr of ore from both deposits, which would yield a projected 25,600 t/yr of zinc and 51,000 troy ounces per year (about 1.6 t/yr) of gold.

Zinc metal production in Central Eurasia was projected to increase mainly in Kazakhstan and Russia. Kazakhmys, which controlled all Kazakhstan's copper production, commissioned the 100,000-t/yr Balkhash zinc smelter in 2003. The new smelter was scheduled to produce 70,000 t of refined zinc in 2004 and 90,000 t in 2005. In Russia, the Chelyabinsk zinc plant, which began operations in 2002, had the capacity to produce 200,000 t/yr of zinc.

Nickel.—Russia was the world's leading producer of nickel. The majority of Russia's output was obtained from mixed sulfide ores at MMC Noril'sk' Nickel's operations in East Siberia and, to a lesser degree, from its operations on the Kola Peninsula. Output also came from other producers of laterite ores in the Ural Mountains, and a significant but smaller quantity of mined nickel came from Kazakhstan from an extension of the Ural Mountains laterite deposits. In Western Europe, relatively small quantities of nickel were mined in Finland and Greece from laterite deposits. Russia and countries of Western Europe were major world producers of refined nickel.

Although Noril'sk's development plan to 2015 issued in 2003 called for Noril'sk to maintain the total amount of ore mined on the Taymyr Peninsula close to the current level of 14 Mt/yr, a newer projection issued in 2005 called for Noril'sk to raise output on the Taymyr Peninsula to 18 Mt by 2009 and a newer long-term projection also issued in 2005 raised output to 22 Mt/yr. With metal prices and demand at very high levels, the new projections seem in accord with Noril'sk's marketing strategy.

Noril'sk will continue to mine primarily nickel-rich ore until 2009. Plans for 2010 call for significantly increasing output of cuprous and disseminated ores with a lower nickel content compared with the nickel-rich ores now being mined.

Along with switching to mining a greater proportion of cuprous and disseminated ores, Noril'sk was developing new mines to replace depleted reserves of nickel-rich ore. The Skalisty mine on the Taimyr Peninsula, which was under development, will achieve design capacity of 1.2 Mt/yr of nickel-rich ore in 6 to 7 years. Skalistyy was scheduled to produce 310,000 t of ore in 2004. Development was planned for the Gluboky mine on the Taymyr Peninsula, which was scheduled to come onstream by 2014. Gluboky and Skalisty together will ultimately produce 2 Mt/yr of nickel-rich ore.

Bateman Metals, Mintek, and Oriel Resources plc were involved in creating a demonstration-scale project for smelting nickel ores from the Shevchenko deposit in the Zhetigara region of Kustanai oblast in northern Kazakhstan. The deposit contains a resource of 46 Mt of ore at an average grade of 1.01% nickel. This project was part of an ongoing definitive feasibility study to be completed in the third quarter of 2005 for the Shevchenko nickel project. A prefeasibility study was based on the project producing 140,000 t/yr of ferronickel at a grade of more than 22% nickel within 5 years of startup. Startup could be as soon as 2007

Platinum-Group Metals.—Russia's Noril'sk complex's operations in East Siberia accounted for almost all Europe and Central Eurasia's mine output of PGM. Small amounts of platinum and palladium production also were mined by Finland, Norway, Poland, and Serbia and Montenegro. Russia and South Africa were the only two major producers of PGM in the world. Russia was the world's second ranked producer of PGM after South Africa in 2004. Russia's PGM output in contrast to that of South Africa was predominately palladium owing to a higher ratio of palladium to platinum in Russian ores than in South African ores. Both metals have major applications in the industrial sector. Palladium and platinum and, to a lesser extent, rhodium are critical components of catalytic converters, which control automobile emissions, and platinum is the critical catalytic element in the Proton Exchange Membrane (PEM) fuel cell under development to power automobiles. PGM will be in much greater demand as the world's automobile fleet increases and is equipped with catalytic converters. As legislation calling for stricter automobile emissions controls is enacted, greater loadings of PGM in catalytic converters will be required. Also, the need for alternative sources of energy to oil could result in the development of a hydrogen-based economy powered by fuel cells that use platinum as a catalyst.

Norilsk mined more than 90% of Russia's PGM output from mixed sulfide ores at its deposits at its Polar Division in East Siberia. An estimated 10 t/yr of PGM (mostly platinum) was mined from placer deposits in the Russian Far East, Siberia, and the Ural Mountains. Noril'sk's long-term development strategy appeared oriented towards maximizing PGM production rather than nickel production as nickel rich ores are being depleted. Noril'sk's remaining resources are richer in PGM relative to nickel and copper than ores that are now being mined, although these ores are lower in their absolute PGM content. Along with developing new ore sources, Noril'sk continues to develop the capability to recover PGM from abundant pyrrhotite tailings that have accumulated from many years of mining. Russian production was expected to continue to account for almost all the region's output of PGM and production increases will depend to a large extent on the prices of the metals hosted in the mixed sulfide ores of the Noril'sk complex.

Industrial Minerals

Diamond.—Russia was the region's only diamond producer. In accordance with Russia's participation in the Kimberley Process, Russia released its diamond production and trade figures, which for decades in both the Soviet Union and Russia

had been held as a state secret. The data revealed that Russia was the world's leading diamond producer. The Kimberley Process is a joint government, international diamond industry, and civil society initiative to stem the flow of conflict diamond, which is rough diamond that is used to fund rebel movements and terrorist activity.

The Russian diamond industry is controlled by the diamond-producing monopoly Alamzy Rossii Sakha (Alrosa), which is based in the Sakha Yakutiya Republic. Alrosa produces nearly 100% of the country's diamond. It also accounts for about 20% of the world's rough diamond production. Alrosa, which is jointly owned by Russian Central Government organizations in Moscow and the Sakha Yakutiya Republic, operates mines throughout Russia and Angola. Alrosa has a distribution agreement with De Beers Consolidated Mines Ltd.'s marketing arm, The Diamond Trading Company, but is reducing the amount of diamond it supplies to De Beers. The company also markets its own stones and supports a growing Russian diamond-cutting industry.

Alrosa planned to expand its underground mining operations and exploration activities. According to the company's president, the 2005 program, which is based upon Alrosa's 10-year development guidelines, calls for the expansion of underground mine production as its first priority. Alrosa was developing underground mining operations at the Aikhal, the Mirny, and the Udachnyy enterprises.

Alrosa also planned to commence underground mining at the Lomonosov field in the Arkhangel'skaya oblast, which was under development. The Lomonosov diamond field, which was the largest in Europe, has reserves valued at an estimated \$12 billion. About 60% of its reserves are gem-quality diamond that can be used in the jewelry industry. On June, 28, 2005, ore treatment plant No. 1 was put into operation at Lomonosov. It was the beginning of commercial diamond production in the region. The design capacity of the plant was about 1 Mt/yr. The diamond deposit's projected effective lifespan is about 50 years. Plans called for having the second stage at Lomonosov in operation by 2009 with the capacity to mine and mill 5.6 Mt/yr of ore to produce between \$200 million and \$250 million per year of diamond.

Mineral Fuels and Related Materials

Most of the countries in Western and Central Europe were net importers of energy. With the exception of North Sea hydrocarbon production, Western Europe's sources of energy are expected to continue to be based on imports from the Middle East and the CIS area. Major increases in energy consumption in the near term were not anticipated.

In Central Europe, domestic production of brown coal and lignite for electric power generation will likely be maintained to reduce the need for imported natural gas and petroleum, which has been largely supplied by the CIS. Poland's hard coal industry is expected to continue to modernize and to play an important regional role in the energy field. Lignite, which was the fuel mainly used to power thermal electric power stations, continued to be an important source of energy in Central Europe and the Balkans.

Russia and other CIS oil and gas producers are expected to continue to be among the major providers of hydrocarbons to the world market. The rate of increases of future deliveries of these commodities to the world market, along with the successful exploration and development of new deposits, will depend on the resolution of pipeline and transport issues for their delivery.

Coal.—The CIS was the major coal producing region in Europe and Central Eurasia. Coal was produced in a large number of CIS countries, with Russia, Kazakhstan, and Ukraine, in that order, as the major coal producers. In 2004, Poland remained Central Europe's leading producer of anthracite, bituminous coal, and lignite. Poland's hard coal industry was expected to continue to modernize and to continue to play an important regional role in the energy sector.

Russia's coal production in the past several years has been increasing as the Russian economy has been growing and domestic demand for coal increasing. To satisfy Russia's increasing demand for energy, extraction of coal would need to increase to 280 Mt/yr in 2005, 340 Mt/yr by 2010, and 450 Mt/yr by 2020. During the first stage (up to 2010) for expanding Russian coal output, plans called for mobilizing all resources in the coal industry, including transportation and energy resources, to extract and transport coal and make full use of existing production capacities. During the second stage (from 2010 to 2020), coal production would be expanded in the Kansk Achinsk and the Kuznetsk basins, which have the two largest coal resources in the country, as well in other basins of East Siberia and the Russian Far East. To achieve the goals of the second stage, however, will require the creation of a new technological base for extracting and using coal, which will involve the employment of large-scale coal beneficiation in the area of its extraction, improved methods and means for transporting coal, and the large-scale introduction of environmentally sound technologies for converting coal into electricity. Developing these technological innovations will require significant capital investment.

Ukraine has 34.1 Gt in proven coal reserves, which accounts for more than 60% of the FSU's total coal reserves. The decrease in coal extraction following the dissolution of the Soviet Union began to reverse in 1997 and, since then, coal production has increased. Goals were set to stabilize coal extraction at between 85 Mt/yr and 90 Mt/yr. Most of Ukraine's coal is extracted from deep underground mines in the Donets Basin (Donbas) in the eastern region of the country.

According to Kazakhstan's classification system for mineral reserves, total geologic coal resources were assessed to be between 150 Gt and 160 Gt, of which 62% is brown coal and the remainder, bituminous coal. Kazakhstan plans to increase production of coal, of which almost all is subbituminous, to more than 85 Mt by 2005.

Natural Gas.—Central Eurasia (mainly Russia) produced a substantial share of the world's production of natural gas, which in 2004 amounted to almost 30% of the world total. Western Europe accounted for less than 10% of world output, and Central Europe, less than 1%. Russia remained the world's leading natural gas producer and exporter. In 2004, natural gas production in Russia amounted to 633.95 billion cubic

meters, which was a 2.8% increase compared with that of 2003. Although natural gas exports rose during 2004 compared with previous years, the Ministry of Energy expected natural gas exports in 2005 to grow at a slower rate. In 2004, Russia exported approximately 7.1 trillion cubic feet (about 201 billion cubic meters) of natural gas, and Ministry of Energy data released at the beginning of 2005 forecasted exports of 7.2 trillion cubic feet per year (about 204 billion cubic meters per year) for 2005. If Gazprom, which is Russia's monopoly gas producer, is to fulfill its long-term goal of increasing its European sales, it will have to boost its production, and secure more reliable export routes to the region. Several proposed new export pipelines would serve European markets. Pipeline routes are also under consideration that would deliver gas to Asian markets.

Russia has the world's largest natural gas reserves, with 1,680 trillion cubic feet (about 48 trillion cubic meters), which is nearly twice the amount of reserves in the next ranked country, Iran. To maintain output, Russia will have to develop new fields. Most of these fields are located in remote regions that lack infrastructure and would require a high level of investment. Unlike the case with oil, proven gas reserves are at present adequate to provide for projected production in East Siberia.

In the Energy Strategy of Russia for the Period up to 2020, which was issued in May 2003, gas production projections were revised downwards in the modest case projection, with gas production projected in the neighborhood of 620 billion cubic meters by 2010 and 650 billion cubic meters by 2020; in the optimistic case projection, gas production was projected to be about 650 billion cubic meters by 2010 and 700 billion cubic meters by 2020. East Siberia and the Russian Far East would be the sources of increased production as production was projected to decline in the country's major producing region of West Siberia and to increase only slightly in the much smaller gas producing regions of the European part of Russia.

Kazakhstan and Turkmenistan, which are large regional producers of natural gas, also could be major factors in the region's expected rise in output. Kazakhstan's proven natural gas reserves were reportedly 65 trillion to 70 trillion cubic feet (about 1.8 trillion to 2 trillion cubic meters), which was comparable to Canada and Kuwait and ranked it in the top 20 countries in the world. According to the 15-year strategy of the Kazakh Ministry for Energy and Mineral Resources, the country plans to increase its natural gas production to 1.66 trillion cubic feet (about 47 billion cubic meters) by 2010, and to 1.84 trillion cubic feet (about 52 billion cubic meters) by 2015. About 25% of proven reserves are in the Karachaganak oil and gas condensate field, which has proven natural gas reserves of between 16 trillion and 20 trillion cubic feet (between 371 billion and 566 billion cubic meters). A consortium that was developing Karachaganak expected peak production by 2010 to be about 1 trillion cubic feet (about 28 billion cubic meters). Another important natural gas field, Amangeldy, is situated in the south of the country near Zhambul. Exploratory drilling in 2001 indicated reserves of up to 1.8 trillion cubic feet (about 51 billion cubic meters). The field was being developed primarily by Kazmunaigas, and the company expected initial production of roughly 35 billion cubic feet per year (about 991 million cubic meters per year) after initial development.

Turkmenistan was one of the leading countries in the world in the quantity of its natural gas reserves. All gas pipelines that connect Turkmenistan to world markets were owned by the Russian company Gazprom and routed through Russia. In the 1990s, Turkmenistan was denied access through this pipeline network to world markets, and thus Turkmenistan's incentive to produce natural gas was greatly reduced. An agreement signed with Russia in January 2005 guaranteed that Turkmenistan could initially export about 6 billion cubic meters of natural gas to Russia in 2005; this amount would increase to about 68 billion cubic meters per year in 2007 and remain at 68 billion cubic meters per year from 2009 to 2028. Turkmenistan also agreed to supply Ukraine with up to 34 billion cubic meters per year until 2006 and planned to extend this agreement through 2016. It appeared that the quantities of gas Turkmenistan agreed to export to Russia and Ukraine exceed its current production capacity and it was not clear to what degree each commitment would be fulfilled.

A Trans-Afghan pipeline (TAP) was under consideration to export Central Asian natural gas via Afghanistan to Pakistan. The majority of this gas would come from Turkmenistan's Dauletabad field, which, according to authorities in Turkmenistan, holds more than 60 trillion cubic feet. If verified, it would make this field the fourth largest in the world. Until recently, the TAP proposal was on hold, but with the Taliban removed from power and peace apparently established in Afghanistan, the idea for the TAP was revived.

Azerbaijan, which is a major regional producer of oil, was expected to become a major regional natural gas producer through development of the Shah Deniz offshore natural gas and condensate field, which is located in the Caspian Sea approximately 60 miles southeast of Baku. This field is thought to be one of the world's largest natural gas fields discovered in the past 20 years. According to British Petroleum, the project's operator, the field contains potential recoverable resources of roughly 400 billion cubic meters of natural gas. Shah Deniz was being developed by the Shah Deniz consortium whose members were BP plc, Statoil ASA, State Oil Company of Azerbaijan (SOCAR), Lukagip N.V., NICO International U.A.E., Total S.A., and Turkiye Petrolleri A. O. (TPAO). In 2006, once new infrastructure is in place, Shah Deniz will be capable of producing approximately 8.4 billion cubic meters per year, which would make Azerbaijan self-sufficient in natural gas and generate significant export revenue.

A natural gas pipeline, known as the South Caucasus Pipeline (SCP) or Baku-Tbilisi-Erzurum, was being constructed to carry natural gas from Azerbaijan's Shah Deniz field. The scheduled completion of the SCP was October 2006, which would be in time to meet Shah Deniz's first contracted exports to Turkey. Although most of the natural gas will be exported to Turkey, some of the natural gas will be sent to Europe via a transit pipeline through Greece.

Petroleum.—Central Eurasia's oil production was centered mainly in Russia in West Siberia. Development of major new petroleum resources, however, were taking place offshore in the Caspian Sea by the littoral states in conjunction with major Western firms.

The countries of the Caspian Sea region were of great importance to world energy markets because of the large oil and gas reserves in this region that were being developed. Proven oil reserves for the entire Caspian Sea region (estimated to be between 18 billion and 35 billion barrels) were comparable to those of the United States (22 billion barrels) and greater than those in the North Sea (17 billion barrels); estimated undiscovered oil resources could provide another 235 billion barrels of oil (U.S. Energy Information Administration, 2000§; 2002§; 2003§).

For the past decade, Azerbaijan's offshore oil deposits in the Caspian Sea have been a major focus for global oil development. Since 1997, increases in the country's oil production mainly have been produced by an international consortium known as the Azerbaijan International Operating Company (AIOC), which accounts for more than 70% of Azerbaijan's total oil exports. AIOC, (whose partners were BP, Delta/Hess, Devon Energy Corp., ExxonMobil Corp., Inpex Corp., Itochu Corp., SOCAR, Statoil, TPAO, and Unocal) operated the offshore Azeri, Chirag, and deepwater Gunashli (ACG) megastructures.

In the next decade, the main production development in Azerbaijan is expected to come from the three-phase development of the ACG megastructure. Total oil production from ACG was projected to reach approximately 500,000 barrels per day (bbl/d) by 2007, with the full implementation of Phase 1. If AIOC's Phase 2 plans are achieved, production from the East Azeri and West Azeri fields could add more than 800,000 bbl/d. Production was expected to peak at about 1 million barrels per day (Mbbl/d) by 2009 following the completion of Phase 3, which includes production from the deepwater Gunashli field and will complete full ACG development.

Kazakhstan, which is situated on northeastern portion of the Caspian Sea, has most of the Caspian's largest known oilfields. Kazakhstan's combined onshore and offshore proven hydrocarbon reserves have been estimated between 9 and 29 billion barrels, which is comparable to the Organization of the Petroleum Exporting Countries (OPEC) members Algeria on the low end and Qatar on the high end. Kazakhstan's recently completed new assessment of its oil reserves put estimated proven and probable oil reserves at approximately 29 billion barrels compared with its earlier assessment in the 1990s of approximately 16 billion barrels. The country is poised to become an even more significant exporter to world oil markets during the next decade.

Kazakhstan produced approximately 1.02 Mbbl/d of oil in 2004 and hoped to increase production levels to approximately 3.5 Mbbl/d by 2015. The country expected the majority of the growth to come from four enormous fields: Karachaganak, Kashagan, Kurmangazy, and Tengiz. This output would include approximately 1 million bbl/d from Kashagan, 700,000 bbl/d from Tengiz, 600,000 bbl/d from Kurmangazy, and 500,000 bbl/d from Karachaganak. Other smaller fields would account for the balance.

The Kashagan field, which was the largest oilfield outside of the Middle East and the fifth largest in the world in terms of reserves, is located off the northern shore of the Caspian Sea near the city of Atyrau. Although the field was still being appraised, in June 2002, the consortium operating the field—the

Agip Kazakhstan North Caspian Operating Company (Agi KCO), formerly known as OKIOC—estimated the field's recoverable reserves to be between 7 billion and 9 billion barrels of oil equivalent, with further potential totaling between 9 billion and 13 billion barrels using secondary recovery techniques. Oil production was not expected to begin until 2008 at initial levels of 75,000 bbl/d, with subsequent levels at about 450,000 bbl/d. Peak production of 1.2 Mbbl/d was expected by 2016.

In 2004 in Russia, the extraction of oil with gas condensate came to 458.808 Mt (about 3.3 billion barrels), which was the largest amount of oil that the country had produced since independence in 1991. Russia was the world's second ranked oil producer and oil exporting country.

Russia's Energy Strategy of Russia for the Period up to 2020 that was issued in May 2003 revised previously projected oil production upwards and gas production downwards. In the strategy's moderate case projection, oil production was projected to be about 440 Mt (about 3.2 billion barrels) in 2010; this amount would fall slightly to about 420 Mt (about 3.1 billion barrels) by 2020. The optimistic case projection estimates oil production to rise to almost 500 Mt (3.7 billion barrels) by 2010 and to continue to rise to about 530 Mt (about 3.9 billion barrels) by 2020. New production in East Siberia and the Russian Far East would account for a large part of the increase because production was projected to remain stable or decrease in the current oil producing regions.

Russia reportedly has proven oil reserves of 60 billion barrels, most of which are located in West Siberia between the Ural Mountains and the Central Siberian Plateau. Oil reserves in East Siberia and the Russian Far East, however, currently could not support large increased production and a successful exploration program would have to be conducted in this region to achieve projected production goals. After 2010, all growth in oil production would have to come from undiscovered fields in this region.

The Russian Government and other analysts agree that production is likely to continue to grow, at least in the short term. Oil companies in Russia were applying new upstream techniques to older oilfields and were therefore improving current production. Private firms had led much of the upstream development in Russia, but as the state nationalizes these firms, sustained improvements to exploration and development become less certain.

Uranium.—Europe and Central Eurasia were the major regional sources of mined uranium oxide (U_3O_8) . Uranium mining took place mainly in the Central Asian countries.

The head of Kazakhstan's Kazatomprom, the state firm that controls the country's uranium industry, said the state company aims to become the world's leading uranium producer by 2010. Kazatomprom planned to increase uranium mine output to 15,000 t/yr of uranium oxide in 5 years from the current level of approximately 4,000 t/yr. If these plans are realized, then Kazatomprom will overtake Canada's Cameco Corp., which is the current (2004) leader. Kazatomprom plans to invest \$600 million in construction of new mines and development of existing ones to become the global leader.

Kazatomprom intends to increase output at existing mining operations and to develop new mining operations. Plans

call for development of mines at the Central Moinkum, the Eastern Mynkuduk, the Inkai, and the Kharasan deposits and joint venture development of the Irkol, the Moinkum, the Tortkuduk, the Zarechnoye, and the Zhalpak deposits, as well as construction of enrichment plants at the Shestoye, the Stepnoye, and the Tsentralnoye mines. Plans also call for constructing a conversion plant to produce 3,000 t/yr of natural uranium hexafluoride to sell on world markets and to use in processing uranium scrap into uranium dioxide and fuel pellets.

Russia did not produce enough uranium to meet its consumption requirements and had to consume stockpiled material. The country was planning to make up for shortfalls by participating in uranium development projects at home and abroad. It planned to increase the capacity of its nuclear reactors by 50% by 2010 and by more than 450% by 2050. Russia's Ministry of Natural Resources drafted a program (Uranium of Russia) to explore for new uranium deposits to help meet Russia's expected uranium requirements of 17,000 t/yr in the next decade.

Russia must more than double annual uranium production by 2020 to 7,500 t of uranium from current production of 3,200 t to meet growing demand, according to TVEL Corp., which was the country's nuclear fuel corporation. Russia will have to increase uranium production to 12,000 t/yr by 2050, TVEL reported. TVEL estimated that, given Russia's plans to expand nuclear power production and export nuclear fuel, Russia's demand for uranium could more than triple to 29,000 t/yr by 2050 from the current 9,000 t/yr. TVEL stated that mining could meet 52% of Russia's total demand for uranium; the use of secondary sources, 31%; and imports, 17%. TVEL said its estimates were based on the overall extent of reserves at known uranium fields. Russia could face a serious shortage of uranium after 2035. Putting new fields onstream could offset this potential shortage, but exploration would have to be stepped up in the mid-term for this to happen.

Ukraine was planning to raise its uranium extraction volumes to a level that would allow it to use its own nuclear fuel at all power stations by 2015. These plans are included in Ukraine's draft strategy for development of the country's fuel and energy complex until 2030. The investments necessary for such an increase in uranium extraction for the 2005-30 period were estimated to be \$4.5 billion. Ukraine will need to attract non-Government investments to develop the uranium industry.

Total uranium reserves in Uzbekistan reportedly are about 185,000 t, of which approximately 114,000 t can be developed by the in situ leaching method. The country's uranium production had fallen by almost one-half since the Soviet period and the country was instituting a program to increase uranium output in the near future by investing in modernizing the Navoi mining and metallurgical complex, which was the country's main uranium producer. A \$6 million upgrade would enable Navoi to increase uranium output by 33%.

Uzbekistan was the major source of uranium in the Soviet Union. Before 1992, all uranium mined and milled in Uzbekistan was shipped to Russia. Since 1992, all Uzbekistan's uranium production has been exported, mainly to the United States, through the United States-based intermediary Nukem, Inc.

References Cited

- Commission of the European Communities, 2005, Report from the commission to the council and the European Parliament—Second monitoring report on steel restructuring in the Czech Republic and Poland: Brussels, Belgium, Commission of the European Communities, August 3, 7 p.
- Economist, The, 2004, Something to celebrate, The Economist, v. 371, no. 8372, April 30, p. 14-15.
- Enterprise Europe, 2000, Sustainable development in mining and quarrying: Brussels, Belgium, Communication and Information Unit, Directorate-General for Enterprise and Industry, European Commission, no. 1, September, 23 p.
- Enterprise Europe, 2003, New member states steel themselves to join the Union: Brussels, Belgium, Communication and Information Unit, Directorate-General for Enterprise and Industry, European Commission, no. 13, October-December, 23 p.
- Enterprise Europe, 2005, EU-Russia—Consolidating neighbourly relations: Brussels, Belgium, Communication and Information Unit, Directorate-General for Enterprise and Industry, European Commission, no. 18, January-March, 23 p.
- European Commission, 2006a, Enlargement, two years after—An economic evaluation: Brussels, Belgium, Bureau of European Policy Advisers and the Directorate-General for Enterprise and Industry, European Commission, May, Occasional Paper, no. 24, 120 p.
- European Commission, 2006b, European neighbourhood policy—Economic review of ENP Countries: Brussels, Belgium, Directorate-General for Enterprise and Industry, European Commission, June, Occasional Paper, no. 25, 145 p.
- Leskov, Mikhail, 2004, Project evaluation—A Russian viewpoint: Mining Journal, September 24 supplement, p. 21.
- Metals Economics Group, 2004, Overview of worldwide exploration budgets— Trends and locations: Strategic Report, v. 17, no. 6, November/December, p. 1-6.
- Ney, Roman and Smakowski, Tadeusz, 2004, Bilans Gospodarki Surowcami W Polce Na Tle Gospodarke Swiatowoj 1998-2003 (Minerals Yearbook of Poland): Krakow, Poland, Polish Academy of Sciences, Ministry of Environmental Protection, Natural Resources and Forestry, December, 515 p.
- Raw Materials Supply Group, 2006, EU non-energy extractive industry sustainable development indicators, 2001-2003: Brussels, Belgium, European Commission, 23 p.
- World Bank, 2006, Romania—Mine closure and social mitigation project, report and recommendation: Washington, DC, World Bank, INSP/R2006-0003, March 22, 12 p.

Internet References Cited

- Cox, David, and Goulden, Jason, 2005, Worldwide exploration trends 2005, China Mining 2005 Conference, Beijing, China, November 2005, accessed January 26, 2006, at URL http://www.china-mining.com/papers.shtml.
- Eco Club, 2004 (February), Ukraine ratifies the Kyoto Protocol, accessed August 15, 2006, at URL http://www.ecoclub.ukrwest.net/english/kyoto_pr.htm.
- Embassy of the Republic of Kazakhstan, undated, Kazakhstan at a glance, Country Profile, accessed August 15, 2006, at URL http://www.kazakhstanembassy.org.uk/cgi-bin/index/57.
- European Commission, 2005 (August 26), Countries' steel fiches—
 Restructuring of the steel industry in the new member states—Candidate and third countries—Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Poland, Romania, Slovak Republic, Turkey, accessed August 9, 2006, via URL http://ec.europa.eu/enterprise/steel/countries_steel_fiches.htm.
- European Commission, [undated], Myths and facts about enlargement, accessed August 9, 2006, at URL http://ec.europa.eu/enlargement/questions_and_answers/myths_en.htm.
- Jones, Misha, 2005, Digging in deep—Mining's impact on Russia's indigenous peoples in Siberia and the Far East, accessed August 17, 2006, at URL http://www.pacificenvironment.org/article.php?id=171.
- Ministry for Environmental Protection of Ukraine, 2006 (August 26), Information card, accessed August 27, 2006, at URL http://www.kmu.gov.ua/control/en/publish/article?art_id=91651&ca5t_id=73007.

- United Nations Environment Programme, 2004 (November), Russia's ratification of the Kyoto climate treaty "historic" says Kofi Annan, Press Release, accessed July 21, 2006, at URL http://www.unep.org/Documents. Multilingual/Default.asp?DocumentID=412&ArticleID=4668&l=en.
- U.S. Department of State, 2005, Ukraine, Background Note, accessed August 12, 2006, at URL http://www.state.gov/r/pa/ei/bgn/3211.htm.
- U.S. Department of State, 2006, Ukraine, Background Note, accessed August 20, 2006, at URL http://www.state.gov/r/pa/ei/bgn/3211.htm.
- U.S. Energy Information Administration, 2000 (August), World energy areas to watch, accessed September 3, 2001, at URL http://www.eia.doe.gov/emeu/ cabs/hot.html.
- U.S. Energy Information Administration, 2002, Ukraine, Environmental Issues, accessed July 10, 2006, at URL http://www.eia.doe.gov/emeu/cabs/ukrenv.html.

- U.S. Energy Information Administration, 2003, Caspian Sea region, accessed August 8, 2004, at URL http://www.eia.doe.gov/emeu/cabs/caspian.html.
- U.S. Energy Information Administration, 2004, Russia, Country Analysis Brief, accessed July 24, 2006, at URL http://www.eia.doe.gov/emeu/cabs/russenv.html.
- World Bank, 2005, Moscow Office Economics Unit, Russian Economic Report, accessed August 25, 2006, at URL http://ns.worldbank.org.ru/files/rer/RER_10_eng.pdf.
- World Bank, 2006, Kazakhstan, Country Brief 2006, accessed August 6, 2006, at URL http://www.worldbank.org.kz/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/KAZAKHSTANEXTN/0,menuPK:361879~pagePK:141132~piPK:141107~theSitePK:361869,00. html.

TABLE 1 EUROPE AND CENTRAL EURASIA: AREA AND POPULATION

	Area ¹	Population ²
Region and country	(square kilometers)	(thousands)
Western Europe:	_	
Austria	83,870	8,11
Belgium	30,528	10,40
Denmark	43,094	5,39
Finland	338,145	5,21
France	547,030	59,99
Germany	357,021	82,63
Greece	131,940	11,07
Iceland	103,000	29
Ireland	70,280	4,01
Italy	301,230	57,57
Luxembourg	2,586	45
Malta	316	40
Netherlands	41,526	16,25
Norway	324,220	4,58
Portugal	92,391	10,43
Spain	504,782	41,28
Sweden	449,964	8,98
Switzerland	41,290	7,38
United Kingdom	244,820	59,40
Total	3,708,033	393,88
Central Europe:	-	· · · · · · · · · · · · · · · · · · ·
Albania	28,748	3,18
Bosnia and Herzegovina	51,129	3,83
Bulgaria	110,910	7,78
Croatia	56,542	4,50
Czech Republic	78,866	10,18
Estonia	45,226	1,34
Hungary	93,030	10,07
Latvia	64,589	2,30
Lithuania	65,200	3,43
Macedonia	25,333	2,00
Poland	312,685	38,10
Romania	237,500	21,85
Serbia and Montenegro	102,350	8,15
Slovakia	48,845	5,39
Slovenia	20,273	1,99
Total	1,341,226	124,27
Central Eurasia:	1,541,220	127,21
Armenia	29,800	3,05
Azerbaijan	86,600	8,28
Belarus	207,600	
Georgia	- 207,000 69,700	9,83
Kazakhstan	2,717,300	4,52
	-	14,95
Kyrgyzstan	198,500	5,09
Moldova	33,843	4,21
Russia	17,075,200	142,81
Tajikistan	143,100	6,43
Turkmenistan	488,100	4,93
Ukraine	603,700	48,00
Uzbekistan	447,400	25,93
Total Regional total	22,100,843 27,150,102	278,07 796,22

¹Source: Central Intelligence Agency, The World Factbook 2005

²Source: World Bank, World Development Indicators Database 2005

 ${\bf TABLE~2} \\ {\bf EUROPE~AND~CENTRAL~EURASIA:~GROSS~DOMESTIC~PRODUCT}^{1} \\$

	Purchasing		Annual
	power parity	Per capita	percentage change
Region and country	(million dollars)	(dollars)	(constant prices)
Western Europe:			
Austria	254,095	31,254	2.4
Belgium	309,011	29,707	2.7
Denmark	178,477	33,089	2.4
Finland	152,955	29,305	3.6
France	1,724,647	27,738	2.0
Germany	2,391,569	28,988	1.6
Greece	223,500	20,362	4.2
Iceland	9,756	33,269	5.2
Ireland	152,301	37,663	4.5
Italy	1,620,454	27,984	1.2
Luxembourg	28,910	63,609	4.4
Malta	7,574	19,302	1.0
Netherlands	477,414	29,332	1.7
Norway	183,765	40,005	2.9
Portugal	194,439	18,503	1.0
Spain	971,724	23,627	3.1
Sweden	254,206	28,205	3.6
Switzerland	230,101	31,690	1.7
United Kingdom	1,736,377	28,938	3.2
Total	11,101,275	XX	XX
Central Europe:	,,		
Albania	17,402	4,937	5.9
Bosnia and Herzegovina	21,402	5,504	5.7
Bulgaria	66,113	8,500	5.6
Croatia	52,056	11,568	3.8
Czech republic	187,498	18,370	4.4
Estonia	20,559	15,217	7.8
Hungary	152,485	15,546	4.2
Latvia	27,785	11,980	8.5
Lithuania	44,727	12,980	6.7
Macedonia	14,914	7,237	2.4
Poland	475,427	12,452	5.4
Romania	169,966	7,641	8.3
Serbia and Montenegro	40,524	4,858	7.2
Slovakia	81,428	15,066	5.5
Slovenia	40,490	20,306	4.6
Total	1,412,776	XX	XX
Central Eurasia:			
Armenia	12,347	3,806	10.1
Azerbaijan	33,098	3,968	10.2
Belarus	65,133	6,646	11.0
Georgia	14,268	2,774	6.2
Kazakhstan	111,347	7,418	9.4
Kyrgyzstan	9,870	1,934	7.1
Moldova	7,642	2,119	7.3
Russia	1,449,170	10,179	7.2
Tajikistan	7,859	1,246	10.6
Turkmenistan	35,931	7,266	17.2
Ukraine	312,128	6,554	12.1
Uzbekistan	45,758	1,766	7.1
Total	2,104,551	XX	XX
Regional total	14,618,602	XX	XX

XX Not applicable.

¹Source: International Monetary Fund, World Economic Outlook Database 2005

 ${\it TABLE~3}$ SELECTED EXPLORATION ACTIVITY IN EUROPE AND CENTRAL EURASIA IN 2004

Country	Site	Commodity ¹	Company	Phase ²	Type ³
Armenia	Zod	Au	Sterlite Gold Ltd.	Feas.	Ext.
Bulgaria	Ada Tepe	Au, Ag	Dundee Precious Metals Corp.	Feas.	Ext.
Do.	Breznik	Au, Ag	Euromax Resources Limited	Expl.	Cont.
Do.	Rakitovo/Srebna	Au, Ag	do.	Expl.	New
Do.	Rosino	Au	Hereward Ventures plc	Expl.	Cont.
Finland	Arctic/Suhanko	PGM, Au	Gold Fields Limited	Expl.	Cont.
Do.	Hanhimaa/Kellolaki	Au	Dragon Mining NL	Expl.	Cont.
Do.	Haveri	Au	Northern Lion Gold Corp.	Expl.	Cont.
Do.	Jokisivu	Au	Dragon Mining NL	Devel.	Ext.
Do.	Kaaresselka	Au	Tertiary Minerals Ltd.	Expl.	New
Do.	Keivitsa	Ni, Cu, PGM	Scandinavian Gold Limited	Expl.	Cont.
Do.	Kopsankangas	Au	Belvedere Resources Ltd.	Expl.	Cont.
Do.	Kuopio-Kaavi	Diamond	Nordic Diamonds Ltd.	Expl.	New
Do.	Kuusamo	Cu, Au	Belvedere Resources Ltd.	Expl.	Cont.
Do.	Lahtojoki	Diamond	European Diamonds plc	Expl.	New
Do.	Lentiira	Diamond	do.	Expl.	Cont.
Do.	Arctic/Suhanko	PGM, Au	Gold Fields Limited	Expl.	Cont.
Do.	Suurikuusikko	Au	Riddarhyttan Resources AB	Feas.	Ext.
Greece	Perama Hill	Au, Ag	Frontier Pacific Mining Corp.	Feas.	Ext.
Greenland	Ammassalik	Ni, Cu, Au, PGM	Diamond Fields Int'l. Ltd.	Expl.	Cont.
Do.	Garnet Lake (Sarfartoq)	Diamond	Hudson Resources Inc.	Expl.	New
Do.	Nalunaq	Au	Crew Development Corp.	Prod.	Ext.
Do.	Seqi	Olivine	do.	Feas.	Ext.
Do.	Skaergaard	Au, PGM	Galahad Gold plc.	Expl.	New
Hungary	Fuzerradvany/Kanazsvar	Au	Carpathian Gold Inc.	Expl.	New
Ireland	Curraghinalt	Au	Tournigan Gold Corp.	Expl.	Cont.
Do.	Longford-Down	Au	Conroy Diamonds and Gold plc.	Expl.	Cont.
Do.	Pallas Green	Zn, Pb	Minco plc.	Expl.	Cont.
Do.	Glenlark	Au	Tournigan Gold Corp.	Expl.	Cont.
Norway	Espedalen	Ni, Cu	Blackstone Ventures Inc.	Expl.	Cont.
Do.	Gjedde Lake/Kobbfors	Au, Zn	Kenor ASA	Expl.	New
Do.	Vakkerlien	Ni, Cu, Co	Blackstone Ventures Inc.	•	Cont.
		· · · · · · · · · · · · · · · · · · ·		Expl.	Ext.
Portugal	Aljustrel	Zn, Pb, Ag	EuroZinc Mining Corp.	Feas.	
Do.	Gralheira-Jales	Au, Ag	St. Elias Mines Ltd.	Expl.	Cont.
Do.	Poco das Freitas	Au	Kernow Resources Ltd.	Expl.	Cont.
Romania	Baia Mare	Au	Carpathian Gold Inc.	Expl.	New
Do.	Bucium/Rodu/Frasin	Au, Ag	Gabriel Resources Ltd.	Expl.	Cont.
Do.	Certej/Sacaramb	Au, Ag	European Goldfields Ltd.	Expl.	Cont.
Do.	Rosia Montana	Au, Ag	do.	Devel.	Ext.
Do.	Varatec	Au	Carpathian Gold Inc.	Expl.	New
Do.	Zlatina/Trimpoiele	Au, Cu	European Goldfields Ltd.	Expl.	Cont.
Sardinia, Italy	Furtei	Au	Sargold Resources Corp.	Prod.	Ext.
Do.	Monte Ollasteddu	Au	Medoro Resources Ltd.	Prod.	Ext.
Scotland, UK	Sandison	PGM	Agricola Resources plc.	Expl.	New
Serbia	Mokra Gora/Lipovac	Ni	European Nickel plc.	Expl.	New
Do.	Plavkovo/Sijarinska	Au	Eurasian Minerals Inc.	Expl.	New
Slovakia	Kremnica	Au	Tournigan Gold Corp.	Feas.	Ext.
Do.	Kremnica South	Au	do.	Feas.	Ext.
Spain	Aguablanca	Ni, Cu, PGM	Rio Narcea Gold Mines Ltd.	Prod.	Ext.
Do.	Aguas Tenidas	PGM	PGM Ventures Corp.	Devel.	Ext.
Do.	Golpejas	Rare earths	Solid Resources Ltd.	Expl.	Cont.
Do.	Lomero-Poyatos	Au, Ag, Cu, Pb, Zn	Cambridge Mineral Resources plc.	Expl.	Cont.
Do.	Ossa Morena	Ni, Cu, PGM	Rio Narcea Gold Mines Ltd.	Expl.	New
Do.	Salamon	Au	Ormonde Mining plc.	Expl.	Cont.
Do.	Salave	Au	Rio Narcea Gold Mines Ltd.	Feas.	Ext.
Do.	Tracia	Au	Ormonde Mining plc.	Expl.	Cont.
Sweden	Ahmavuoma	Cu, Au, Co	Tertiary Minerals Ltd.	Expl.	Cont.
Do.	Ailatis	Cu, Au, Co	Lundin Mining Corp.	Expl.	New
		Cu. Au. Cu	Lunum wining Colp.	EXPI.	TACM

See footnotes at end of table.

TABLE 3--Continued SELECTED EXPLORATION ACTIVITY IN EUROPE AND CENTRAL EURASIA IN 2004

Country	Site	Commodity ¹	Company	Phase ²	Type ³
SwedenContinued	Bjorkdal	Au, Ag, Cu, Zn	Minmet plc.	Prod.	Ext.
Do.	Bottenbacken	Cu, Au, Pd	Nordic Diamonds Ltd.	Expl.	Cont.
Do.	Faboliden	Au	Lappland Goldminers AB	Expl.	Cont.
Do.	Grundtrask	Au	Beowulf Gold plc.	Expl.	Cont.
Do.	Hanhimaa	Au	Dragon Mining NL	Expl.	Cont.
Do.	Jokkmokk	Cu, Au	Beowulf Gold plc.	Expl.	New
Do.	Kaaresselka	Au	Tertiary Minerals Ltd.	Expl.	New
Do.	Norra	Au, Ag, Cu, Zn	North American Gold Inc.	Expl.	New
Do.	Norrbotten	Cu, Au	Lundin Mining Corp.	Expl.	Cont.
Do.	Nottrask	Ni	Tertiary Minerals Ltd.	Expl.	Cont.
Do.	Pitea	Ag, Pb, Zn	Far West Mining Ltd.	Expl.	Cont.
Do.	Rakkurijarvi/Discovery	Cu, Au	South Atlantic Ventures Ltd.	Expl.	Cont.
Do.	Skellefte	Ni, Cu	Lundin Mining Corp.	Expl.	Cont.
Do.	Svartliden	Au	Dragon Mining NL	Devel.	Ext.
Do.	Vergbacken	Au	North Atlantic Natural Resources AB	Expl.	New
Kazakhstan	Dostyk	Au, Cu	Eureka Mining plc.	Expl.	New
Do.	Sekisovskoye	Au, Ag	Hambleton Mining plc.	Expl.	New
Do.	Shorskoye	Mo, Cu	Eureka Mining plc.	Expl.	Cont.
Do.	Uzboy	Au	Alhambra Resources Ltd.	Feas.	Ext.
Do.	Varvarinskoye	Au, Cu	European Minerals Corp.	Feas.	Ext.
Do.	Voskhod	Cr	Oriel Resources plc.	Expl.	Cont.
Do.	Vostok	Cu	Danae Resources NL	Expl.	New
Kyrgyzstan	Karakala	Au	Palladex plc.	Expl.	New
Do.	Kemin/Tiup/Oital	Au	Eurasian Minerals Inc.	Expl.	New
Do.	Kuru Tegerek	Cu, Au	do.	Feas.	Ext.
Russia	Asacha	Au	Trans-Siberian Gold plc.	Devel.	Ext.
Do.	Berezitovoye	Au, Ag	High River Gold Mines Ltd.	Feas.	Ext.
Do.	Bogunay	Au	Trans-Siberian Gold plc.	Expl.	New
Do.	East Pansky	Pt, Pd	Bema Gold Corp.	Expl.	Cont.
Do.	Kupol	Au, Ag	do.	Feas.	Ext.
Do.	Novoshirokinskoye	Au	Highland Gold Mining Ltd.	Feas.	Ext.
Do.	Pioneer	Au	Peter Hambro Mining plc.	Devel.	Ext.
Do.	Veduga	Au	Trans-Siberian Gold plc	Expl.	Cont.
Do.	Voroshilovskoye	Au	Peter Hambro Mining plc.	Expl.	New
Tajikistan	Akjilga	Ag, Cu, Sb, Bi	Marakand Minerals Ltd.	Expl.	New
Do.			Avocet Mining plc.	Expl.	New
	Akkutal/Saursai	Au	Avocet willing pic.	Expi.	INCW
Do.	Akkutal/Saursai Zeravshan	Au Au	do.	Prod.	Ext.
Do. Ukraine			<u> </u>		
	Zeravshan	Au	do.	Prod.	Ext.

¹Abbreviations used for commodities in this table include the following: Ag, silver; Au, gold; Bi, bismuth; Co, cobalt; Cr, chromium;

Cu, copper; Mo, molybdenum; Ni, nickel; Pb, lead; Pd, palladium; PGM, platinum-group metals; Pt, platinum; Sb, antimony; Zn, zinc.

²Expl., exploration; Devel., developing; Prod., producing; Feas., feasibility study ongoing.

³Cont., continuing; Ext., extension of resources; New, new site.

TABLE 4 EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{1.2}\,$

(Thousand metric tons unless otherwise specified)

								Motolo								
				A 1				Micials	A section							
				THE PARTY	TIIN I	Metal			mine output	at ,				Copper	L.	
	Alumina	na	Bauxite	e	Primary ³		Secondary		Quantity		Chromite	e.	Mine		Refined, primary ³	mary ³
		Percent		Percent		Percent		Percent	(metric	Percent	Gross	Percent	Metal	Percent		Percent
Region and/or country	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	tons)	change ⁴	weight	change ⁴	content	change ⁴	Quantity	change ⁴
Central Eurasia:																
Armenia	1	;	1	:	1	1	1	1	1	1	;	1	18	-2.2%	;	:
Azerbaijan	232	28.9%	;	;	30	59.1%	1	1	1	1	;	1	1	1	;	:
Belarus	1	1	1	1	1	1	1	1	ı	1	1	1	ı	ı	1	1
Estonia	1	;	1	;	1	:	1	1	;	1	;	:	;	;	:	;
Georgia	1	1	1	1	1	1	1	1	1	1	1	1	12	ŀ	1	1
Kazakhstan	1,468	3.5%	4,706	-0.7%	1	1	1	1	;	1	3,267	11.6%	462	-4.7%	495	14.4%
Kyrgyzstan	1	1	1	1	1	1	ı	ı	20	-50.0%	1	ı	ı	ı	1	1
Latvia	1	;	1	;	1	1	1	1	1	;	1	1	1	1	;	;
Lithuania	1	;	;	;	1	;	;	:	1	;	;	1	1	1	;	:
Moldova	1	1	1	1	1	1	1	ŀ	1	ı	1	1	1	1	;	1
Russia	3,128	-3.2%	5,500	1.1%	3,593	3.3%	1	ı	NA	NA	320	175.0%	675	1	662	-1.2%
Tajikistan	1	1	1	;	358	12.1%	1	ı	2,000	11.1%	1	1	ı	ı	;	1
Turkmenistan	1	1	1	1	1	1	1	1	1	1	;	1	1	1	;	;
Ukraine	1,562	8.9%	1	1	113	-0.4%	130	1	1	1	;	ŀ	1	1	1	;
Uzbekistan	1	1	1	;	1	1	ю	ı	1	ı	;	1	80	1	75	;
Total	6.390	2.0%	10.200	0.3%	4.090	4.2%	133	:	2.020	9.8%	3.590	17.8%	1.250	-1.8%	1.230	4.6%
Share of world total	10.7%	-2.0%	6.9%	4.8%	13.5%	-1.8%	2.7%	2.1%	1.7%	1.4%	20.3%	2.9%	8.7%	-5.8%	8.6%	1.5%
Central Eurone:																
Albania	١	1	v	١	1	١	١	ı	ı	١	290	31.8%	ı	ı	1	1
Rosnia and Herzegovina		;	480	-16 2%	121	780%	1	1	1	1			;	;	1	;
Desilla and Herzegovilla	I	!	100	-10.2%	171	0.0.7	۱ ر	!		!	:	:	۱ %	12 00%	: 5	20030
Bulgaria	1	1	1	1	1	1 80	7	I	ı	I	1	1	80	-13.0%	cc	%O.C7
Croatia	1	!	1	!	Q	358.3%	1 ;	1 ;	1	1	1	1	1	1	:	1
Czech Republic	1	1	1	1	1	1	15	-25.0%	1	1	1	1	1	1	1	1
Hungary	300	!	647	-2.9%	34	1.2%	50	1	1	1	;	1	1	1	10	;
Macedonia	1	1	1	1	1	1	8	-25.0%	I	1	:	1		-100.0%	:	;
Poland	1	:	1	:	46	1.0%	7	1	1	1	1	1	526	6.3%	550	3.9%
Romania	529	89.0%	!	;	219	11.0%	S	-33.4%	1	;	;	1	19	-19.8%	24	45.7%
Serbia and Montenegro	220	-8.2%	486	-10.0%	107	-8.3%	1	1	ı	1	1	1	24	-9.1%	12	33.3%
Slovakia	157	18.8%	1	1	175	2.9%	1	1	I	1	;	1	(5)	ı	1	-100.0%
Slovenia	-	-	-	-	121	9.6%	-		:		-	-	:	-	:	:
Total	1,270	21.8%	1,620	-9.3%	828	5.9%	82	-9.5%	1	1	290	31.8%	649	1.5%	649	5.8%
Share of world total	2.1%	17.0%	1.1%	-5.2%	2.7%	-0.1%	1.7%	-7.7%	1	1	1.6%	15.1%	4.5%	-2.6%	4.5%	2.7%
Western Europe:																
European Free Trade																
Association:																
Iceland	1	:	1	1	271	-5.4%	1	1	ı	1	1	1	ı	ı	1	1
Norway	ı	1	1	1	1,322	10.8%	349	35.8%	1	1	1	1	1	ŀ	36	-0.8%
Switzerland	-	:	1	:	45	2.3%	185	-1.0%	1	1	1	1	:	:	:	1
Total	1	1	1	1	1,640	7.5%	534	20.3%	1	ł	1	l	1	1	36	-0.8%
See footnotes at end of table.																

TABLE 4--Continued EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm 11.2}$

(Thousand metric tons unless otherwise specified)

									Metals								
	I				Aluminum	uni				Antimony,	,						
	I						Metal			mine output	nt				Copper	r	
		Alumina	ina	Bauxite	6	Primary	3	Secondary	ıry	Quantity		Chromite	e	Mine		Refined, primary3	mary ³
			Percent		Percent		Percent		Percent	(metric	Percent	Gross	Percent	Metal	Percent		Percent
	Region and/or country	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	tons)	change ⁴	weight	change ⁴	content	change ⁴	Quantity	change ⁴
	Western EuropeContinued:																
	European Union (EU):																
	Austria	1	1	1	1	1	1	160	3.2%	1	1	1	;	;	1	1	1
	Belgium	1	1	l	1	1	1	(5)	1	1	1	1	;	;	1	423	-0.5%
	Denmark-Greenland	;	1	1	1	1	1	20	11.1%	;	;	1	;	;	1	1	1
	Finland	1	1	1	1	1	1	39	20.4%	1	1	550	0.2%	16	4.0%	133	-1.9%
	France	200	1	168	1	541	21.6%	236	-1.7%	500	1	1	;	;	1	1	1
	Germany	_	0.6%	1	1	899	1.1%	704	3.4%	1	1	1	;	;	1	284	-1.0%
	Greece	160	0.2%	2,444	0.1%	167	-0.3%	3	1	1	1	1	;	;	1	1	1
	Ireland	1,200	1	!	1	;	1	;	1	;	1	1	1	;	1	1	1
	Italy	950	-2.6%	300	1	195	2.3%	619	4.2%	;	ŀ	1	;	1	1	34	25.8%
	Luxembourg	1	1	ı	1	1	1	1	1	1	1	1	:	1	I	1	1
	Malta	1	1	ı	ı	1	1	1	1	1	ŀ	1	1	1	ŀ	1	1
	Netherlands	1	1	I	1	326	17.4%	50	1	1	1	1	1	1	1	1	1
	Portugal	1	1	ı	ı	1	1	16	-11.1%	1	ŀ	1	1	96	23.4%	1	1
	Spain	1,000	1	1	1	398	2.2%	245	1	1	;	1	;	_	125.2%	208	-24.6%
	Sweden	1	1	I	1	101	0.2%	29	-3.3%	:	1	1	;	98	2.9%	210	11.1%
	United Kingdom	-	1	1	1	360	4.9%	205	1	1	-	-		+	:	-	-
	Total	4,410	-0.5%	2,910	0.1%	2,760	7.0%	2,330	2.4%	500	:	550	0.2%	198	12.5%	1,290	-3.6%
	Total Western Europe	4,410	-0.5%	2,910	0.1%	4,390	7.2%	2,860	5.3%	500	1	550	0.2%	198	12.5%	1,330	-3.5%
	Share of world total	7.4%	-4.5%	2.0%	4.5%	14.5%	1.1%	58.3%	7.5%	0.4%	-7.7%	3.1%	-12.5%	1.4%	7.9%	9.2%	-6.4%
	Total Europe and Central	12,100	2.8%	14,700	-0.9%	9,320	5.7%	3,080	4.6%	2,520	7.7%	4,430	16.1%	2,090	(9)	3,210	1.3%
.S.	Eurasia																
	Share of world total	20.3%	-1.2%	10.0%	3.5%	30.8%	-0.3%	62.7%	%8.9	2.1%	%9.0-	25.1%	1.4%	14.6%	-3.7%	22.3%	-1.7%
-1	United States ⁷	5,350	10.1%	Z	NA	2,520	%6.9-	1	1	1	1	1	1	1,160	3.9%	1,260	0.2%
	Share of world total	9.0%	5.8%	NA	NA	8.3%	-12.3%	1	1	1	:	:	:	8.1%	-0.2%	8.7%	-2.8%
	World total ⁷	59,600	4.1%	147,000	-4.3%	30,300	6.1%	4,900	-2.0%	122,000	8.3%	17,700	14.5%	14,300	4.2%	14,400	3.1%
ğ CAL	See footnotes at end of table.																

1.24

 ${\it TABLE}~4{\it --} Continued \\ {\it EUROPE}~AND~CENTRAL~EURASIA:~PRODUCTION~OF~SELECTED~MINERAL~COMMODITIES~IN~2004^{1.2}$

(Thousand metric tons unless otherwise specified)

							×	MetalsContinued	per							
							Iron and steel	el					Lead			
	Copper,	ï,	Gold,		Iron ore,		Pig iron and	pu						Refined	р	
	refined, secondary	ondary	mine output	put	mine output	nc	direct-reduced iron	d iron	Steel, crude	ıde	Mine	I	Primary	1,3	Secondary	\ \
		Percent	Quantity	Percent	Metal	Percent		Percent		Percent	Metal	Percent		Percent		Percent
Region and/or country	Quantity	change ⁴	(kilograms)	change ⁴	content	change ⁴	Quantity	change ⁴	Quantity	change ⁴	content	change ⁴	Quantity	change ⁴	Quantity	change ⁴
Central Eurasia:																
Armenia	1	1	2,100	16.7%	1	1	1	1	1	1	1	1	1	1	1	1
Azerbaijan	1	1	1	1	11	516.7%	1	:	22	1308.9%	1	;	1	:	1	1
Belarus	ı	1	1	1	1	ı	1	ı	1,920	13.3%	1	1	1	ı	ı	ı
Estonia	1	1	1	1	1	1	1	:	;	ŀ	1	;	1	;	1	1
Georgia	ı	1	2,000	1	1	1	1	1	1	1	(5)	1	;	ŀ	ŀ	ı
Kazakhstan	1	1	30,000	1	11,499	5.2%	4,400	6.3%	5,372	6.0%	33	-12.0%	157	17.9%	1	1
Kyrgyzstan	1	1	22,000	-2.1%	1	ı		ı		1	1	1	1	1	ı	ı
Latvia	1	1	1	1	1	1	1	1	554	1.5%	1	1	1	1	1	1
Lithuania	1	1	1	1	;	1	1	1	;	1	1	;	1	ı	1	ı
Moldova	ł	1	1	1	}	1	1	1	1.011	15.5%	1	;	1	1	1	ŀ
Russia	257	51.2%	169,224	-0.5%	56,200	6.0%	53,420	4.2%	65.580	4.6%	24	1	65	-1.5%	1	ı
Taiikistan	ł	1	3,000	11.1%		1		1		1	-	;	1	1	1	ŀ
Turkmenistan	1	1		١	;	1	1	1	;	ŀ	1	;	;	١	1	1
Theorem					000 35	200%	21.060	2003	30 730	2002					1	
Ukraine	1	1	- 000	5	20,000	3.0%	31,000	3.U%	56,/56	3.0%	1	!	1	ı	,	ı
Uzbekistan	:	1	93,000	3.3%	:	1	:	:	602	27.6%	1	:	:	1	:	:
Total	257	51.2%	321,000	0.7%	104,000	2.6%	88,900	4.6%	114,000	5.1%	28	-7.2%	222	11.4%	7	1
Share of world total	15.5%	24.2%	13.2%	5.3%	13.8%	-7.0%	11.7%	-38.5%	10.9%	-2.0%	1.9%	-3.8%	99.9	17.3%	0.2%	9.7%
Central Europe:																
Albania	1	1	ı	1	1	1	1	1	86	13.8%	1	1	1	ŀ	1	ı
Bosnia and Herzegovina	1	1	1	1	2	1.6%	09	1	117	-29.6%	1	;	(5)	1	1	1
Bulgaria	1	1	2,431	13.5%	27	-78.7%	1,400	1.0%	2,400	23.1%	19	-22.8%	63	-4.5%	1	ł
Croatia	1	1	1	1	1	1	1	1	45	3.7%	1	1	1	1	1	1
Czech Republic	10	-33.3%	1	1	1	ı	5,385	3.6%	7,033	3.4%	1	1	1	ı	25	-3.8%
Hungary	1	1	1	1	1	1	1,350	1.3%	1,957	-1.3%	1	;	1	1	1	1
Macedonia	1	!	1	-100.0%	1	1	1	1	315	8.1%	1	-100.0%	1	1	1	1
Poland	1	1	527	48.0%	1	1	6,400	13.6%	10,578	16.1%	87	-13.2%	57	2.3%	1	1
Romania	2	1	400	ı	74	%8.6-	4,244	3.5%	6,042	6.1%	15	-5.0%	23	1	S	١
Serbia and Montenegro	25	397.1%	400	10.2%	1	1	655	3.1%	753	4.3%	2	1	-	%0.09	1	1
Slovakia	1	!	50	1	500	150.0%	3,800	-2.4%	4,564	-3.1%	1	;	1	1	1	1
Slovenia		-	-	-				:	548	0.9%	-	:		:	16	3.9%
Total	37	68.0%	3,810	2.6%	999	40.8%	23,300	4.7%	34,500	7.3%	122	-16.9%	144	-6.2%	46	-0.9%
Share of world total	2.2%	38.0%	0.2%	7.2%	0.1%	24.0%	3.1%	-7.9%	3.3%	0.0%	4.0%	-13.8%	4.3%	-1.2%	1.4%	8.8%
Western Europe:																
European Free Trade																
Association:																
Iceland	1	1	1	!	1	1	1	1	;	1	!	:	;	1	1	1
Norway	1	1	1	1	408	20.0%	06	1	969	-0.4%	1	1	1	ŀ	1	ı
Switzerland	-	1	1	1	:	-	100	:	1,200	9.1%	1	:	-	;	6	:
Total	1	1	1	1	408	20.0%	190	1	1,900	5.4%	1	1	1	1	6	ı
See footnotes at end of table.																

 ${\it TABLE}~4{\it --} Continued$ EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm L,2}$

ified)
se sbec
otherwi
unless
tric tons
and me
(Thous

							×	MetalsContinued	ned							
							Iron and steel	iel					Lead			
	Copper,	er,	Gold,		Iron ore,		Pig iron and	pur						Refined	pe	
•	refined, secondary	condary	mine output	tput	mine output	nt	direct-reduced iron	ed iron	Steel, crude	lde	Mine		Primary ³	y ³	Secondary	ary
		Percent	Quantity	Percent	Metal	Percent		Percent		Percent	Metal	Percent		Percent		Percent
Region and/or country	Quantity	change ⁴	(kilograms)	change ⁴	content	change ⁴	Quantity	change ⁴	Quantity	change ⁴	content	change ⁴	Quantity	change ⁴	Quantity	change4
Western EuropeContinued:																
European Union (EU):																
Austria	74	14.1%	1	1	640	-5.6%	4,600	-1.6%	6,530	4.3%	1	;	;	1	20	11.1%
Belgium	1	1	1	1	1	1	8,000	1	11,698	5.1%	1	1	1	1	63	-3.1%
Denmark-Greenland	1	1	1	1	1	1	1	1	1	1	:	;	;	!	1	1
Finland	1	1	5,004	-7.5%	1	1	1,000	-83.3%	4,833	1.4%	ı	1	1	1	1	ı
France	1	1	1,312	-10.7%	1	1	13,200	3.5%	20,760	4.8%	1	;	;	-100.0%	106	9.8%
Germany	369	18.7%	1	1	58	-3.3%	30,018	1.9%	46,408	3.6%	ı	1	116	-12.3%	243	10.0%
Greece	1	1	1	1	575	-4.2%	1	1	1,967	15.6%	1	-100.0%	;	1	4	1
Ireland	1	1	1	1	1	1	1	1	1	1	99	30.9%	;	!	7	1
Italy	1	1	100	-80.0%	1	1	10,000	2.0%	15,150	-43.5%	_	1	40	150.0%	162	-18.2%
Luxembourg	1	1	I	:	1	;	1	1	2,684	0.3%	1	;	;	1	1	1
Malta	1	1	1	1	1	1	1	ł	1	1	1	;	1	1	1	1
Netherlands	1	1	1	1	1	1	5,000	1	6,848	4.0%	1	;	;	1	22	1
Portugal	1	1	1	1	10	1	100	1	720	-0.3%	1	;	;	1	4	1
Spain	35	150.0%	5,600	4.4%	1	1	4,000	1	17,684	8.6%	1	-100.0%	;	1	106	%9.9
Sweden	25	1	5,300	23.3%	14,700	4.3%	3,600	-2.7%	5,949	4.2%	34	-33.5%	30	24.8%	52	1
United Kingdom	1	1	1	1	(5)	1	10,500	2.9%	13,766	6.7%		-14.3%	126	-30.6%	120	-29.2%
Total	503	21.3%	17,300	1.6%	16,000	3.5%	90,000	-3.9%	155,000	-3.2%	101	-18.8%	312	-12.2%	806	-5.0%
Total Western Europe	503	21.3%	17,300	1.6%	16,400	3.8%	90,200	-3.9%	157,000	-3.1%	101	-18.8%	312	-12.2%	617	-4.8%
Share of world total	30.3%	-0.4%	0.7%	6.2%	2.2%	-8.6%	12.6%	-10.2%	15.0%	-9.7%	3.3%	-15.8%	9.2%	-7.6%	28.3%	4.4%
C Total Europe and Central	797	31.3%	342,000	0.8%	121,000	5.5%	202,000	%9.0	305,000	%6.0	281	-15.8%	829	-4.3%	026	-4.6%
S. Eurasia																
Share of world total	48.0%	7.9%	14.1%	5.3%	16.1%	-7.1%	34.6%	-4.6%	29.2%	-5.9%	9.1%	-12.7%	20.1%	0.8%	30.0%	4.7%
Onited States ⁷	51	-4.8%	258,000	-6.9%	34,500	12.7%	42,500	4.0%	99,700	6.4%	445	-3.3%	148	-39.4%	1,110	-2.1%
Share of world total	3.1%	-21.8%	10.6%	-2.7%	4.6%	-0.8%	6.3%	-3.9%	9.5%	-0.8%	14.4%	0.3%	4.4%	-36.3%	34.4%	7.4%
World total ⁷	1,660	21.7%	2,430,000	-4.3%	751,000	13.5%	763,000	%6.9	1,040,000	7.3%	3,090	-3.6%	3,380	-5.0%	3,240	-8.9%
Cas footpotes at and of table																

1.26

See footnotes at end of table.

TABLE 4--Continued EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm 1.2}$

(Thousand metric tons unless otherwise specified)

							M	MetalsContinued	per							
I ≅Ni			Mercury,	۷,									Silver,	ئ.	Tin,	
тр			mine output,	out,					Platin	m dno.is-ur	Platinum-group metals, refined,		mine output,	tput,	mine output,	ut,
Λĭ	Manganese ore,	e ore,	metal content	tent		Nickel			Id	primary and secondary	econdary		metal content	ntent	metal content	tent
FII	mine output	tput	Quantity		Mine		Refined	 	Palladium	u	Platinum	 	Quantity		Quantity	
I ID A	Metal	Percent	(metric	Percent	Metal	Percent				Percent	Quantity	Percent	(metric	Percent	(metric	Percent
Region and/or country	content	change ⁴	tons)	change ⁴	content	change ⁴	Quantity	change ⁴ ((kilograms)	change ⁴	(kilograms)	change ⁴	tons)	change ⁴	tons)	change ⁴
ರೆ													_			
Annenia	I	I	:	!	1	:	:	:	!	!	:	:	1	:	!	1
	1	1	1	1	1	1	1	1	1	ı	1	!	:	1	1	ı
Belarus	1	:	1	:	1	1	:	1	:	1	1	:	:	1	1	1
Estonia	1 ;	1	1	1	1	I	1	l	1	1	l	1	1 ;	1	1	1
Georgia	64	25.9%	1	1	1	1	1	1	1	1	1	:	33	1	1	1
Kazakhstan	580	1	1	1	1	1	1	1	1	ŀ	1	;	707	-14.5%	1	1
Kyrgyzstan	1	1	488	31.9%	1	1	:	1	1	1	1	:	1	1	1	1
Latvia	1	I	1	1	1	1	;	1	1	1	1	:	1	1	1	1
Lithuania	1	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	1
Moldova	1	1	1	1	:	1	1	1	1	:	1	1	:	1	1	:
Russia	23	1	20	1	315	1.6%	243	1.7%	97,000	1	28,000	1	1,040	4.0%	2,500	25.0%
Tajikistan	1	ł	30	1	1	1	1	1	1	1	1	;	5	1	1	1
Turkmenistan	1	1	1	1	1	1	1	l	1	1	1	:	1	I	1	ı
Ukraine	770	-12.5%	1	1	2	1	;	1	:	:	1	;	1	1	1	1
Uzbekistan	-	-	:	-	:	:	:	:	:	:	:	:	80	:	:	:
Total	1,440	-6.3%	568	26.2%	317	1.6%	243	1.7%	97,000		28,000	:	1,870	-4.1%	2,500	25.0%
Share of world total	14.8%	-14.1%	34.8%	38.1%	22.1%	-0.9%	25.4%	0.6%	44.7%	-4.7%	10.9%	-5.2%	9.5%	-6.7%	0.9%	11.1%
Central Europe:																
Albania	1	1	1	1	1	ı	1	ŀ	;	1	1	:	;	ı	1	1
Bosnia and Herzegovina	1	1	1	1	1	1	;	1	1	1	1	1	1	1	1	1
Bulgaria	∞	%6'065	1	1	1	1	1	1	;	1	1	;	09	20.0%	1	1
Croatia	1	1	1	1	1	1	1	1	1	ı	1	1	1	ı	ı	ı
Czech Republic	1	1	1	1	1	1	1	1	:	ı	1	1	25	1	1	1
Hungary	S	0.0%	!	1	;	1	1	:	1	1	1	;	;	1	:	1
Macedonia	1	1	1	1	S	-5.8%	1	1	1	1	1	:	1	-100.0%	1	1
Poland	1	1	1	1	1	:	;	!	10	1	20	:	1,344	8.6%	1	1
Romania	16	%L'9	1	1	1	ı	1	1	1	1	ł	1	18	1	1	1
Serbia and Montenegro	1	:	1	:	;	1	;	1	∞	1	1	:	2	-1.4%	1	1
Slovakia	1	1	1	1	1	1	1	1	1	ŀ	1	1	1	ı	1	1
Slovenia	1	:	1	:	:	:	:	1	:	:	1	;	:	1	1	:
Total	29	34.7%	I	1	5	-5.8%	1	1	18	ı	21	1	1,450	8.0%	1	1
Share of world total	0.3%	23.6%	:	-	0.4%	-8.2%	:	-	(9)	-	(9)	:	7.4%	5.0%	-	-
Western Europe:																
European Free Trade																
Association:																
Iceland	1	ı	1	1	1	1	1	1	1	ı	1	1	1	ı	ı	1
Norway	1	1	1	1	1	1	71	-7.5%	1	1	1,000	;	1	1	1	1
Switzerland	1	1	1	1	1	1	1	1	1	1	1	:	;	1	1	1
Total	1	1	1	1	1	1	71	-7.5%	:	:	1,000	1	:	1	1	:
See footnotes at end of table.																

EUROPE AND CENTRAL EURASIA—2004

TABLE 4--Continued EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm 11.2}$

(Thousand metric tons unless otherwise specified)

1								Me	MetalsContinued	ned							
	I			Mercury,	y,									Silver,		Tin,	
				mine output,	put,					Platin	um-group n	Platinum-group metals, refined,		mine output,	put,	mine output,	out,
		Manganese ore,	se ore,	metal content	itent		Nickel			id	primary and secondary	secondary		metal content	tent	metal content	tent
		mine output	ıtput	Quantity		Mine		Refined		Palladium	u	Platinum	u	Quantity		Quantity	
		Metal	Percent	(metric	Percent	Metal	Percent		Percent	Quantity	Percent	Quantity	Percent	(metric	Percent	(metric	Percent
	Region and/or country	content	change ⁴	tons)	change ⁴	content	change ⁴	Quantity	change4 ((kilograms)	change ⁴	(kilograms)	change ⁴	tons)	change ⁴	tons)	change4
_	Western EuropeContinued:																
	European Union (EU):																
ı	Austria	1	1	1	1	1	1	1	ı	1	ı	1	1	1	ı	1	1
I	Belgium	1	1	1	1	1	1	;	1	;	1	1	;	;	1	1	1
1	Denmark-Greenland	1	1	1	1	1	1	1	ı	;	1	1	1	1	1	1	1
I	Finland	1	1	24	-4.0%	4	13.0%	40	-11.7%	;	1	705	52.9%	37	20.2%	1	1
I	France	1	1	1	1	1	1	12	8.6%	1	ı	1	1	_	ı	ı	1
	Germany	1	1	1	1	1	1	1	1	1	1	50,000	;	;	1	1	1
ľ	Greece	(5)	1	1	1	22	1.4%	18	%9 .0	;	1	1	;	78	-1.5%	1	1
ı	Ireland	1	1	1	1	1	1	1	ı	1	ı	1	1	20	ı	1	1
	Italy	_	:	:	1	;	:	;	1	;	1	ı	:	3	1	1	ı
ı	Luxembourg	1	1	1	1	1	1	1	1	;	1	1	1	1	1	ŀ	1
	Malta	1	1	1	1	;	1	;	1	;	1	1	1	1	1	1	1
	Netherlands	1	1	1	1	1	I	1	1	1	1	1	1	ł	1	1	1
	Portugal	1	1	1	1	1	1	1	1	;	1	1	;	25	12.8%	200	-43.5%
	Spain	1	:	200	1	;	:	;	1	;	1	ı	:	2	%6.9	1	-100.0%
ı	Sweden	1	1	1	1	;	1	(5)	1	;	1	1	1	293	-4.6%	1	1
	United Kingdom	1	1	1	1	1	1	39	44.1%	1	1	1	:	;	1	1	1
1	Total	-	-	524	-0.2%	99	8.9%	109	7.5%	:	1	50,700	0.5%	459	-1.3%	200	-66.7%
	Total Western Europe	1	1	524	-0.2%	99	1	180	1.0%	!	1	51,700	0.5%	459	-1.3%	200	-66.7%
U	Share of world total	(9)	1	32.1%	9.2%	4.6%	6.2%	18.8%	-0.1%	1	1	20.0%	-4.8%	2.3%	-4.0%	0.1%	-70.4%
.S.	Total Europe and Central	1,470	-5.7%	1,090	12.0%	388	2.7%	423	1.4%	97,000	1	79,700	-17.8%	3,780	0.6%	2,700	3.8%
GE	Eurasia																
OL	Share of world total	15.1%	-13.6%	%6.99	22.5%	27.1%	0.1%	44.2%	0.3%	44.7%	-4.7%	30.9%	-4.9%	19.2%	-2.2%	0.9%	-7.7%
-	United States ⁷	I	1	NA	NA	1	1	1	1	13,700	-2.5%	4,040	-3.0%	1,250	0.5%	1	!
,	Share of world total	-	-	NA	NA		-		:	6.3%	-7.0%	1.6%	-8.1%	6.3%	-2.2%	-	:
CAI	World total ⁷	9,720	9.0%	1,630	-8.6%	1,440	2.5%	957	1.1%	217,000	4.9%	258,000	5.5%	19,600	2.8%	292,000	12.5%
-	See footnotes at end of table																

See footnotes at end of table.

 ${\tt TABLE}\,4{\tt -Continued}$ ${\tt EUROPE}\,{\tt AND}\,{\tt CENTRAL}\,{\tt EURASIA:}\,$ ${\tt PRODUCTION}\,{\tt OF}\,{\tt SELECTED}\,{\tt MINERAL}\,{\tt COMMODITIES}\,{\tt IN}\,2004^{1,2}$

(Thousand metric tons unless otherwise specified)

						MetalsContinued	inued							
							Tungsten,	'n,						
	Tin, metal,	tal,					mine output,	put,		Zinc, metric tons	ic tons		Industrial minerals	ninerals
	primary ³	ry ³		Titanium, metric tons	etric tons		metal content	rtent	Mine,		Metal, primary	nary	Ammonia,	nia,
	Quantity		Ilmenite	te	Metal, sponge	nge	Quantity		metal content	ntent	and secondary	dary	N content	ent
	(metric	Percent	TiO_2	Percent	Metal	Percent	(metric	Percent		Percent		Percent		Percent
Region and/or country	tons)	change ⁴	content	change ⁴	content	change ⁴	tons)	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴
Armenia	1	1	1	ı	1	1	1	1	650	-18.8%	1	ı	1	1
Azerbaijan	;	1	1	ŀ	1	1	;	;	; ;		!	ŀ	1	;
Belarus	1	1	I	;	1	1	;	;	;	;	1	1	770	6.1%
Estonia	;	1	1	ŀ	1	1	;	ł	1	1	1	ŀ	166	105.4%
Georgia	1	1	1	1	1	1	1	;	400	;	1	1	130	4.0%
Kazakhstan	1	1	1	1	16,500	32.0%	1	1	360,000	-8.9%	316,500	13.4%	1	1
Kyrgyzstan	1	1	1	;	1	1	1	1	1	1	1	1	1	1
Latvia	1	1	1	1	1	1	1	1	:	:	1	1	;	:
Lithuania	1	1	1	1	1	1	1	1	1	1	1	1	424	-8.2%
Moldova	1	1	1	1	1	1	1	:	1	;	I	:	;	:
Russia	5,500	1	1	1	26,000	13.0%	3,000	-23.1%	179,000	12.6%	240,000	-5.1%	6,800	7.7%
Tajikistan	1	;	1	1	1	1	1	1	1	:	1	1	57	14.2%
Turkmenistan	1	1	1	1	1	1	1	1	1	1	l	1	85	1
Ukraine	:	1	226,000	-12.1%	7,497	8.1%	1	;	1	1	1	1	3,900	1
Uzbekistan	:	1	1	;	;	;	;	:	1	:	30,000	1	840	3.1%
Total	5,500	1	226,000	-12.1%	27,000	-39.2%	3,000	-23.1%	540,000	-2.7%	587,000	4.4%	16,200	5.4%
Share of world total	1.8%	-9.2%	5.0%	-10.8%	84.4%	-7.8%	4.0%	-30.6%	5.9%	0.4%	5.8%	1.5%	13.9%	-0.2%
Central Europe:														
Albania	;	1	1	1	1	1	1	;	;	:	1	:	:	:
Bosnia and Herzegovina	1	1	1	1	1	1	1	;	1	1	1	1	-	;
Bulgaria	10	1	1	i	1	1	1	;	15,500	-17.6%	101,500	16.9%	320	-0.3%
Croatia	1	1	1	1	1	1	1	;	1	1	1	1	404	25.5%
Czech Republic	1	1	1	i	1	1	1	;	;	;	250	1	250	6.4%
Hungary	;	1	1	1	1	1	1	;	;	:	1	:	274	18.1%
Macedonia	1	:	1	1	1	1	1	1	1	-100.0%	1	-100.0%	:	;
Poland	;	!	!	1	1	1	!	:	154,000	0.1%	155,000	0.5%	1,985	3.8%
Romania	1	1	1	1	1	1	1	;	18,604	-15.7%	50,000	4.2%	1,172	-0.7%
Serbia and Montenegro	;	!	!	1	1	1	!	:	1	-100.0%	!	-100.0%	136	120.9%
Slovakia	1	1	1	1	1	1	1	1	1	1	1	1	220	-4.4%
Slovenia	1	1	1	1	1	:	1	:	1	:	1	1	1	:
Total	10	ł	1	1	1	1	1	1	188,000	-6.3%	307,000	0.8%	4,760	5.9%
Share of world total	(9)	1	1	1	1	1	1	;	2.1%	-3.2%	3.0%	-2.0%	4.1%	0.3%
Western Europe:														
European Free Trade														
Association: Iceland	;	;	:	;		;	;	1		;		:	:	;
Nomina			307 000	2 40%							138 500	5 70%	007	10 60.
Switzedond	!	1	307,000	7.† 7.	!	1	!	1	1	!	126,300	0/.7:6-	024	10.0%
Switzerland	:	1	1 000	1 3	:	:	:	:	:	:	1 000	1 8	25	10.3%
Total	:	1	387,000	2.4%	1	:	:	:	:	:	128,500	-5.2%	452	18.0%
See footnotes at end of table.														

TABLE 4--Continued EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm 1.2}$

(Thousand metric tons unless otherwise specified)

							Tungsten,	n,						
	Tin, metal,	tal,					mine output,	ut,		Zinc, metric tons	ric tons		Industrial minerals	inerals
	primary ³	y ³		Titanium, metric tons	tric tons		metal content	ent -	Mine,		Metal, primary	nary	Ammonia,	ia,
	Quantity		Ilmenite	63	Metal, sponge	ıge	Quantity		metal content	tent	and secondary	lary	N content	nt
	(metric	Percent	TiO_2	Percent	Metal	Percent	(metric	Percent		Percent		Percent		Percent
Region and/or country	tons)	change ⁴	content	change ⁴	content	change ⁴	tons)	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴
Western EuropeContinued:														
European Union (EU):														
Austria	ı	1	1	1	1	1	1,400	5.1%	1	1	1	1	(5)	1
Belgium	1	;	;	1	1	1	1	1	1	1	309,000	8.0%	857	-1.9%
Denmark-Greenland	1	1	1	1	1	1	ł	1	1	1	1	;	2	1
Finland	1	1	1	1	1	1	1	1	69,333	-1.9%	284,524	7.0%	19	-21.4%
France	ı	1	1	1	1	1	200	1	1	1	267,528	-0.3%	1,120	-2.9%
Germany	5,431	-11.6%	1	1	1	1	1	1	1	1	382,020	-1.6%	2,740	-2.2%
Greece	1	1	1	1	1	1	1	ŀ	1	-100.0%	1	;	132	6.7%
Ireland	ı	1	1	1	1	1	1	1	444,127	%0.9	1	1	300	I
Italy	1	1	1	1	1	ı	1	1	1	1	118,000	4.1%	532	12.0%
Luxembourg	1	1	1	1	1	1	1	ł	1	1	1	1	1	1
Malta	1	1	1	1	1	1	1	1	1	1	1	;	1	1
Netherlands	1	1	1	1	1	1	1	1	1	1	228,100	2.4%	1,970	12.6%
Portugal	1	-100.0%	1	1	1	1	700	-2.1%	1	1	3,000	1	244	-0.3%
Spain	:	;	;	1	1	1	1	1	1	-100.0%	531,700	2.3%	404	-6.5%
Sweden	1	1	1	1	1	1	1	1	160,600	-13.6%	;	1	1	1
United Kingdom	:	:	:	-	-	-	-	:	-	:	:	-100.0%	1,071	2.6%
Total	5,431	-14.6%	!	1	1	1	2,600	2.1%	674,000	-6.5%	2,120,000	1.4%	9,430	1.7%
Total Western Europe	5,431	-14.6%	387,000	:	-	:	2,600	2.1%	674,000	-6.5%	2,250,000	1.0%	6,880	2.3%
Share of world total	1.8%	671.3%	8.5%	3.9%	1	1	3.5%	-7.9%	7.4%	-3.5%	22.2%	-1.7%	8.5%	-3.1%
Total Europe and Central	10,900	320.6%	613,000	-3.5%	27,000	-39.2%	5,600	-13.1%	1,400,000	-5.1%	3,150,000	1.6%	30,800	4.5%
Eurasia														
Share of world total	3.6%	-16.3%	13.5%	-2.1%	84.4%	-7.8%	7.5%	-21.6%	15.3%	-2.0%	31.0%	-1.2%	26.6%	-1.1%
United States ⁷	1	1	273,000	1	1	1	1	1	739,000	-3.7%	305,000	0.9%	8,850	2.8%
Share of world total	1	:	6.0%	1.4%	:	1	-	-	8.1%	-0.6%	3.0%	-1.8%	2.6%	-2.6%
World total ⁷	304,000	10.1%	4,550,000	-1.4%	32,000	-34.1%	74,300	10.8%	9,140,000	-3.2%	10,200,000	2.8%	116,000	2.6%

 ${\it TABLE}~4{\it --} Continued \\ {\it EUROPE}~AND~CENTRAL~EURASIA:~PRODUCTION~OF~SELECTED~MINERAL~COMMODITIES~IN~2004^{1.2}$

(Thousand metric tons unless otherwise specified)

				Indu	Industrial mineralsContinued	Continued										
			Diamond, natural,	atural,						Ì			Mineral fuels	els		
			gemstones and	and	Phosphate rock.	ock.	Potash.						Coal			
	Cement, hydraulic	draulic	industrial	al	P ₂ O ₅ content	ent	K ₂ O equivalent	alent	Salt		Anthracite	ite	Bituminous	snc	Lignite	
		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent
Region and/or country	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴
Central Eurasia:																
Armenia	475	23.7%	1	1	;	1	1	1	32	0.3%	1	+	;	1	1	1
Azerbaijan	1,427	40.9%	1	1	1	1	;	;	6	20.8%	1	;	;	1	;	1
Belarus	2,731	10.5%	1	1	1	1	4,300	1.7%	300	ŀ	1	1	1	ı	1	1
Estonia	615	21.5%	1	ı	1	1		1	:	;	1	;	1	1	1	1
Georgia	300	-29.3%	I	1	1	1	1	1	:	ı	1	;	8	ı	1	1
Kazakhstan	3.662	41.9%	1	1	29	36.4%	1	1	1	1	1	;	83,954	2.3%	2.921	2.3%
Kvrgvzstan	800	5.7%	1	1	; 1	: 1	;	ł	-	1	1	;	111	10.6%	344	10.6%
Latvia	284	-3.9%	1	1	1	1	1	1	1	1	1	;	1	1	1	1
Lithuania	753	%2.92	1	١	1	1	1	١	1	1	١	;	1	١	1	ı
Moldova	94	20 CCL	1	١	1	١	1	1	1	١	١	1	;	ı	ŀ	ŀ
Bussia	45,600	11.2%	35,600	7 9%	4 420	1	5 000	5.5%	2.800	1	16,000	%90	185 000	2 9%	82,000	3 8%
Taiiltietan	197	16.4%	000,00	2	67		000,0	5/ 5:	2,000		10,000	200	000,001	08 30%	000,70	2,0,0
Tajikistan	154	10:4 %	1	l	1	l	1	1	1 7	l	l	1	76	96.376	l	l
Turkmenistan	450	1 1	1	ı	1	1	1 ;	1 1	215	ı	1 1	1 3	1 3	1 1	1 6	1 3
Ukraine	10,635	19.5%	1	1	1	1	20	-16.7%	2,300	1	18,295	26.8%	62,100	-2.8%	3,000	215.8%
Uzbekistan	4,000	:	:	:	102	:	:	1	:	1	1	:	71	42.6%	2,629	41.4%
Total	72,400	13.4%	35,600	7.9%	4,590	0.4%	9,350	3.5%	5,660	(9)	34,300	13.1%	331,000	1.7%	90,900	7.0%
Share of world total	3.4%	5.7%	39.0%	-6.5%	10.3%	-2.2%	30.9%	-2.0%	2.5%	-3.8%	11.0%	8.4%	7.8%	-4.8%	10.1%	6.3%
Central Europe and Balkans:																
Albania	1	1	1	1	1	1	1	1	25	15.5%	1	;	1	1	18	1
Bosnia and Herzegovina	1,045	17.4%	1	ı	1	1	1	1	80	-4.8%	1	:	1	1	000,6	-0.1%
Bulgaria	2,100	1	1	1	1	1	;	ł	1,900	1.0%	1	-100.0%	170	286.4%	26,456	-4.3%
Croatia	3,811	4.3%	1	1	1	1	1	1	23	-26.5%	1	;	1	1	1	1
Czech Republic	3,709	7.0%	1	1	1	1	1	1	;	1	1	1	14,648	9.5%	48,290	-4.2%
Hungary	3,580	0.2%	1	1	1	1	1	1	1	1	1	;	670	0.4%	12,730	0.3%
Macedonia	820	6.8%	1	1	;	1	;	1	;	!	1	;	;	!	8,500	1.7%
Poland	12,837	10.2%	1	1	1	1	1	1	5,142	10.3%	1	;	101,230	-1.7%	61,197	0.5%
Romania	6,210	3.6%	1	1	1	1	;	;	2,398	-0.8%	1	;	1	-90.0%	31,591	-4.4%
Serbia and Montenegro	2,240	8.0%	l	1	1	1	1	1	75	-4.2%	1	;	50	-7.4%	35,642	2.1%
Slovakia	3,158	0.3%	1	1	;	ı	1	:	95	:	1	;	;	:	2,952	-4.1%
Slovenia	1,300	1		-		-	-	-	125	:		:	-	:	4,809	-0.4%
Total	41,400	2.6%	1	1	1	1	1	1	098'6	5.0%	1	-100.0%	117,000	-0.3%	241,000	-1.5%
Share of world total	1.9%	-1.6%	1	1	:	-	:	1	4.3%	1.0%	1	:	2.8%	-6.6%	26.9%	-2.1%
Western Europe:																
European Free Trade																
Association:																
Iceland	06	0.2%	1	1	1	1	:	1	5	2.2%	1	1	1	ı	1	ı
Norway	1,870	0.5%	1	1	1	1	1	1	1	ı	1	1	300	ı	1	1
Switzerland	3,800	2.7%	1	1	:	1	1	1	45	1	1	:	:	1	1	1
Total	5,760	2.0%	1	1	:	1	1	:	50	-18.0%	1	:	300	1	:	1
See footnotes at end of table.																

 ${\it TABLE}~4{\it --} Continued$ EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{\rm L,2}$

(Thousand metric tons unless otherwise specified)

				Indı	Industrial mineralsContinued	Continued										
			Diamond, natural,	atural,									Mineral fuels	nels		
			gemstones and	s and	Phosphate rock,	ock,	Potash,						Coal			
	Cement, hydraulic	ydraulic	industrial	al	P ₂ O ₅ content	ant	K ₂ O equivalent	alent	Salt		Anthracite	ite	Bituminous	snoi	Lignite	e
		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent
Region and/or country	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴	Quantity	change ⁴
Western EuropeContinued:																
European Union (EU):																
Austria	3,800	1	1	1	;	1	;	:	1	1	1	;	;	1	1,200	4.2%
Belgium	8,000	1	1	ŀ	1	ŀ	1	1	1	1	1	1	1	1	1	1
Denmark-Greenland	2,030	0.5%	1	1	(5)	1	;	1	610	0.8%	1	;	;	1	1	1
Finland	1,691	13.3%	1	ı	15	50.0%	1	1	1	ı	1	1	1	1	1	1
France	20,960	99.9	1	1	1	1	1	:	6,910	3.6%	13	-90.8%	147	-90.7%	1	-100.0%
Germany	31,954	-2.4%	1	ı	1	ı	3,626	1.8%	18,696	14.7%	2,415	-6.7%	23,276	0.8%	181,926	1.6%
Greece	15,000	-2.0%	1	1	1	ı	;	1	190	-1.1%	1	;	;	1	68,000	-2.0%
Ireland	2,500	1	1	1	;	1	;	:	;	1	1	;	;	1	1	1
Italy	40,000	1	1	ı	1	ı	1	1	3,800	ı	1	1	1	1	10	1
Luxembourg	700	1	1	:	1	;	;	1	1	١	1	:	;	1	1	1
Malta	1	1	1	1	1	1	1	1	5	1	1	1	;	1	1	1
Netherlands	3,400	1	1	1	1	1	1	1	5,000	;	1	;	;	1	1	1
Portugal	10,000	1	1	1	1	1	1	1	009	-0.3%	1	;	1	1	1	1
Spain	42,000	-4.5%	1	;	1	;	590	-0.7%	4,000	%6.0	3,800	-1.6%	5,500	~9.0-	8,000	0.2%
Sweden	2,700	1.9%	1	1	1	1	1	1	1	1	1	:	1	1	1	1
United Kingdom	11,250	0.3%	-	-		-	009	-3.4%	5,700	-	1,200	-20.0%	26,000	-2.6%	-	-
Total	196,000	-0.8%	-		15	50.0%	4,820	0.8%	45,500	6.2%	7,430	-8.2%	54,900	-3.5%	259,000	0.6%
Total Western Europe	202,000	-0.7%		-	15	20.0%	4,820	0.8%	45,600	6.2%	7,430	-8.2%	55,200	-3.5%	259,000	%9.0
Share of world total	9.4%	-7.4%	1	1	0.03%	46.2%	15.9%	-4.6%	19.9%	2.1%	2.4%	-12.1%	1.3%	%9.6-	28.9%	(9)
Total Europe and Central	315,000	3.1%	35,600	7.9%	4,600	0.5%	14,200	2.6%	61,100	5.4%	41,700	8.6%	503,000	9.0	591,000	0.6%
De Eurasia																
Share of world total	14.6%	-3.9%	39.0%	-6.5%	10.3%	-2.0%	46.8%	-2.9%	26.7%	1.4%	13.4%	4.0%	11.9%	-5.8%	65.9%	(9)
United States ⁷	000,66	5.0%	1	1	10,400	-1.8%	1,300	18.2%	46,500	6.4%	1,550	24.8%	932,000	1.6%	75,800	1.3%
Share of world total	4.6%	-2.1%	:	:	23.4%	-4.3%	4.3%	11.8%	20.4%	2.3%	0.5%	19.6%	22.0%	-4.8%	8.4%	0.7%
World total ⁷	2,150,000	7.3%	181,000	15.5%	44,500	2.6%	30,200	5.7%	228,000	4.0%	312,000	4.4%	4,240,000	6.7%	898,000	0.6%
Cas footnotes at and of table																

1.32

See footnotes at end of table.

TABLE 4--Continued EUROPE AND CENTRAL ASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN $2004^{\rm L\cdot 2}$

(Thousand metric tons unless otherwise specified)

		Natural gas				Petroleum	m			
	Dry		Plant liquids	nids	Crude		Refinery products	oducts	Uranium,	m,
	Quantity		Quantity		Quantity		Quantity		U content	nt
	(million		(thousand		(thousand		(thousand	I,	Quantity	
	cubic	Percent	42-gallon	Percent	42-gallon	Percent	42-gallon	Percent	(metric	Percent
Region and/or country	meters)	change ⁴	barrels)	change ⁴	barrels)	change ⁴	barrels)	change ⁴	tons)	change ⁴
Central Eurasia:										
Armenia	1	1	1	1	1	1	1	:	!	1
Azerbaijan	4,995	-2.6%	l	1	110,000	-2.5%	48,000	6.2%	1	;
Belarus	250	-1.6%	1	1	13,000	-2.8%	140,000	20.9%	1	1
Estonia	1	1	1	1	ı	1	1	;	;	i
Georgia	9	-65.7%	1	1	720	-29.9%	280	105.1%	1	;
Kazakhstan	14,400	-2.0%	1	1	373,000	11.7%	69,000	7.4%	3,320	12.5%
Kyrgyzstan	29	7.4%	;	1	540	7.3%		:	1	;
Latvia	1	;	1	;	1	;	!	;	;	;
Lithuania	1	;	1	1	2,200	-21.8%	56.000	13.8%	1	;
Moldova	1	1	1	1		1		:	1	;
Russia	633.950	2.8%	166.400	77.4%	3,300,000	10.0%	1.400.000	0.4%	3,300	4.8%
Taiikistan	36	8.5%	1	. 1	140	7.6%	1	: 1	3 1	
Turkmenistan	58.570	%60-	1	1	74.000	0.7%	1	1	1	;
Ilkraine	19	-2 4%	1		30 700	5.1%	Z	Z	006	
IIzbekistan	50.864	4 10%	1		48 000	% F. 8-	Y Z	NA	2.016	260%
Total	100,000	25.0	166 400	77 40	000,01	0.9%	1740,000	710	2,010	1100
Share of world total	78 16	0.5%	100,400	63.7%	3,960,000	9.4%	1,740,000	%T'/- 8 0%	27.00%	0.11.0%
Central Europe and Ballone.	771.07	9/ 5:0-	9.5	02:1	2/0:+1	2,4	2/t:0	-0.0 /0	7 6.4.3	9.50
Albania	12	30%	1	1	009 6	% 5%	;	;	1	;
Boenia and Harzagovina	1	2	1		2001	2	208	20805	1	
Delemia and indicessorma	,,,,	2000			0.50	11110	100	0.10	9	
Bulgaria	555	2921.3%	I	1	219	7.11	23,000	1 8	000	1
Croatia	7 :	0.5%	I	I	7,400	-5.0%	33,000	o% 7. C-	1 !	1 3
Czech Republic	175	33.6%	1	:	1,880	-5.2%	35,000	:	435	-5.0%
Hungary	3	3.0%	1	1	8,400	-2.8%	40,000	1	!	:
Macedonia	1	1	1	1	1	1	5,000	-16.7%	1	1
Poland	5,400	1.6%	1	:	6,600	16.3%	120,000	-3.2%	;	1
Romania	13,290	%6.0	1	1	41,000	-3.5%	75,000	:	1	1
Serbia and Montenegro	300		1	:	4,800	-3.4%	17,000	-2.7%	!	1
Slovakia	200 8	-4.8%	1	1	350	1	44,500	11.3%	1	;
Slovenia	5	-8.2%	1	1	2,500	-30.0%	1	:	1	;
Total	19,700	2.6%	1	1	75,800	-2.9%	400,000	0.6%	1,040	-2.2%
Share of world total	0.7%	(9)	1	;	0.3%	-5.5%	1.5%	-0.5%	2.7%	-11.5%
Western Europe:										
European Free Trade										
Association:										
Iceland	1	1	1	1	ı	1	1	1	1	1
Norway	78,465	7.3%	42,000	1	1,020,000	-2.1%	134,000	1.5%	1	1
Switzerland	1	1	1	1	1	1	20,300	;	1	1
Total	78,465	7.3%	42,000	1	1,020,000	-2.1%	154,000	1.3%	:	:
			,		,					

 ${\it TABLE~4-Continued}$ EUROPE AND CENTRAL ASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2004 $^{1.2}$

(Thousand metric tons unless otherwise specified)

					Minerals fuelsContinued	ontinued				
,		Natural gas	gas			Petroleum	mr			
. '	Dry		Plant liquids	ids	Crude		Refinery products	oducts	Uranium,	٦,
	Quantity		Quantity		Quantity		Quantity		U content	ıt
	(million		(thousand		(thousand		(thousand		Quantity	
	cubic	Percent	42-gallon	Percent	42-gallon	Percent	42-gallon	Percent	(metric	Percent
Region and/or country	meters)	change ⁴	barrels)	change ⁴	barrels)	change ⁴	barrels)	change ⁴	tons)	change ⁴
Western EuropeContinued:										
European Union (EU):										
Austria	1,200	1	1	1	7,000	0.3%	86,700	-0.5%	1	1
Belgium	:	1	1	1	1	;	262,000	1	1	1
Denmark-Greenland	7,300	1	47,000	2.2%	135,000	1.5%	59,800	0.2%	1	1
Finland	1	1	1	1	1	1	61,000	11.0%	1	1
France	1,330	-12.5%	1	ı	8,550	%9.9-	606,000	-0.9%	1	1
Germany	19,300	%L'-L	1	1	25,400	-7.7%	1,120,000	-0.4%	65	-26.0%
Greece	30	-16.7%	140	-60.0%	1,100	7.2%	172,000	-0.4%	1	1
Ireland	2,500	1	1	1	1	1	21,000	1	1	1
Italy	12,570	-3.3%	350	1	30,000	;	691,000	1	:	1
Luxembourg	1	1	1	1	1	1	I	1	1	1
Malta	1	1	1	1	1	;	1	1	1	1
Netherlands	74,000	1	160,000	1	17,000	1	608,000	1	1	1
Portugal	1	1	1	1	1	;	98,500	1	1	1
Spain	550	1	1	1	2,400	-0.2%	406,000	0.5%	170	1
Sweden	1	1	1	1	1	;	159,000	1.3%	1	1
United Kingdom	100,000	1	60,000	1	812,000	-0.4%	900,000	1	1	1
Total	219,000	-1.0%	267,000	0.3%	1,040,000	1	5,010,000		235	-8.9%
Total Western Europe	297,000	1.1%	309,000	0.3%	2,060,000	-1.0%	5,170,000	0.19%	235	-8.9%
Share of world total	10.8%	-1.9%	16.6%	-7.5%	2.6%	-3.5%	19.1%	-0.9%	0.6%	-17.6%
Total Europe and Central	1,090,000	2.1%	476,000	18.2%	6,090,000	-3.0%	7,310,000	-1.7%	10,800	9.1%
Eurasia										
Share of world total	39.7%	-0.8%	25.5%	9.1%	22.4%	-5.5%	27.0%	-2.8%	28.2%	-1.3%
United States ⁷	531,000	-1.8%	662,000	5.5%	1,980,000	-4.3%	6,500,000	1.9%	885	15.0%
Share of world total	19.3%	-4.6%	35.5%	-2.6%	7.3%	-7.0%	24.0%	0.9%	2.3%	4.0%
World total ⁷	2,750,000	3.0%	1,870,000	8.4%	27,200,000	2.8%	27,100,000	1.0%	38,300	10.5%
		-								

NA Not available. W Withheld to avoid disclosing proprietary data; not included in region and world totals. -- Zero or zero percent.

²Totals may not add due to independent rounding. Percentages are calculated on unrounded data. Table includes data available as of March 31, 2006.

Some of the individual entries in this table may differ from those that appear in individual country production tables elsewhere in this volume owing to the inclusion in this table of data received at a later date.

Percent change is calculated for each region and/or country by taking 100 times the difference of the current year's data over last year's data minus 100. Primary production also includes undifferentiated (primary and secondary) production for some countries listed.

⁵Less than 1/2 unit.

⁶Less than 0.1 percent.

⁷U.S. data and world totals are rounded to no more than three significant digits.

⁸Reported as manufactured coke oven gas.

 ${\it TABLE 5} \\ {\it EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF BAUXITE} \\$

(Thousand metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
France	490	75	185	168	150	100	100
Greece	2,490	2,200	1,970	2,440	2,500	2,000	2,000
Italy	(1)	11	300	300	200	100	
Total	2,980	2,290	2,460	2,910	2,900	2,200	2,100
Central Europe:							
Albania	26		5	5	5	5	5
Bosnia and Herzegovina	1,700	75	255	480	500	500	550
Croatia	309	2					
Hungary	2,560	1,020	1,050	647	1,000	1,000	1,000
Romania	243	175					
Serbia and Montenegro	940	60	630	486	700	700	800
Total	5,780	1,330	1,940	1,620	2,200	2,200	2,400
Central Eurasia:							
Kazakhstan	3,100	3,071	3,730	4,710	5,000	5,200	5,500
Russia	4,000	4,000	5,270	5,500	6,500	7,000	8,000
Total	7,100	7,070	9,000	10,200	12,000	12,000	14,000
Regional total	15,900	10,700	13,400	14,700	17,000	16,000	19,000

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

¹Less than 1/2 unit.

 ${\it TABLE~6} \\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~ALUMINUM~(PRIMARY)} \\$

(Thousand metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
France	325	366	441	541	500	400	400
Germany	720	575	644	668	650	600	550
Greece	149	144	168	167	150	150	150
Iceland	87	100	224	271	350	500	600
Italy	232	178	190	195	200	190	190
Netherlands	269	216	302	326	330	330	330
Norway	894	903	1,030	1,320	1,100	900	800
Spain	353	362	366	398	400	400	400
Sweden	126	118	101	101	100	110	110
Switzerland	72	21	36	45	45	45	40
United Kingdom	294	238	305	360	350	350	300
Total	3,520	3,220	3,810	4,390	4,200	4,000	3,900
Central Europe:							
Bosnia and Herzegovina	89	15	90	116	130	130	130
Croatia	74	31	15	6			
Hungary	105	29	34	34	35	35	35
Poland	46	56	47	46	53	53	53
Romania	178	144	179	219	220	220	220
Serbia and Montenegro	81	17	88	107	120	120	120
Slovakia	30	38	137	175	170	170	170
Slovenia	100	58	84	121	120	120	120
Total	703	388	674	824	850	850	850
Central Eurasia:							
Azerbaijan	50	27		30	40	60	110
Kazakhstan					20	120	200
Russia	2,700	2,720	3,250	3,590	3,800	4,200	4,500
Tajikistan	450	230	269	358	400	500	600
Ukraine	100	98	104	113	120	120	120
Total	3,300	3,080	3,620	4,090	4,400	5,000	5,500
Regional total	7,520	6,690	8,100	9,300	9,500	9,900	10,000

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

TABLE 7 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF ALUMINUM (SECONDARY)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	36	94	158	160	150	150	100
Belgium	7	4	1	(1)	1		
Denmark-Greenland	11	35	16	20	20	22	22
Finland	24	35	45	39	37	37	35
France	208	231	260	236	225	225	200
Germany	590	531	572	704	750	800	850
Greece	3	3	3	3	3	2	2
Italy	350	412	658	619	600	500	500
Netherlands	134	192	119	50	50	50	50
Norway	49	56	255	349	350	350	350
Portugal	NA	NA	18	16	16	15	15
Spain	63	107	241	245	250	250	200
Sweden	30	23	26	29	30	32	32
Switzerland	34	28	189	185	100	50	50
United Kingdom	121	282	285	205	200	200	150
Total	1,660	2,030	2,850	2,860	2,800	2,700	2,600
Central Europe:							
Bosnia and Herzegovina	10	10	5	5	5	5	5
Bulgaria	5	5	8	2	2	2	2
Czech Republic		48	40	15	50	50	50
Hungary	30	4	55	50	70	70	70
Macedonia	5	4	5	3	5	10	10
Poland		5	5	7	5	5	5
Romania	10	3	2	5	5	5	5
Total	60	79	120	87	140	150	150
Central Eurasia: ²							
Ukraine	NA	98	129	130	130	130	140
Uzbekistan	NA	3	2	3	3	3	3
Total	NA	101	131	133	130	130	140
Regional total	1,720	2,210	3,100	3,080	3,100	3,000	2,900

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

¹Less than 1/2 unit.

²Information about the amount of secondary aluminum collected and processed in the other member countries of the Commonwealth of Independent States is unavailable.

 ${\it TABLE~8}\\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~COPPER~(MINE~OUTPUT)}$

(Cu content in thousand metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Finland	13	10	14	16	16	16	16
France	(1)	(1)	(1)				
Norway	20	7					
Portugal	160	130	76	96	95	90	90
Spain	13	25	23	1	1	1	
Sweden	74	84	78	86	87	88	88
United Kingdom	1						
Total	281	255	192	198	200	190	190
Central Europe:							
Albania	12	4					
Bulgaria	26	76	92	80	90	90	90
Macedonia	7	6	6		5	5	10
Poland	329	384	509	526	550	550	550
Romania	32	25	16	19	20	25	25
Serbia and Montenegro	110	75	56	24	40	50	75
Slovakia	3		(1)	(1)			
Total	519	569	679	649	710	720	750
Central Eurasia:							
Armenia	15	8	12	18	25	30	40
Georgia	10	5	8	12	15	20	30
Kazakhstan	400	200	430	462	500	520	600
Russia	650	525	570	675	750	800	850
Uzbekistan	70	40	70	80	85	90	100
Total	1,150	778	1,090	1,250	1,400	1,500	1,600
Regional total	1,950	1,600	1,960	2,100	2,300	2,400	2,500

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

¹Less than 1/2 unit.

 ${\it TABLE~9}$ EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED COPPER (PRIMARY AND SECONDARY)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	36	54	79	74	70	50	50
Belgium	332	376	423	423	380	360	360
Finland	65	74	114	133	130	140	140
France	44	43	2				
Germany	476	616	710	653	650	650	650
Italy	83	98	73	34	30	30	25
Norway	37	34	27	36	36	38	38
Spain	171	164	316	243	300	250	250
Sweden	97	105	130	235	250	260	270
United Kingdom	122	55	3				
Total	1,460	1,620	1,880	1,830	1,800	1,800	1,800
Central Europe:							
Albania	11	3					
Bulgaria	24	29	32	53	50	50	50
Czech Republic	21	20	20	10	15	20	20
Hungary	13	11	12	10	5	5	5
Poland	346	407	486	550	550	550	550
Romania	44	27	19	26	30	30	30
Serbia and Montenegro	151	79	46	37	50	50	60
Slovakia	25	29					<u></u>
Total	635	604	615	686	700	710	720
Central Eurasia:							
Kazakhstan	365	256	395	495	550	600	650
Russia	700	560	840	919	1,000	1,100	1,200
Uzbekistan	110	95	85	75	90	100	120
Total	1,180	911	1,320	1,490	1,600	1,800	2,000
Regional total	3,280	3,140	3,820	4,010	4,100	4,300	4,500

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

 ${\it TABLE~10}$ EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF GOLD (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Finland	2,810	2,060	4,950	5,000	5,200	5,300	5,300
France	4,240	4,620	2,630	1,310			
Italy			791	100	100	100	100
Portugal	276						
Spain	6,810	4,130	4,310	5,600	6,000	6,000	5,000
Sweden	6,330	6,530	3,570	5,300	5,600	5,800	6,000
Total	20,500	17,300	16,300	17,300	17,000	17,000	16,000
Central Europe:							
Bulgaria	2,400	3,100	2,350	2,430	2,500	3,000	3,500
Macedonia		760	750		300	300	300
Poland	300	510	367	527	450	450	450
Romania	3,000	4,000	500	400	600	600	600
Serbia and Montenegro	8,170	3,040	1,120	400	3,000	3,000	3,000
Slovakia	500	518	306	50	100	100	100
Total	14,400	11,900	5,390	3,810	7,000	7,500	8,000
Central Eurasia:							
Armenia	1,000	514	600	2,100	3,000	3,500	4,000
Georgia	2,000	500	2,920	2,000	3,000	3,500	4,000
Kazakhstan	30,000	18,200	28,200	30,000	30,000	30,000	35,000
Kyrgyzstan	2,000	1,500	22,000	22,000	22,000	25,000	27,000
Russia	183,000	132,000	143,000	169,000	170,000	180,000	200,000
Tajikistan	2,500	500	2,700	3,000	5,000	6,000	8,000
Uzbekistan	65,000	65,000	85,000	93,000	100,000	110,000	120,000
Total	286,000	218,000	284,000	321,000	330,000	360,000	400,000
Regional total	321,000	247,000	306,000	342,000	350,000	380,000	420,000

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

TABLE 11 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF IRON ORE (MINE OUTPUT)

(Fe content in thousand metric tons)

	Average iron							
Region and country	content	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:								
Western Europe:								
Austria	58%	653	709	586	640	600	500	500
France	28%	2,790	432					
Germany ¹	14%	12	10	65	58	55	53	51
Greece	38%	861	800	575	575	580	580	500
Norway	62%	1,350	1,350	369	408	360	340	320
Portugal	36%	5	5	12	10	8	8	6
Spain	38%	1,440	960					
Sweden	65%	12,900	13,900	13,600	14,700	15,000	15,000	15,000
United Kingdom	54%	12	1	1	(2)	(2)	(2)	(2)
Total	XX	20,000	18,200	15,100	16,300	17,000	16,000	16,000
Central Europe:								
Albania	45%	410						
Bosnia and Herzegovina	53%	1,580	52	182	64	500	550	550
Bulgaria	50%	270	265	178	27	20	20	20
Czech Republic	29%	60	10	6				
Macedonia	40%	3	1	9	1	1	1	1
Poland	50%	(2)						
Romania	52%	275	147	55	74	75	75	75
Serbia and Montenegro	45%	650	61	1				
Slovakia	34%	480	225	255	500	200	200	200
Total	XX	3,730	761	686	666	800	850	850
Central Eurasia:								
Azerbaijan	57%	275	1		11	15	20	25
Kazakhstan	57%	13,000	8,000	9,200	11,500	13,000	14,000	15,000
Russia	58%	60,000	46,000	50,000	56,200	57,000	58,000	60,000
Ukraine	55%	50,000	29,000	30,600	36,000	36,000	36,000	36,000
Total	XX	123,000	83,000	89,800	104,000	110,000	110,000	110,000
Regional total	XX	147,000	102,000	106,000	121,000	130,000	130,000	130,000

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

¹Iron ore is used domestically as an additive in cement and other construction materials but is of too low a grade to use in the steel industry.

²Less than 1/2 unit.

TABLE 12
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PIG IRON AND DIRECT-REDUCED IRON

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	3,070	3,840	4,320	4,600	4,500	4,500	4,500
Belgium	8,520	9,200	8,470	8,000	8,000	8,000	8,000
Finland	2,280	2,240	2,980	1,000	1,000	1,000	1,000
France	14,400	12,900	13,700	13,200	13,000	13,000	13,000
Germany	29,600	30,000	30,800	30,000	30,000	30,000	30,000
Italy	11,900	11,700	11,200	10,000	10,000	10,000	10,000
Netherlands	4,960	5,650	4,970	5,000	5,000	4,500	4,500
Norway	54	70	60	90	90	100	100
Portugal	339	411	382	100	100	100	100
Spain	5,540	5,130	4,060	4,000	4,000	4,000	4,000
Sweden	2,830	3,140	3,150	3,600	3,700	3,800	3,800
Switzerland	129	100	100	100	100	100	100
United Kingdom	12,300	12,200	11,000	10,500	10,000	10,000	10,000
Total	95,900	96,600	95,200	90,200	89,000	89,000	89,000
Central Europe:							
Albania	96						
Bosnia and Herzegovina	1,280	100	57	60	50	50	50
Bulgaria	1,140	1,580	1,220	1,400	1,400	1,400	1,400
Czech Republic	5,800	5,290	4,620	5,390	5,000	5,000	5,000
Hungary	1,420	1,520	1,340	1,350	1,300	1,300	1,300
Macedonia	53						
Poland	8,660	7,370	6,490	6,400	5,300	5,300	5,300
Romania	6,360	4,200	3,070	4,240	5,300	5,300	5,300
Serbia and Montenegro	767	108	563	655	600	600	600
Slovakia	3,560	3,210	3,170	3,800	3,500	3,500	3,500
Total	29,100	23,400	20,500	23,300	22,000	22,000	22,000
Central Eurasia:							
Kazakhstan	4,600	3,440	4,000	4,400	4,500	4,700	4,800
Russia	47,500	41,400	46,500	53,400	56,000	58,000	60,000
Ukraine	35,000	20,000	25,700	31,100	31,000	31,000	31,000
Total	87,100	64,800	76,200	88,900	92,000	94,000	96,000
Regional total	212,000	185,000	192,000	202,000	200,000	210,000	210,000

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

TABLE 13 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF CRUDE STEEL

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	4,240	4,540	5,730	6,530	6,000	6,000	5,000
Belgium	11,400	11,600	11,600	11,700	12,000	12,000	12,000
Denmark-Greenland	610	654	803				
Finland	2,860	3,180	4,100	4,830	5,000	5,000	5,000
France	19,000	18,100	21,000	20,800	20,000	20,000	20,000
Germany	44,000	42,100	46,400	46,400	47,000	47,000	47,000
Greece	999	939	1,090	1,970	1,900	1,900	1,900
Ireland	326	309	342				
Italy	25,400	27,800	26,500	15,200	15,000	15,000	15,000
Luxembourg	3,560	2,610	2,570	2,680	2,700	2,600	2,600
Netherlands	5,410	6,410	5,670	6,850	6,500	6,500	6,500
Norway	376	503	620	695	710	700	700
Portugal	744	829	1,100	720	800	800	800
Spain	12,700	14,000	15,800	17,700	17,000	17,000	17,000
Sweden	4,450	4,950	5,230	5,950	6,000	6,000	6,000
Switzerland	970	1,000	1,020	1,200	1,200	1,000	1,000
United Kingdom	17,900	17,600	15,300	13,800	14,000	14,000	13,000
Total	155,000	157,000	165,000	157,000	160,000	160,000	150,000
Central Europe:							
Albania	65	22	65	98	100	100	100
Bosnia and Herzegovina	1,650		134	117	250	500	600
Bulgaria	2,190	2,720	2,020	2,400	2,500	2,500	2,500
Croatia	424	45	71	45	45	45	45
Czech Republic	10,000	7,190	6,220	7,030	7,000	7,000	7,000
Hungary	2,960	1,870	1,970	1,960	2,000	2,000	2,000
Macedonia	247	33	161	315	300	300	300
Poland	13,600	11,900	10,500	10,600	10,000	9,000	9,000
Romania	9,760	6,560	4,670	6,040	5,500	5,500	5,500
Serbia and Montenegro	1,010	180	682	753	750	750	750
Slovakia	4,780	3,960	3,730	4,560	4,500	4,500	4,500
Slovenia	504	407	519	548	500	500	500
Total	47,200	34,900	30,700	34,500	33,000	33,000	33,000
Central Eurasia:	47,200	54,500	30,700	54,500	33,000	33,000	33,000
Azerbaijan	NA	12		22	100	150	200
Belarus	NA	744	1,620	1,920	2,200	2,300	2,400
Georgia	1,200	84	(1)		2,200	2,300	200
Kazakhstan	6,750	3,030	4,770	5,370	5,500	5,700	5,800
Latvia	500	279	500	554	550	550	550
Moldova	NA	663	909	1,010	1,100	1,100	1,200
Russia	89,600	51,600	59,100	65,600	68,000	70,000	72,000
	55,000			38,700	39,000	39,000	40,000
Ukraine Uzbakistan	55,000 NA	23,300 352	31,800	38,700 602	39,000 650	39,000 700	
Uzbekistan			99.100				120,000
Total Paginal total	153,000	80,100	295,000	114,000	120,000	120,000	120,000
Regional total	355,000	272,000	/	306,000	310,000	310,000	300,000

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

¹Less than 1/2 unit.

TABLE 14
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF LEAD (MINE OUTPUT)

(Pb content in metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
France	1,140						
Germany	8,600						
Greece	26,200	14,300	18,200		16,000	16,000	18,000
Ireland	35,300	46,100	57,800	65,900	66,000	66,000	60,000
Italy	15,600	15,400	2,000	500	100		
Spain	61,500	30,300	40,300				
Sweden	98,300	137,000	107,000	33,900	32,000	30,000	30,000
United Kingdom	1,380	1,600	1,000	600	500	500	500
Total	248,000	245,000	226,000	101,000	110,000	110,000	110,000
Central Europe:							
Bosnia and Herzegovina	7,500	150	200				
Bulgaria	57,000	33,000	10,500	19,000	25,000	25,000	25,000
Macedonia	15,000	17,000	24,000		15,000	15,000	15,000
Poland	90,300	99,400	114,000	87,000	70,000	60,000	60,000
Romania	25,100	23,200	18,800	15,000	20,000	20,000	20,000
Serbia and Montenegro	15,200	3,300	10,500	1,500	1,500	1,500	2,000
Total	210,000	176,000	178,000	123,000	130,000	120,000	120,000
Central Eurasia:							_
Georgia	NA	NA	200	400	200	200	200
Kazakhstan	200,000	70,000	40,000	33,000	40,000	45,000	50,000
Russia	30,000	23,000	13,300	24,000	25,000	25,000	25,000
Tajikistan	2,000	500	800	800	1,000	1,000	1,000
Total	232,000	93,500	54,300	58,200	66,000	71,000	76,000
Regional total	690,000	515,000	458,000	282,000	310,000	300,000	310,000

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

TABLE 15 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED LEAD (PRIMARY)

(Metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Belgium	69,800	95,300	12,000				
France	162,000	129,000	110,000				
Germany	208,000	147,000	170,000	116,000	120,000	110,000	110,000
Italy	64,600	84,900	75,000	40,000	35,000	30,000	25,000
Sweden	47,500	39,700	30,600	30,200	25,000	22,000	20,000
United Kingdom	156,000	150,000	166,000	126,000	200,000	150,000	150,000
Total	708,000	646,000	564,000	312,000	380,000	310,000	310,000
Central Europe:							
Bosnia and Herzegovina	250	100	100	100			
Bulgaria	66,600	71,200	84,100	63,000	75,000	75,000	75,000
Macedonia	22,000	22,500	22,900		5,000	15,000	15,000
Poland ¹	64,800	66,400	55,900	56,800	25,000	25,000	20,000
Romania	15,700	22,000	25,000	23,100	35,000	35,000	35,000
Serbia and Montenegro	48,000	23,600	1,240	800	1,000	1,000	1,000
Total	217,000	206,000	189,000	144,000	140,000	150,000	150,000
Central Eurasia:							
Kazakhstan	290,000	88,500	186,000	157,000	200,000	250,000	270,000
Russia ¹	35,000	23,000	59,000	65,000	80,000	90,000	100,000
Total	325,000	112,000	245,000	222,000	280,000	340,000	370,000
Regional total	1,250,000	964,000	998,000	678,000	800,000	800,000	830,000

 $^{^{\}mathrm{e}}$ Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 16 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED LEAD (SECONDARY)

(Metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	15,100	21,900	24,000	20,000	20,000	15,000	15,000
Belgium	21,200	30,000	98,000	63,000	60,000	50,000	50,000
France	108,000	168,000	158,000	106,000	100,000	75,000	50,000
Germany	187,000	164,000	204,000	243,000	240,000	250,000	250,000
Greece	5,000	5,000	5,000	4,000	4,000	4,000	3,000
Ireland	15,000	11,000	9,000	6,600	6,000	5,000	5,000
Italy	102,000	95,500	160,000	162,000	160,000	150,000	100,000
Netherlands	44,000	20,000	22,200	22,000	20,000	15,000	10,000
Portugal	6,000	7,700	5,000	4,000	3,000	3,000	2,000
Spain	50,000	80,000	120,000	106,000	100,000	75,000	50,000
Sweden	22,100	51,500	47,300	52,000	48,000	46,000	45,000
Switzerland	6,000	6,000	10,100	9,000	7,000	6,000	5,000
United Kingdom	174,000	171,000	171,000	120,000	50,000	30,000	25,000
Total	755,000	832,000	1,030,000	918,000	820,000	720,000	610,000
Central Europe:	•						
Czech Republic	NA	20,000	25,000	25,000	35,000	35,000	35,000
Poland ¹	NA				45,000	45,000	45,000
Romania	5,000	4,000	3,000	5,000	5,000	5,000	5,000
Slovenia	12,200	7,240	15,300	16,000	15,000	15,000	15,000
Total	17,200	31,200	43,300	46,000	100,000	100,000	100,000
Central Eurasia, Ukraine	10,000	10,000	15,000	7,000	8,000	9,000	10,000
Regional total	782,000	873,000	1,090,000	971,000	930,000	830,000	720,000
er .: . 1 .: . 11.	1 1	.1 ' '.C' .	11 1	1 1 1	NIA NI 4 11 11	-	

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

¹Includes some secondary refined lead.

¹Through 2004, data concerning secondary refined production was either not available or was included only as part of primary refined production.

TABLE 17
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF NICKEL (MINE OUTPUT)

(Ni content in metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Finland	11,500	3,440	10,700	44,500	46,000	47,000	48,000
Greece	18,500	19,900	19,500	21,700	22,000	22,000	22,000
Norway	3,100	3,390	2,540				
Spain					8,000	10,000	10,000
Total	33,100	26,700	32,700	66,200	76,000	79,000	80,000
Central Europe:							_
Albania	8,800						
Macedonia		3,500		5,300			
Total	8,800	3,500		5,300			
Central Eurasia:							
Russia	380,000	250,000	315,000	315,000	330,000	350,000	380,000
Ukraine	6,000	1,400		2,000	2,000	2,000	2,000
Total	386,000	251,000	315,000	317,000	330,000	350,000	380,000
Regional total	428,000	281,000	348,000	389,000	410,000	430,000	460,000

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

 ${\it TABLE~18}$ EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PLATINUM (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Finland	60	37	441	705	750	780	800
Norway	1,500	1,500	1,000	1,000	1,000	900	900
Total	1,560	1,540	1,440	1,710	1,800	1,700	1,700
Central Europe:							
Poland		21	21	20	20	20	20
Serbia and Montenegro	21	6	3	1	1	1	1
Total	21	27	24	21	21	21	21
Central Eurasia, Russia ¹	44,000	31,000	27,000	28,000	29,000	32,000	33,000
Regional total	45,600	32,600	28,500	29,700	31,000	34,000	35,000

 $^{^{\}mathrm{e}}$ Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

¹The large decrease in Russian projected platinum production reflects newly released Russian platinum production data. Future volumes will reflect revised historic platinum production data.

TABLE 19
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PALLADIUM (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Central Europe:							
Poland		12	12	10	10	10	10
Serbia and Montenegro	130	46	21	8	8	8	8
Total	130	58	33	18	18	18	18
Central Eurasia, Russia ¹	91,000	65,000	95,000	97,000	100,000	110,000	120,000
Regional total	91,100	65,100	95,000	97,000	100,000	110,000	120,000

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

 ${\it TABLE~20} \\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~ZINC~(MINE~OUTPUT)}$

(Zn content in metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Finland	51,700	16,400	30,500	69,300	72,000	73,000	74,000
France	23,900						
Germany	58,100						
Greece	26,700	15,100	20,300		16,000	16,000	16,000
Ireland	166,000	184,000	263,000	444,000	440,000	400,000	400,000
Italy	42,400	23,100					
Norway	17,500	9,880					
Spain	258,000	172,000	200,000				
Sweden	164,000	167,000	177,000	161,000	160,000	160,000	160,000
United Kingdom	6,670						
Total	815,000	587,000	691,000	674,000	690,000	650,000	650,000
Central Europe:							_
Bosnia and Herzegovina	15,200	300	300				
Bulgaria	35,000	26,000	9,400	15,500	20,000	20,000	20,000
Macedonia	32,000	8,300	25,000		10,000	10,000	10,000
Poland	153,000	155,000	156,900	154,000	150,000	150,000	130,000
Romania	36,000	34,700	27,500	18,600	25,000	30,000	30,000
Serbia and Montenegro	9,500	3,200	21,000		6,000	8,000	8,000
Total	281,000	228,000	240,000	188,000	210,000	220,000	200,000
Central Eurasia:							
Armenia		700	528	650	800	800	1,000
Georgia			200	400	400	400	400
Kazakhstan	315,000	225,000	325,000	360,000	450,000	470,000	480,000
Russia	170,000	131,000	136,000	179,000	190,000	200,000	230,000
Total	485,000	357,000	462,000	540,000	640,000	670,000	710,000
Regional total	1,580,000	1,170,000	1,390,000	1,400,000	1,500,000	1,500,000	1,600,000
Δ							

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

¹The large increase in projected Russian palladium production reflects newly released Russian palladium production data. Future volumes will reflect revised historic palladium production data.

TABLE 21
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED ZINC (PRIMARY AND SECONDARY)

(Metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	26,900						
Belgium	357,000	211,000	252,000	309,000	300,000	250,000	250,000
Finland	175,000	177,000	223,000	285,000	290,000	290,000	290,000
France	264,000	314,000	348,000	268,000	270,000	270,000	250,000
Germany	338,000	322,000	357,000	382,000	380,000	380,000	380,000
Italy	248,000	260,000	170,000	118,000	100,000	100,000	100,000
Netherlands	209,000	208,000	217,000	228,000	230,000	230,000	200,000
Norway	125,000	122,000	126,000	129,000	130,000	140,000	140,000
Portugal	5,500	4,000	3,600	3,000	3,000	2,500	2,500
Spain	253,000	358,000	387,000	532,000	530,000	530,000	500,000
United Kingdom	93,300	106,000	99,600				
Total	2,090,000	2,080,000	2,180,000	2,250,000	2,200,000	2,200,000	2,100,000
Central Europe:							
Bosnia and Herzegovina	15,000	300					
Bulgaria	75,500	79,700	84,200	102,000	100,000	100,000	100,000
Czech Republic	NA	1,000	150	250	250	250	250
Macedonia	34,100	21,300	62,800		10,000	10,000	10,000
Poland	132,000	166,000	173,000	155,000	160,000	160,000	160,000
Romania	11,500	28,300	51,900	50,000	50,000	50,000	50,000
Serbia and Montenegro	61,300	6,000	8,290		100	150	150
Total	329,000	303,000	380,000	307,000	320,000	320,000	320,000
Central Eurasia:							
Kazakhstan	315,000	239,000	262,000	317,000	400,000	420,000	430,000
Russia	250,000	166,000	230,000	240,000	260,000	270,000	300,000
Uzbekistan	70,000	70,000	18,000	30,000	50,000	60,000	70,000
Total	635,000	475,000	510,000	587,000	710,000	750,000	800,000
Regional total	3,050,000	2,860,000	3,070,000	3,140,000	3,200,000	3,300,000	3,200,000

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.

 ${\it TABLE~22} \\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~NATURAL~DIAMOND^1} \\$

(Thousand carats)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Central Eurasia, Russia:							
Gem grade	18,000	17,000	17,500	21,400	23,000	24,000	25,000
Industrial grade	12,000	11,000	11,700	14,200	15,000	16,000	17,000
Regional total	30,000	28,000	29,200	35,600	38,000	40,000	42,000

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

¹The large increase in projected Russian diamond production reflects mainly newly released Russian diamond production data. Future volumes will reflect revised historic Russian diamond production data.

TABLE 23
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PHOSPHATE ROCK (MINE OUTPUT)

(P₂O₅ content in thousand metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Denmark-Greenland	(1)	(1)	(1)	(1)	1	1	1
Finland	201	243	1	15	18	20	20
Total	201	243	1	15	19	21	21
Central Eurasia:							
Kazakhstan	2,900	2	10	67	80	120	150
Russia	12,000	3,400	4,450	4,420	4,400	4,400	4,400
Uzbekistan			36	102	130	150	170
Total	14,900	3,400	4,500	4,590	4,600	4,700	4,700
Regional total	15,100	3,640	4,500	4,610	4,600	4,700	4,700

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

 ${\it TABLE~24} \\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~MARKETABLE~COAL}^1 \\$

2,450 12,700 427,000 49,900 15,500 358 35,900 11 94,400 638,000	1,250 7,010 260,000 56,600 352 343 23,300 53,000	1,260 4,100 201,000 64,000 14 330 23,500	1,200 160 208,000 68,000 10 300 17,300	2007° 1,200 210,000 65,000 10 250 16,000	1,000 210,000 65,000 10 220 15,000	1,000 210,000 65,000 10 200 14,000
12,700 427,000 49,900 15,500 358 35,900 11 94,400	7,010 260,000 56,600 352 343 23,300	4,100 201,000 64,000 14 330 23,500	160 208,000 68,000 10 300 17,300	210,000 65,000 10 250 16,000	210,000 65,000 10 220	210,000 65,000 10 200
12,700 427,000 49,900 15,500 358 35,900 11 94,400	7,010 260,000 56,600 352 343 23,300	4,100 201,000 64,000 14 330 23,500	160 208,000 68,000 10 300 17,300	210,000 65,000 10 250 16,000	210,000 65,000 10 220	210,000 65,000 10 200
12,700 427,000 49,900 15,500 358 35,900 11 94,400	7,010 260,000 56,600 352 343 23,300	4,100 201,000 64,000 14 330 23,500	160 208,000 68,000 10 300 17,300	210,000 65,000 10 250 16,000	210,000 65,000 10 220	210,000 65,000 10 200
427,000 49,900 15,500 358 35,900 11 94,400	260,000 56,600 352 343 23,300	201,000 64,000 14 330 23,500	208,000 68,000 10 300 17,300	210,000 65,000 10 250 16,000	210,000 65,000 10 220	65,000 10 200
49,900 15,500 358 35,900 11 94,400	56,600 352 343 23,300 53,000	64,000 14 330 23,500	68,000 10 300 17,300	65,000 10 250 16,000	65,000 10 220	65,000 10 200
15,500 358 35,900 11 94,400	352 343 23,300 53,000	14 330 23,500	10 300 17,300	10 250 16,000	10 220	10 200
358 35,900 11 94,400	343 23,300 53,000	330 23,500 	300 17,300	250 16,000	220	200
35,900 11 94,400	23,300 53,000	23,500	17,300	16,000		
11 94,400	53,000		*	*	15,000	14 000
94,400						14,000
		22 222				
638,000		32,000	27,200	27,000	25,000	25,000
	402,000	326,000	322,000	320,000	320,000	320,000
2,070	81	21	18	20	20	20
18,200	1,810	7,440	9,000	10,000	10,000	10,000
31,700	30,800	27,100	26,600	27,000	27,000	27,000
155	75					
124,000	80,100	68,100	63,000	65,000	65,000	65,000
17,600	14,500	14,300	13,400	14,000	14,000	14,000
6,640	7,990	7,520	8,500	8,000	8,000	8,000
205,000	201,000	163,000	162,000	170,000	170,000	170,000
38,200	41,100	29,300	31,600	35,000	35,000	35,000
44,700	40,600	32,300	35,700	40,000	40,000	40,000
4,770	4,140	3,590	2,950	3,500	3,500	3,500
5,580	4,880	4,480	4,810	4,500	4,500	4,500
499,000	427,000	357,000	358,000	380,000	380,000	380,000
800	40	7	8	10	10	10
131,000	113,000	74,900	86,900	90,000	95,000	100,000
3,400	500	425	455	500	500	500
395,000	263,000	274,000	283,000	310,000	320,000	330,000
300	100	21	92	100	100	100
136,000	83,800	81,900	83,400	85,000	85,000	80,000
3,200	3,200	2,560	2,700	3,500	4,000	4,500
670,000	464,000	434,000	457,000	490,000	500,000	520,000
1.810.000	1,290,000	1,120,000	1,140,000	1,200,000	1.200.000	1,200,000
	155 124,000 17,600 6,640 205,000 38,200 44,700 4,770 5,580 499,000 800 131,000 3,400 395,000 300 136,000 3,200	155 75 124,000 80,100 17,600 14,500 6,640 7,990 205,000 201,000 38,200 41,100 44,700 40,600 4,770 4,140 5,580 4,880 499,000 427,000 800 40 131,000 113,000 395,000 263,000 300 100 136,000 83,800 3,200 3,200 670,000 464,000	155 75 124,000 80,100 68,100 17,600 14,500 14,300 6,640 7,990 7,520 205,000 201,000 163,000 38,200 41,100 29,300 44,700 40,600 32,300 4,770 4,140 3,590 5,580 4,880 4,480 499,000 427,000 357,000 800 40 7 131,000 113,000 74,900 3,400 500 425 395,000 263,000 274,000 300 100 21 136,000 83,800 81,900 3,200 3,200 2,560 670,000 464,000 434,000	155 75 124,000 80,100 68,100 63,000 17,600 14,500 14,300 13,400 6,640 7,990 7,520 8,500 205,000 201,000 163,000 162,000 38,200 41,100 29,300 31,600 44,700 40,600 32,300 35,700 4,770 4,140 3,590 2,950 5,580 4,880 4,480 4,810 499,000 427,000 357,000 358,000 800 40 7 8 131,000 113,000 74,900 86,900 3,400 500 425 455 395,000 263,000 274,000 283,000 300 100 21 92 136,000 83,800 81,900 83,400 3,200 3,200 2,560 2,700 670,000 464,000 434,000 457,000	155 75 124,000 80,100 68,100 63,000 65,000 17,600 14,500 14,300 13,400 14,000 6,640 7,990 7,520 8,500 8,000 205,000 201,000 163,000 162,000 170,000 38,200 41,100 29,300 31,600 35,000 44,700 40,600 32,300 35,700 40,000 4,770 4,140 3,590 2,950 3,500 5,580 4,880 4,480 4,810 4,500 499,000 427,000 357,000 358,000 380,000 800 40 7 8 10 131,000 113,000 74,900 86,900 90,000 3,400 500 425 455 500 395,000 263,000 274,000 283,000 310,000 300 100 21 92 100 136,0	155 75 124,000 80,100 68,100 63,000 65,000 65,000 65,000 17,600 14,500 14,300 13,400 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 14,000 8,000 8,000 8,000 8,000 205,000 201,000 163,000 162,000 170,000 170,000 170,000 170,000 35,000 35,000 35,000 35,000 35,000 35,000 35,000 35,000 35,000 35,000 40,000 40,000 40,000 40,000 40,000 40,000 40,000 40,000 40,000 45,000 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 45,00 38,000 380,000 380,000 380,000 380,000 395,000 35,000 35,000

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

¹Less than 1/2 unit.

¹Includes anthracite, bituminous, and run-of-mine lignite.

 ${\it TABLE~25} \\ {\it EUROPE~AND~CENTRAL~EURASIA:~HISTORIC~AND~PROJECTED~PRODUCTION~OF~NATURAL~GAS~(DRY)}$

(Million cubic meters)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:	_						
Western Europe:	-						
Austria	1,080	1,000	1,200	1,200	1,200	1,100	1,000
Denmark-Greenland		6,320	7,100	7,300	7,600	7,800	8,000
France	3,030	2,830	1,870	1,330	1,300	1,200	1,200
Germany	23,700	19,000	20,400	19,300	19,000	18,000	17,000
Greece	. 36	36	36	30	30	30	25
Ireland	57	2,830	2,500	2,500	2,500	2,500	2,500
Italy	17,300	20,400	18,500	12,600	12,000	12,000	12,000
Netherlands	74,100	78,400	68,200	74,000	74,000	72,000	70,000
Norway	27,900	27,800	49,700	78,500	86,000	90,000	95,000
Spain	1,550	422	179	550	500	500	500
United Kingdom	50,600	75,500	95,900	100,000	90,000	90,000	80,000
Total	199,000	235,000	266,000	297,000	290,000	300,000	290,000
Central Europe:	_						
Albania	243	28	11	12	12	15	15
Bulgaria	14	60	15	333	500	500	500
Croatia	2	2	2	2	2	2	2
Czech Republic	125	165	118	175	150	150	150
Hungary	5	5	3	3	3	3	3
Poland	3,870	4,800	4,960	5,400	5,300	5,300	5,300
Romania	28,300	19,000	14,600	13,300	14,000	14,000	14,000
Serbia and Montenegro	646	906	729	300	110	110	110
Slovakia	981	345	202	200 1	220	220	220
Slovenia	24	18	7	5	5	5	5
Total	34,200	25,300	20,600	19,700	20,000	20,000	20,000
Central Eurasia:							
Azerbaijan	9,900	6,600	5,640	5,000	7,000	8,000	9,000
Belarus	300	300	257	250	200	200	200
Georgia	40	3	80	6	15	15	15
Kazakhstan	7,100	5,900	11,500	14,400	25,000	35,000	45,000
Kyrgyzstan	100	40	32	29	30	30	30
Russia	641,000	595,000	584,000	634,000	640,000	640,000	640,000
Tajikistan	100	40	40	36	200	300	500
Turkmenistan	84,000	32,300	47,000	58,600	70,000	80,000	90,000
Ukraine	24	18	18	19	20	20	20
Uzbekistan	42,000	48,600	55,600	59,900	61,000	62,000	65,000
Total	785,000	689,000	704,000	772,000	800,000	830,000	850,000

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

¹Reported as manufactured coke oven gas.

TABLE 26
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF CRUDE PETROLEUM

(Thousand 42-gallon barrels)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
Austria	8,010	7,210	7,020	7,000	7,000	7,000	7,000
Denmark-Greenland	45,400	67,900	87,900	135,000	140,000	140,000	150,000
France	22,000	18,300	11,600	8,550	9,000	9,000	8,000
Germany	26,000	21,600	22,500	25,400	25,000	24,000	23,000
Greece	5,900	3,400	2,090	1,100	1,000	1,000	1,000
Italy	31,600	35,500	29,200	30,000	28,000	26,000	24,000
Netherlands		24,500	17,600	17,000	17,000	17,000	17,000
Norway	609,000	979,000	1,140,000	1,020,000	1,200,000	1,200,000	1,200,000
Spain	7,590	4,750	1,650	2,400	2,600	2,600	2,500
United Kingdom	687,000	914,000	884,000	812,000	800,000	800,000	750,000
Total	1,440,000	2,080,000	2,200,000	2,060,000	2,200,000	2,200,000	2,200,000
Central Europe:							
Albania	7,050	3,440	2,100	2,600	2,300	2,500	2,500
Bulgaria	440	345	299	220	250	250	250
Croatia	15,400	11,100	8,990	7,400	7,500	8,000	8,000
Czech Republic	319	1,010	1,140	1,880	1,700	1,700	1,700
Hungary	13,200	11,200	8,610	8,400	9,000	9,000	9,000
Poland	1,210	2,170	4,850	6,600	6,000	6,000	6,000
Romania	61,700	52,900	45,300	41,000	45,000	45,000	45,000
Serbia and Montenegro	7,890	7,910	5,960	4,800	5,000	5,000	5,000
Slovakia	495	509	400	350	350	350	350
Slovenia	18,900	13,800	4,440	2,500	2,500	2,500	2,500
Total	127,000	104,000	82,100	75,800	80,000	80,000	80,000
Central Eurasia:		,	,	,	,	•	,
Azerbaijan	91,900	67,600	104,000	110,000	200,000	350,000	400,000
Belarus	15,400	14,000	13,600	13,000	13,000	13,000	13,000
Georgia	1,470	294	805	720	700	700	700
Kazakhstan	190,000	151,000	260,000	373,000	500,000	700,000	800,000
Kyrgyzstan	1,200	650	567	540	500	500	500
Lithuania	·	734	2,340	2,200	2,200	2,100	2,000
Russia	3,790,000	2,260,000	2,390,000	3,300,000	3,400,000	3,400,000	3,500,000
Tajikistan	1,470	220	147	140	2,000	3,500	5,000
Turkmenistan	41,900	33,100	54,000	74,000	80,000	90,000	95,000
Ukraine	39,700	30,100	27,200	30,700	32,000	32,000	33,000
Uzbekistan	19,800	55,900	34,200	48,000	55,000	60,000	65,000
Total	4,190,000	2,610,000	2,890,000	3,950,000	4,300,000	4,700,000	4,900,000
Regional total	5,760,000	4,790,000	5,170,000	6,090,000	6,600,000	7,000,000	7,200,000
<u></u>	2,700,000	.,,,,,,,,,,	2,1.0,000			7,000,000	.,200,000

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

TABLE 27 EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF URANIUM

(U content in metric tons)

Region and country	1990	1995	2000	2004	2007 ^e	2009 ^e	2011 ^e
Europe:							
Western Europe:							
France	2,780	712	318				
Germany	2,530	297	237	65	50	40	30
Portugal	76	22	13				
Spain	193	356	294	170	85	85	80
Total	5,580	1,390	862	235	140	130	110
Central Europe:							
Bulgaria	700	600	600	600	600	600	600
Czech Republic	2,540	611	498	435	450	450	450
Hungary		277					
Slovakia	34						
Total	3,270	1,490	1,100	1,040	1,100	1,100	1,100
Central Eurasia:							
Kazakhstan	3,000	1,630	1,740	3,320	7,000	10,000	13,000
Russia	4,000	2,250	2,500	3,300	3,700	4,000	4,300
Ukraine	1,000	500	600	900	1,000	1,000	1,000
Uzbekistan	3,000	1,800	2,350	2,020	2,300	2,500	3,000
Total	11,000	6,180	7,190	9,540	14,000	18,000	21,000
Regional total	19,900	9,060	9,150	10,800	15,000	19,000	22,000

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