



2010 Minerals Yearbook

RUSSIA

THE MINERAL INDUSTRY OF RUSSIA

By Elena Safirova

Russia was one of the world's leading mineral-producing countries. In 2010, Russia was ranked among the world's leading producers or was a leading regional producer of such mineral commodities as aluminum, arsenic, asbestos, bauxite, boron, cadmium, cement, coal, cobalt, copper, diamond, fluor spar, gold, iron ore, lime, magnesium compounds and metals, mica (flake, scrap, and sheet), natural gas, nickel, nitrogen, oil shale, palladium, peat, petroleum, phosphate, pig iron, platinum, potash, rhenium, silicon, steel, sulfur, titanium sponge, tungsten, and vanadium (Angulo, 2012; Apodaca, 2012a–c; Bray, 2012a, b; Brooks, 2012; Corathers, 2012; Edelstein, 2012; Fenton, 2012; Gambogi, 2012; George, 2012; Jasinski, 2012a, b; Jorgenson, 2012; Kramer, 2012a, b; Kuck, 2012; Loferski, 2012; Miller, 2012a, b; Olson, 2012; Polyak, 2012a, b; Shedd, 2012a, b; Tolcin, 2012; van Oss, 2012; Virta, 2012; Willett, 2012).

Minerals in the National Economy

In 2010, the real gross domestic product (GDP) of Russia increased by 4.3% to 45,166 billion rubles (\$1,487 billion¹), compared with a 7.8% decrease in 2009. Industrial production contributed 36.9% to the total GDP, and the industrial sector accounted for 27.5% of the employment. Mining and quarrying (excluding energy production) employed 898,000 people, or 1.6% of the total number of employed in the country's economy. Mining and quarrying contributed 9.8% to the total value added in the economy in 2010, and the total production volume in current prices amounted to 6,212 billion rubles (\$204.4 million), or 13.8% of the GDP (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011a; U.S. Central Intelligence Agency, 2012).

Over the course of 2010, mining and quarrying production increased by 3.6%. Mining and quarrying of fuel and energy products increased at a slower rate, by 3.1%, than did the mining and quarrying of nonenergy minerals, which increased at a rate of 7.3%. Among nonmining industrial sectors, production of chemicals increased by 14.6%; metallurgy and production of finished metal products, by 12.4%; production of other nonmetal mineral products, by 10.7%; and that of coke and petroleum products, by 5.0% (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

In 2010, 17% of all investments in the economy were directed to the mining and quarrying industry. Mining and quarrying was one of the most profitable sectors of the economy; the average profitability of the sector was 31.9% whereas the average profitability for all sectors was only 16.2% (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

¹Where necessary, values have been converted from Russian rubles (RUB) to U.S. dollars (US\$) at an annual average exchange rate of RUB30.38=US\$1.00 for 2010 and RUB31.74=US\$1.00 for 2009. All values are nominal, at current prices, unless otherwise stated.

Of Russia's total spending on geologic prospecting, 80.8% went into exploration for oil and gas, 9% into exploration for precious metals, and 1.9% into exploration for diamond. In terms of the sources of financing, 70.4% of exploration spending was financed by the mineral industry, 16.7% came from domestic and foreign investors, and 8.2% was contributed from the Federal budget (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

Government Policies and Programs

In 2009, the Ministry of Industry and Trade of Russia announced a new program "Strategy for Development of the Metallurgical Industry for the Period through 2020." The new strategy emphasizes metallurgy as one of the sectors of specialization for Russia in the current international division of labor. The new program was initiated because, despite Russian metallurgy's adaptation to the market economy, the sector's technological level and competitiveness on international markets were thought to be unsatisfactory. The program is designed to improve cooperation between various government entities, the business community, and nongovernmental organizations to increase the technological level of the metallurgical industry and to create a basis for further development of the sector for the period beyond 2020. The strategy document mentions the following cost-increasing trends in the metallurgical sector that were said to have become apparent in the past several years:

- High depreciation of production facilities and equipment;
- Low quality of ores (excluding antimony and nickel);
- Breakdown in the system of replenishing the ore base for the metallurgical sector, in particular, insufficient ferrous ore base for the Urals and Eastern Siberia plants; insufficient ore base for bauxites, rare earths, tin, and tungsten, and for some other specific metals, such as chromium, manganese, and titanium;
- Shortages of some types of final metallurgical products;
- Reductions in the production volumes of certain special types of steel and alloys;
- Lack of small- and medium-sized enterprises that could quickly fill profitable niches;
- High production costs per unit of production, especially in comparison with analogous enterprises in other countries;
- Low labor productivity;
- Insufficient attention to environmental protection;
- Low adaptability for innovations and new technology; and
- Lack of a qualified labor force.

The plan to overcome those problems includes a variety of measures, from support of research and development in metallurgy to improvements in the system of education of specialists in the metallurgical field. One of the most important elements of the strategy is changing the tax code to reduce the tax rate imposed on profits and allowing metallurgical enterprises to reinvest their amortization funds in capital goods faster and with more discretion.

The outcomes that result from this strategy will be dependent on three scenarios:

- Inertia (business as usual),
- Increased energy and raw materials, and
- Innovation (adoption of new technology).

The outcome under each of the scenarios would depend on the basic economic conditions in Russia and the world and on how successful the early measures of the strategy proved to be. If the innovation scenario is realized, the Ministry expected that the production of titanium in Russia in 2020 compared with that in 2007 would increase by 127.4%; that of zinc, by 90.3%; tin, by 72.4%; steel pipe, by 54%; aluminum, by 48.5%; and refined copper, by 30.0% (Minpromtorg Rossii, 2009).

Production

In 2010, Russia started to increase its production following the recession of 2008–9. Production of silicon metal increased by 103.8%; ferromanganese, by 95.0%; potash, by 68.6%; silicomanganese, by 49.85%; lead mine output, by 38.6%; that of steel pipe, by 37.5%; ferrosilicon, by 23.0%; refined lead, by 21.9%; tungsten concentrate, by 21.7%; zirconium, by 20.0%; zinc mine output, by 19.6%; sulfuric acid, by 18.6%; coal, by 17.7%; cement, by 13.9%; rolled steel, by 13.7%; crude steel, by 12.1%; and natural gas, by 11.6%. At the same time, production of tin mine output decreased by 86.7%, and that of titanium sponge decreased by 30.0%. All other production data are in table 1.

Structure of the Mineral Industry

At the end of 2009, Russia had 9,913 enterprises engaged in mining and quarrying, which was a 1.1% increase compared with the number of enterprises active in mining and quarrying in the previous year. Of these enterprises, 4,342 were engaged in extracting fuel minerals, and the other 5,571 were engaged in mining nonfuel minerals. Out of all mining and quarrying enterprises, only 385 were owned by the Government, 8,330 were owned by Russian citizens, and 837 were either owned by foreign companies or were jointly owned by domestic and foreign entities (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

Mineral Trade

In 2010, the total value of Russian exports was \$400.4 billion, which was a 31.8% increase compared with the value of exports in 2009. The value of Russian imports also increased in 2010, to \$248.7 billion, or by 29.7%. In 2010, Russia had a positive trade balance of \$151.7 billion (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

The main export categories for Russia were chemicals, manufactured goods, metals, natural gas, petroleum and petroleum products, and wood and wood products. Mineral products made up 68.8% of the total value of Russian exports, and crude oil alone contributed 33.6% to the total. Petroleum products accounted for another 17.5%; natural gas, 11.9%; and ferrous metals, 5.2%. Among ferrous metals, the leading

categories were semifinished products made from carbon steel (33.5%) and flat-rolled iron and steel (29.0%). Other mineral products that contributed significant amounts to Russia's export revenue were bituminous coal (2.3%), aluminum (1.5%), nickel (1.3%), and copper (0.8%). The major export partners of Russia in 2010 were the Netherlands (13.6%); Italy (6.9%); Germany (6.3%); Ukraine (5.8%); China and Turkey (5.1% each); Belarus (4.6%); Poland (3.8%); Japan (3.2%); Finland, France, and the United States (3.1% each); and Kazakhstan and the United Kingdom (2.9% each) (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

In 2010, Russia imported \$5,364 million worth of ferrous metals (which constituted 2.1% of the total imports), \$6,446 million worth of products made of ferrous metals (2.6%), and \$1,987 million worth of petroleum products (0.8%). The major imports partners of Russia were China (17.0%); Germany (11.7%); Ukraine (6.1%); the United States (4.9%); Japan (4.5%); Italy and France (4.4% each); Belarus (4.3%); the Republic of Korea (3.2%); Poland (2.5%); Turkey (2.1%); Finland, Kazakhstan, and the United Kingdom (2.0% each); and the Netherlands (1.9%) (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

Commodity Review

Metals

Bauxite and Alumina and Aluminum.—All Russian production of alumina, bauxite, and primary aluminum was controlled by United Company RUSAL (UC RUSAL), which was the world's leading producer of alumina and aluminum. UC RUSAL operated 16 aluminum smelters, which were located in four countries: Russia (12 plants), Nigeria (1 plant), Sweden (1 plant), and Ukraine (1 plant). It also operated 12 alumina plants, 8 bauxite mines, 3 plants for producing aluminum powder, 3 plants for producing secondary aluminum, and 3 plants for producing aluminum foil. The combined annual capacity of UC RUSAL's plants was 4.7 million metric tons (Mt) of aluminum, 11.5 Mt of alumina, and 80,000 metric tons (t) of aluminum foil. In 2010, UC RUSAL plants employed about 74,000 people. UC RUSAL owned 25% of the shares of OJSC MMC Norilsk Nickel (Normickel), which was the world's leading producer of nickel and palladium and one of the world's leading producers of copper and platinum (United Company RUSAL, 2012a, b).

In January, UC RUSAL sold 10.64% of its shares on the Hong Kong stock exchange for \$2,238 billion. The buyer that purchased most shares was Vnesheconombank of Russia (the main creditor of UC RUSAL), which purchased 3.15% of the shares (Igumenov and Berezanskaya, 2010). UC RUSAL's main facilities were located in Siberia and accounted for about 85% of the company's aluminum output. Together, the Bratsk and the Krasnoyarsk smelters in Siberia accounted for almost one-half of UC RUSAL's aluminum production, and these smelters were among the leading aluminum smelters in the world. UC RUSAL's aluminum smelters in Siberia had the advantage of access to low-cost and renewable hydroelectric power as their principal source of electricity (United Company RUSAL, 2011).

UC RUSAL was formed in 2007 by a merger of RUSAL, Siberia-Urals Aluminum Co. (SUAL), and the bauxite assets held by Glencore International AG of Switzerland. Before the merger, SUAL's holdings included the following eight aluminum plants: the Bogoslovsk aluminum plant located in Sverdlovskaya Oblast', the Irkutsk aluminum plant in Irkutskaya Oblast', the Kandalaksha aluminum plant in Murmanskaya Oblast', the Nadvoitsy aluminum plant in the Republic of Kareliya, the Urals aluminum plant in Sverdlovskaya Oblast', the Volkhov aluminum plant and the Pikalyov aluminum plant in Leningradskaya Oblast', and the Volgograd aluminum plant in the city of Volgograd. Raw materials for SUAL's plants were mined at the OAO Sevuralboksitruuda and the Sredne-Timanskiy bauxite mine. The resource base of Glencore at the time of the merger was about 3.3 billion metric tons (Gt) of bauxite.

UC RUSAL had plans to further expand its aluminum smelting operation in Siberia with two projects—the BEMO and the Tayshet smelter projects, which together could increase the company's production capacity by an additional 1.3 million metric tons per year (Mt/yr). The BEMO project involved the construction of a 3,000-megawatt (MW)-capacity hydroelectric powerplant and the Boguchanskiy aluminum smelter in the Krasnoyarskiy Kray; the smelter would have the capacity to produce 588,000 metric tons per year (t/yr) of aluminum. The project was to be completed in two stages. The first stage was scheduled for completion by 2013, and the second stage, by the end of 2015. The Tayshet aluminum smelter, which was to be located in Irkutsk, was to have a design capacity to produce 750,000 t/yr of aluminum (United Company RUSAL, 2011). Construction of the smelter had been temporarily suspended owing to financing issues, and UC RUSAL was in the process of negotiating with foreign investors for financing.

Copper.—In 2010, primary refined copper production in Russia increased by 7.2% compared with that of 2009. Production of blister and refined copper took place at four enterprises—Metalloinvest Holding; Nor Nickel; Ural Mining and Metallurgical Co. (UMMC), and ZAO Russian Copper Co. (RCC). Metalloinvest purchased rights to mine the Udokan deposit in 2009. Copper in ore and concentrate was also produced at a number of enterprises that mined polymetallic ores containing copper. Copper in concentrate production was estimated to have increased by about 4% compared with that of 2009.

At Russia's leading copper-producing enterprise, Nor Nickel, refined copper production totaled 309,000 t at the Zapolyarnyi division of the company, which was about 4.4% less than the division produced in 2009. In another division, Kola GMK, the company produced 56,000 t of copper, which was 5.4% less than in 2009. As of the beginning of 2010, proven and probable ore reserves on the Kola Peninsula and the Taymyr Peninsula combined were 8.7 Mt of copper; moreover, measured and indicated ore resources on those two peninsulas totaled 16 Mt of copper. Overall, Nor Nickel copper production accounted for about 2% of the world's production volume (OJSC MMC Norilsk Nickel, 2011).

As of 2010, UMMC was the country's second ranked copper producer. The OAO Gayskiy mining and metallurgical complex was UMMC's largest mining complex in terms of the volume of production. OAO Urals Electromet was the leading enterprise

within UMMC. In 2010, it employed more than 8,000 workers at the following four sites: the main production facility in the city of Verkhnyaya Pyshma, Nonferrous Alloys Production in the town Verkh-Neyvinskiy, Polymetal Production in Kirovograd, and Safyan Copper in Rezh, Sverdlovskaya Oblast'. In 2010, Urals Electromet produced 369,043 t of refined copper. A new electrolytic refining shop was under construction at Urals Electromet. The first stage of the shop was planned to go into operation in 2011. UMMC planned eventually to increase its copper cathode production capacity to 500,000 t/yr (OAO Urals Electromet, 2012a, b).

RCC, which was founded in 2004, was the country's third ranked copper cathode producer and second ranked copper wire rod producer. RCC had the capacity to produce 200,000 t/yr of copper cathode and 200,000 t/yr of copper wire rod. In 2010, RCC operated 10 mining and metallurgical enterprises in Russia and Kazakhstan. The major enterprises that composed RCC included the Aleksandrinskaya copper mining company, the ZAO Karabashmed, and the ZAO Kyshtymkiy copper refinery (Russian Copper Co., 2012).

The country's most promising site for increasing copper production was the Udokan deposit in Zabaykal'skiy Kray, which was one of the world's largest undeveloped copper deposits. It had estimated ore resources of 1.375 Gt, estimated copper resources of 19.95 Mt, and estimated silver resources of 11,900 t. On September 10, 2008, Metalloinvest Holding, which also owned Mikhailovskiy GOK, won the tender for Udokan, having offered 15 billion rubles (\$473 million) for the license. The company planned to construct mining and metallurgical facilities and to start the first stage of operations in 2014 with an initial production level of 150,000 t/yr of copper cathode. At full production capacity, which was scheduled to be reached in 2016, the mine was expected to produce 36 Mt/yr of copper concentrate and 474,000 t/yr of copper cathode. Government-controlled Rostekhnologii was Metalloinvest's partner in this project. Metalloinvest intended to spend \$3.4 billion on development of Udokan. The construction of mines and plants was expected to start in the beginning of 2011 (Kommersant.com, 2008; RIA Novosti, 2010).

Gold.—In 2010, gold production in Russia from mine output decreased by about 2% compared with that of 2009. Among the Russian-owned enterprises, the decrease came mainly from two enterprises—ZAO Chukotskaya GGK, which reduced production by 5,700 kilograms (kg), and OAO Pokrovskiy Mine, which decreased production by 2,000 kg. On the other hand, growth in production was achieved by OAO Polimetall, which increased its output by 1,800 kg, and OAO Polyus Zoloto, which increased its output by 1,700 kg. In 2010, foreign companies decreased production in Russia by 13.6%. Kinross Gold Corp. of Canada decreased production by 5,700 kg and Petropavlovsk plc of the United Kingdom decreased production by 900 kg (Braiko and Ivanov, 2011).

In 2010, the largest domestic gold-mining companies in terms of production were Polyus Zoloto (39,700 kg), Chukotskaya GGK (19,900 kg), Polimetall (11,100 kg), Severstal Nordgold NV (9,300 kg), and OOO Russdragmet (5,300 kg). Kinross Gold and Petropavlovsk produced 19,900 kg and 13,900 kg, respectively. In 2010, gold was mined in 24 regions of the

country, and in 14 of them, production reached or exceeded 1,000 kg. The highest producing regions were Krasnoyarskiy Kray (36,100 kg), Chukotskiy Avtonomnyy Okrug (24,900 kg), Amurskiy Kray (19,900 kg), Sakha Republic (Yakutiya) (18,600 kg), Irkutskaya Oblast' (16,000 kg), Magadanskaya Oblast' (15,400 kg), and Khabarovskiy Kray (15,200 kg) (Rough and Polished, 2011).

The average price of gold per troy ounce in 2010 was \$1,224.50, which constituted an increase of 26% compared with the average price in 2009. The Union of Gold Miners of Russia asserted that Russia could mine at least 300,000 kilograms per year of gold if the Government had policies in place that support gold mining. In particular, the Union proposed that regional authorities, in addition to Federal authorities, be permitted to issue licenses for gold mining at deposits with resources of less than 10,000 kg and that extraction taxes for alluvial and technogenic deposits be set to 0% (Zolotonews.ru, 2012).

Iron and Steel.—In 2010, production of crude steel increased by 12% compared with that of 2009 to 66.3 Mt; production of rolled steel increased by 13.7%, and production of steel pipe increased by 37.5%. Pig iron production increased by 9.7% compared with that of 2009 to 48.2 Mt.

Output in the iron and steel industry was highly concentrated in ten enterprises, five of which produced more than 60% of the total crude steel output. OAO Magnitogorsk mining and metallurgical complex (MMK) produced 18%, OAO Severstal produced 17.4%, OAO Novolipetskiy mining and metallurgical complex (NLMK) produced 14.6%. Two enterprises from the EVRAZ group—Zapadno-Sibirskiy mining and metallurgical complex (ZSMK) and Nizhny Tagil metallurgical complex (NTMK)—had 10.8% and 6.1% shares, respectively. In the rolled steel market, the two leaders were OAO MMK and Severstal, with 17.4% and 17.1% shares, respectively. NLMK produced 14.8%, ZSMK produced 9.1%, and NTMK produced 5.9% (Metalresearch.ru, 2011).

The mix of methods used in Russian steel production was still quite different from that prevailing on the world market—the percentage of steel produced in open hearth furnaces was still significant. In 2009, the percentage of steel produced in oxygen converter furnaces reached 64%, steel produced in electric furnaces stood at 27%, and steel produced in open hearth furnaces was 9%. It was projected that the last open hearth furnace would be shut down in Russia around 2020 (Metalinfo.ru, 2011).

Iron Ore.—In 2010, iron ore output increased by 3.8% compared with that of 2009 to 95.5 Mt. In 2010, practically all iron ore in the country was produced by six large companies. The largest of them was Holding Company Metalloinvest (HK Metalloinvest), which owned about 40% of the ore reserves in the country. HK Metalloinvest was the fourth ranked iron ore producer in the world following Vale S.A. of Brazil, BHP Billiton Ltd. of Australia, and Rio Tinto Ltd. of Australia. The share of iron ore production of HK Metalloinvest was about 40%. Three other companies—Evraz Holding, NLMK, and Severstal—together produced 48% of all iron ore in Russia (Mineral.ru, 2008; Dobprom.ru, 2011).

Major producers of iron ore in Russia significantly differed by the amount of ore reserves they owned. The reserves of the four leading companies were quite substantial, but the

fifth company—OAO Chelyabinsk mining and metallurgical complex (ChMK) which was a part of Mechel Holding—had reserves of only 400 Mt of iron ore. The Kursk Magnetic Anomaly contained 54.6% of all deposits of iron ore currently mined in the country. Murmanskaya Oblast' and the Republic of Kareliya contained another 18% of the country's deposits; and about 16% were located in Sverdlovskaya Oblast'. Most Russian iron ores were considered medium to poor, with iron content in the range of 16% to 40%. Only about 12% of reserves contained at least 60% of iron (Mineral.ru, 2008; Dobprom.ru, 2011).

Nickel.—Russia was the world's leading nickel mining country in 2010 (Kuck, 2012). Nornickel was the country's leading nickel producer and the world's leading nickel mining company; it produced 18.7% of the world's nickel. Nickel accounted for about 50% of Nornickel's revenues in 2010. Nornickel's operations in Russia were located on the Kola Peninsula in the northwest of the country and in the Noril'sk region on the Taymyr Peninsula in East Siberia. As of December 2009 (the latest year for which the data were available), proven and probable reserves of Nornickel were 8.7 Mt of copper, 5.7 Mt of nickel, 13 million troy ounces (404 t) of platinum, and 55 million troy ounces (1,711 t) of palladium. Nornickel also owned assets in Australia, Botswana, Finland, and South Africa (OJSC MMC Norilsk Nickel, 2011).

In 2010, enterprises of Nornickel produced 297,000 t of nickel, from which Kola GMK produced 111,000 t of nickel, and the Zapolyarniy division produced 124,000 t. Total production of nickel in Russia was about 269,000 t, which was an increase of 2.9% compared with that in 2009. Nickel was also produced in much smaller amounts at three other producers in the Ural Mountains region—OAO Ufaleynikel, OAO Yuzhuralnikel, and ZAO Rezhnikel (OJSC MMC Norilsk Nickel, 2011; Rbc.ru, 2012).

Nornickel was planning to invest more than \$35 billion in its Russian assets through 2025 with an emphasis on an aggressive technological development. The company planned by 2025 to increase the amount of ore mined in its Zapolyarniy division to 29 Mt, and in the Kola GMK, to 9.5 Mt (Rbc.ru, 2012).

Mineral Fuels

Coal.—In 2010, coal production increased by 17.7% compared with that of 2009. Anthracite production increased by about 22.5% to 8.7 Mt, and lignite production increased by about 11% to 76.6 Mt. Bituminous coal production increased by 19.8% and accounted for about 74% of total coal production. In 2010, about 35% of coal was produced by underground mining and 65% was produced by open pit mining. As of 2010, coal was mined at 137 open pits and 91 underground mines. Coal exports increased by 0.4% compared with those in 2009 and amounted to 97.4 Mt. Russian coal was exported to China, Germany, Japan, the Republic of Korea, Turkey, and other countries in Europe (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2011b).

Russian proven reserves of coal were estimated to be 173 Gt, of which about 70% was brown coal. Probable reserves of coal

in Russia were estimated to be 4 trillion metric tons. At current levels of extraction (about 300,000 t/yr) Russia had enough reserves for more than 400 years of production. As of 2010, the share of coal used to generate electric power in Russia was about 20%, whereas the world's percentage of coal-fired electric power generation was about twice as high. Because of increasing prices of natural gas, however, the Government was trying to increase the share of coal in power generation. According to the program for siting new powerplants, by 2020, the share of natural gas-powered plants was to decrease to between 30% and 35% from the current 70%, and the share of those powered by coal was to increase to between 31% and 38% from the current 26% (Oilngases.ru, 2012; Protown.ru, 2012).

Despite a continuous growth in demand for coking coal, its production in Russia stayed at a constant level of 70 to 75 Mt/yr. The Russian market of coking coal was dominated by the following three companies: Evraz Group, which owned the Raspskaya Mine; Sibuglemet Holding; and Southern Kuzbass Coal Co., which was a part of Mechel Holding. These three producers together controlled 57% of the coal market and about 75% of the market of the most valuable hard and semihard types of coal.

Only three of the largest metallurgical enterprises in Russia produced enough coke to meet their own production needs. Evraz Group and Mechel produced enough to supply coal to the open market. Severstal produced just enough to satisfy its own demand. Mechel started mining the Elgin deposit in Sakha (Yakutiya) Republic in 2010 and expected to produce about 2 Mt/yr from the mine (Minerjob.ru, 2010).

Natural Gas.—According to the Oil and Gas Journal, Russia holds the world's largest natural gas reserves, with 1,680 trillion cubic feet (about 47.5 trillion cubic meters), and Russia's reserves account for about one-quarter of the world's total proven reserves. The majority of these reserves are located in the western Siberia economic region at the Medvezh'ye, the Urengoy, and the Yamburg fields, which accounted for about 45% of Russia's total reserves. In 2010, Russia was the world leader in natural gas production, with output of about 651 billion cubic meters; the United States was the world second ranked natural gas producer, with output of 619 billion cubic meters. In 2010, Russian production increased by 11.5%, and Russian exports of natural gas increased by 3.6% to 174 billion cubic meters (U.S. Energy Information Administration, 2010; Enerdata.net, 2011; Protown.ru, 2012).

The leading natural gas producer in Russia, OAO Gazprom, produced 508.6 billion cubic meters per year, or 78% of all production. Gazprom also controlled most of the Russian gas reserves; more than 65% of proven reserves were directly controlled by the company. In 2010, Gazprom invested more than 25 billion rubles (\$823 million) in construction of natural gas hookups for Russian households and businesses; the percentage of entities with access to natural gas reached 69.8% during this time period. Gazprom's major producing fields were located in the Yamalo-Nenetskiy Avtonomnyy Okrug in Western Siberia. Gazprom was developing gasfields on the Yamal Peninsula in Western Siberia; the company expected this area to become the company's main gas producing region (U.S. Energy Information Administration, 2010).

The Medvezh'ye, the Urengoy, and the Yamburg gasfields, which were the country's leading gas-producing fields, had decreasing output in recent years. In response, in late 2008, the Yamal megaproject was launched to develop gas deposits on the Yamal Peninsula. In addition, the Zapolyarnyyi field, which was commissioned in 2001, was expected to offset some of the declines at Gazprom's leading three producing fields. Preparations also were underway by Gazprom for the development of the offshore Shtokman field, which is located in the Barents Sea. The Shtokman project was expected to become a main source of gas to export to Europe through the Nord Stream pipeline (U.S. Energy Information Administration, 2010; OAO Gazprom, 2012).

Gazprom possessed the largest gas transmission system in the world, which included 159,500 kilometers (km) of gas trunk lines. The company was engaged in developing major new pipeline projects, which included the Nord Stream and the South Stream pipelines. The Nord Stream pipeline would create a link with Russia's Baltic Sea coast near Vyborg to Germany's Baltic Sea coast in the vicinity of Greifswald. The pipeline would be 1,224 km in length. Gas supplies shipped through the Nord Stream pipeline would go to Denmark, France, Germany, the Netherlands, the United Kingdom, and other countries. Construction of the first line of the pipeline was started in April 2010 and was expected to be completed in 2011. The planned capacity of the first line of Nord Stream was 27.5 billion cubic meters per year (Nord Stream, 2012; OAO Gazprom, 2012).

The South Stream project was planned to include a section that would lie under the Black Sea from the Russkaya compressor station on the Russian coast to the Bulgarian coast. The total length of the offshore section would be about 900 km and would be at a maximum depth of more than 2 km. To provide the required amount of gas to the South Stream pipeline, gas transmission system capacities in Russia would need to be expanded. A comprehensive preinvestment feasibility study for the pipeline was being conducted by Gazprom (OAO Gazprom, 2012; South Stream, 2012).

Petroleum.—In 2010, Russia increased crude oil production by 1.5% compared with that of 2009. In 2010, Russia was the world's second ranked oil-producing country after Saudi Arabia. Petroleum was a leading export commodity for Russia and provided one-third of the total export revenue for the country. According to the Oil and Gas Journal, Russia's proven petroleum reserves were 60 billion barrels (8.2 Gt). According to those estimates, if Russia continued production at about the same amount per year, it had sufficient reserves for about 20 years of extraction (U.S. Energy Information Administration, 2010).

Russia's eight major oil-producing companies were (in decreasing order of production) OAO Rosneft', OAO Lukoil, TNK-BP, Surgutneftegaz, Gazprom Neft', Tatneft', Slavneft', and Bashneft'. Most of Russia's production was dominated by domestic firms. In 2003, BP invested in TNK plc of the United Kingdom, forming TNK-BP, and became one of Russia's major producers. Later attempts by foreign firms to increase their investment in Russia were unsuccessful, however. In 2010, foreign firms invested in Russian oil production by forming joint ventures with domestic firms, most often with Rosneft'.

Geographically, most of Russia's oil production comes from Western Siberia. The leading oil producing region in Western Siberia was Khanty-Mansiyskiy Avtonomnyy Okrug. Other large producing regions in Western Siberia were Yamalo-Nenetskiy Avtonomnyy Okrug, Tomskaya Oblast', and south of Tyumenskaya Oblast' at the Uvatskiye group of deposits. About 30% of Russia's oil production in 2010 took place in the European part of the country, namely in the Povolzh'ye (along the Volga) region, in the Republics of Tatarstan and Bashkortostan, and in Samarskaya Oblast'.

Russia had about 40 oil refineries with a combined refining capacity of about 260 Mt/yr and about 80 mini-refineries with a combined refining capacity of 11 Mt/yr. The efficiency of Russian refineries was very low, however. An efficiency indicator commonly used in Russia is the so-called refining depth, which is defined as a ratio of the net processed petroleum [the total processed petroleum minus the sum of mazut (low quality fuel oil) output and refinery waste] to the amount of the total processed petroleum. As of 2006, the average depth of refining at Russian refineries was only 71.3%. In October 2010, the Government adopted a new rule that allows a new refinery to be connected to a major pipeline only if its refining depth equals or exceeds 70%. A new refinery that was currently under construction at the end of the East Siberia-Pacific Ocean pipeline was planned to have a refining depth of 93%, which is similar to that of most U.S. refineries (Vostochnyi nefteprovod, 2010).

Outlook

Russia has large reserves of a variety of mineral resources and undoubtedly will continue to be one of the world's leading mineral producers. Although the country's economy is expected to grow in 2011, some problems are likely to remain. In 2010, the Russian economy returned to economic growth after the significant decline in 2009. According to some analysts, however, the recovery of 2010 did not appear sufficiently vigorous to carry the country's strong economic growth into the next decade (Vinogradov, 2010). Even in the sectors of the economy where the country is among the world leaders (ferrous metals, gas, petroleum), Russian industry has obsolete plants and equipment, a slow rate of innovation, and low labor productivity. In some subsectors of the mineral industry, exploration is lagging behind production, which signals insufficient expenditures on prospecting and exploration activities. After the demise of the Soviet Union in 1991, some minerals that were not mined on Russian territory (such as manganese) stopped being produced, and Russia had to rely on imports from its neighbors or experience broken production chains. In the years to come, Russia will likely need to invest more into domestic exploration activities and (or) establish better business relations with neighboring countries. Although the Customs Union with Belarus and Kazakhstan, which went into force in 2010, is a step in the second direction, it remains to be seen whether Russia will be able to maintain and strengthen its leading positions in mineral production in the next decade (Evraziyskaya ekonomicheskaya komissiya, 2012).

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

(Metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010	
METALS						
Aluminum:						
Ore and concentrate:						
Alumina	thousand metric tons	3,265	3,333	3,112	2,794	2,857
Bauxite		6,300,000	5,775,000	5,675,000	5,775,000	5,475,000
Nepheline concentrate, 25% to 30%		5,140,000 ^r	4,880,000 ^r	4,760,000 ^r	4,400,000 ^r	4,900,000
Metal, smelter, primary		3,717,907	3,955,417	4,190,000	3,815,000	3,947,000
Antimony, mine output, recoverable Sb content ^c		3,500	3,500	3,500	3,500	3,000
Arsenic, white ^c		1,800	1,500	1,500	1,500	1,500
Bismuth:^c						
Mine output, Bi content		55	55	70	65	50
Metal, refined		11	12	13	12	10
Cadmium, metal, smelter		690	810	800	700	NA
Chromium, chrome ore, marketable		966,065	776,681	913,000	416,194	400,000 ^e
Cobalt:^c						
Mine output, recoverable Co content		6,300	6,300	6,200	6,100	6,200
Metal, refined		5,000	3,800	2,500	2,352 ³	2,460
Copper:						
Ore, recoverable Cu content ^c		725,000	740,000	750,000	676,000 ^r	703,000
Metal:						
Blister, smelter:^c						
Primary		635,000	650,000	630,000	580,000 ^r	590,000
Secondary		312,000	290,000	235,000	220,000 ^r	240,000
Total		947,000	940,000	865,000	800,000 ^r	830,000
Refined:						
Primary		635,000	650,000	610,000	612,000 ^r	656,000
Secondary		312,000	289,000	250,000	250,000 ^r	218,000
Total		947,000	939,000	860,000	862,000 ^r	874,000
Gallium ^c		11	11	11	11	11
Gold:						
Mine output, Au content	kilograms	159,340	156,975	172,031	192,832 ^r	189,000
Secondary recovery	do.	4,981	5,867	8,140	12,404 ^r	12,600
Indium ^c		10	10	10	4	NA
Iron and steel:						
Iron ore:						
Gross weight		102,000,000	105,000,000	99,900,000	92,000,000	95,500,000
Fe content, 55% to 63% ^c		59,100,000	60,800,000	57,800,000	53,200,000	58,500,000
Metal:						
Pig iron		51,683,000	51,523,000	48,300,000	43,930,000	48,200,000 ^e
Direct-reduced iron ^c		3,280,000 ^r	3,410,000 ^r	4,560,000 ^r	4,670,000 ^r	4,700,000
Ferroalloys:^c						
Blast furnace:						
Ferromanganese		130,000	120,000	110,000	88,000 ^r	171,600 ³
Ferrophosphorus		3,500	3,500	3,500	3,000	3,600
Spiegeleisen		7,000	7,000	7,000	6,500	5,500
Electric furnace:						
Ferrochromium		600,000	570,000	490,000	378,000 ³	414,288 ³
Ferrochromiumsilicon		4,000	4,000	4,000	3,500	4,200
Ferronickel, gross weight:^{3,4}						
High-nickel		16,085 ^r	19,031 ^r	17,971 ^r	17,489 ^r	19,763
Other		12,340 ^r	12,840 ^r	13,440 ^r	14,040 ^r	13,165
Ferroniobium (ferrocolumbium)		--	121	121	120	121

See footnotes at end of table.

TABLE 1—Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010
METALS—Continued					
Iron and steel—Continued:					
Metal—Continued:					
Ferroalloys—Continued: ^c					
Electric furnace—Continued:					
Ferrosilicon	882,300 ³	896,100 ³	850,000	745,000	916,000
Ferrovandium	11,000	12,000	12,000	8,029 ^{r,3}	13,507 ³
Silicomanganese	40,000	40,000	40,000	98,700	147,900 ³
Silicon metal	54,500	54,000	54,000	23,900 ^r	48,700
Other	22,000	22,000	22,000	20,000	18,000
Total, ferroalloys	1,780,000	1,760,000	1,620,000 ^r	1,410,000 ^r	1,780,000
Steel:					
Crude	70,816,000	72,389,000 ^r	68,700,000 ^r	59,166,000	66,300,000
Finished, rolled	58,200,000	59,660,000	56,564,000	50,846,000	57,800,000
Pipe	7,898,400	8,706,000	7,772,000	6,655,000	9,149,000
Lead: ^c					
Mine output, recoverable Pb content	36,000 ^r	50,000	60,000	70,000	97,000
Metal, refined, primary and secondary	78,000	94,000	80,000	73,000	89,000
Magnesium: ^c					
Magnesite	1,200,000	1,200,000	1,200,000	1,000,000	1,200,000
Metal, including secondary	35,000	37,000	37,000	37,000	37,000
Manganese ore: ^c					
Gross weight	12,000	44,000	45,000	45,000	45,000
Mn content	2,400	9,000	9,200	9,200	9,200
Mercury ^c					
	50	50	50	50	50
Molybdenum, in concentrate ^c					
	3,100	3,300	3,600	3,800	3,800
Nickel:					
Marketable mine production, Ni content:					
Laterite ore	37,758 ^r	45,687 ^r	36,804 ^r	32,298 ^r	41,184
Sulfide concentrate	239,231	234,083	229,765 ^r	229,493	228,093
Total	276,989 ^r	279,770 ^r	266,569 ^r	261,791 ^r	269,277
Matte, for export, primarily to China	1,972 ^r	919 ^r	-- ^r	-- ^r	660
Nickel products:					
Ferronickel:					
High-nickel	14,436	17,111	16,158	15,565	16,799
Other	12,340 ^r	12,840 ^r	13,440 ^r	14,040 ^r	14,600
Metal	255,045	248,363	242,409	237,270	243,676
Oxide sinter	2,713	235	--	--	--
Chemicals	3,500	3,100	2,900	2,700	2,900
Total	288,034 ^r	281,649 ^r	274,907 ^r	269,575 ^r	277,975
Niobium (columbium)					
	NA	NA	NA	NA	NA
Platinum-group metals: ^c					
Platinum	29,000 kilograms	27,000	25,000 ^r	24,500 ^r	25,000
Palladium	98,400 do.	96,800	87,700	83,200 ³	84,700
Other	15,600 do.	14,500	12,500	11,900	12,000
Total	143,000 do.	138,000	125,000 ^r	120,000 ^r	122,000
Rhenium ^c	1,400 do.	1,500	1,500	1,500	1,500
Selenium ^c	110,000 do.	120,000	130,000	140,000	140,000
Silicon ^c	600,000	635,000	640,000	640,000	650,000
Silver:					
Mine output, Ag content	973,539 ^r kilograms	911,332 ^r	1,132,166 ^r	1,312,567 ^r	1,356,000
Secondary recovery	265 do.	265	265	228 ^r	197

See footnotes at end of table.

TABLE 1—Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010
METALS—Continued					
Tin: ^e					
Mine output, recoverable Sn content	3,000	2,500	1,500	1,200	160
Metal, smelter:					
Primary	4,980	3,800	2,000	1,700 ^r	100
Secondary	500	400	300	300	300
Total	5,480	4,200	2,300	2,000 ^r	400
Titanium sponge	32,170	34,150	34,950	26,600	18,621
Tungsten, concentrate, W content ^e	2,800	3,400 ^r	3,000	2,300 ^r	2,800
Vanadium, metal ^e	15,100	14,500	14,500	14,500	15,000
Zinc: ^e					
Mine output, recoverable Zn content	190,000	185,000	204,000	225,000	269,000
Metal, smelter, primary and secondary	240,000	260,000	260,000	225,000	260,000
Zirconium, baddeleyite concentrate, averaging 98% ZrO ₂	7,500 ^e	7,136	7,000	5,000	6,000 ^e
INDUSTRIAL MINERALS					
Asbestos, grades I-VI ^e	925,000	1,025,000 ³	1,017,000 ³	1,000,000	1,000,000
Barite ^e	63,000	63,000	63,000	63,000	60,000
Boron ^e thousand metric tons	400	400	400	400	400
Cement, hydraulic	54,731,000 ^r	59,939,000 ^r	53,548,000 ^r	44,266,000 ^r	50,400,000
Clays:					
Bentonite	NA	NA	NA	NA	NA
Kaolin concentrate ^e	45,000	45,000	45,000	45,000	45,000
Diamond: ^e					
Gem carats	23,400,000	23,300,000	21,925,000 ³	17,791,400 ³	17,800,000
Industrial do.	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000
Synthetic do.	80,000,000	80,000,000	80,000,000	80,000,000	80,000,000
Total do.	118,000,000	118,000,000	117,000,000	113,000,000	113,000,000
Feldspar ^e	45,000	45,000	45,000	45,000	45,000
Fluorspar, concentrate, 55% to 96.4% CaF ₂ ^e	210,000	180,000	269,000	240,000	250,000
Germanium	2	2	2 ^e	2 ^e	2 ^e
Graphite	14,000	14,000	14,000	14,000	14,000
Gypsum ^e	2,600,000	3,000,000	3,600,000	2,900,000 ³	2,900,000
Iodine ^e	300,000	300,000	300,000	300,000	300,000
Lime, industrial and construction ^e	8,200,000	8,200,000	8,200,000	7,000,000	8,000,000
Limestone	6,930,000	6,910,000	7,420,000	NA	NA
Mica ^e	100,000	100,000	100,000	100,000	100,000
Nitrogen, N content of ammonia	10,500,000	10,500,000 ^e	10,425,000	10,441,000	10,400,000
Perlite	NA	NA	NA	NA	NA
Phosphate rock: ^e					
Gross weight	11,000,000 ^r	11,400,000	10,400,000	9,500,000 ^r	11,000,000
P ₂ O ₅ content	4,000,000 ^r	4,200,000 ^r	3,800,000 ^r	3,500,000 ^r	4,000,000
Potash, marketable, K ₂ O equivalent	5,742,000 ^r	6,429,000 ^r	5,992,400 ^r	3,727,000	6,283,000
Salt, all types	2,800,000	2,200,000	2,200,000 ^e	2,200,000 ^e	2,200,000 ^e
Soda ash ^e	2,800,000	2,900,000	2,800,000	2,300,000	2,400,000
Sulfur: ^e					
Native	50,000	50,000	50,000	50,000	50,000
Pyrites	304,000	200,000	200,000	200,000	200,000
Byproduct:					
Metallurgy	695,000	800,000	820,000	820,000	820,000
Natural gas	6,346,000 ³	6,000,000	6,100,000	6,000,000	6,000,000
Total	7,400,000	7,050,000	7,170,000	7,070,000	7,070,000

See footnotes at end of table.

TABLE 1—Continued
 RUSSIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010	
INDUSTRIAL MINERALS—Continued						
Sulfur, sulfuric acid	9,500,000 ^e	9,689,000	9,106,000	8,600,000 ^r	10,200,000	
Talc ^e	160,000	170,000	160,000	160,000	160,000	
Vermiculite ^e	25,000	25,000	25,000	25,000	25,000	
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Anthracite	thousand metric tons	8,290	8,662	6,383	7,100 ^r	8,700
Bituminous	do.	202,128	209,216	216,049	200,982 ^r	240,750
Lignite	do.	74,148	71,143	82,485 ^r	69,011 ^r	76,600
Total	do.	284,566	289,021	304,917 ^r	277,093 ^r	326,050
Coke, metallurgical, 6% moisture content	do.	30,701	32,254 ^r	32,082 ^r	24,200 ^r	26,800
Natural gas, marketed	million cubic meters	656,016	653,000	663,000	583,610	651,000
Oil shale ^e		1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Peat, horticultural and fuel uses ^e		1,300,000	1,300,000	1,300,000	1,300,000	1,300,000
Petroleum:						
Crude:						
In gravimetric units		480,484,000	491,000,000	488,105,000	479,000,000	486,000,000
In volumetric units ^e	thousand 42-gallon barrels	3,490,000	3,570,000	3,550,000	3,590,000	3,530,000
Refinery products:						
In gravimetric units		219,575,000	229,000,000	237,000,000	237,000,000	250,000,000
In volumetric units ^e	thousand 42-gallon barrels	1,770,000	1,840,000	1,910,000	1,910,000	2,010,000
Uranium:						
U content		3,400 ^r	3,413	3,521	3,564	3,562
U ₃ O ₈ content		4,009 ^r	3,762	4,152	4,203	4,200

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

¹In addition to the commodities listed, Russia produces a number of other mineral commodities, which include rare-earth metal concentrates, tantalum, and tellurium, but available information is inadequate to make estimates of output.

²Table includes data available through March 13, 2012.

³Reported figure.

⁴Excludes nickel-chromium remelt alloy produced from scrap. The remelt alloy typically has a nickel content of 20% to 50%.

TABLE 2
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Alumina	Achinsk (United Company RUSAL)	Achinsk in East Siberia	900,000
Do.	Bogoslovsk (United Company RUSAL)	Krasnotur'insk	1,050,000
Do.	Boksitogorsk (United Company RUSAL)	Leningradskaya Oblast'	200,000
Do.	Pikalyovo (United Company RUSAL)	Pikalyovo	300,000
Do.	Uralsk (United Company RUSAL)	Kamensk-Uralskiy	700,000
Aluminum, primary smelters	Bogoslovsk (United Company RUSAL)	Krasnotur'insk	175,000
Do.	Bratsk (United Company RUSAL)	Bratsk	950,000
Do.	Irkutsk (United Company RUSAL)	Irkutskaya Oblast'	300,000
Do.	Kandalaksha (United Company RUSAL)	Kola Peninsula	75,000
Do.	Khakas (United Company RUSAL)	Khakassiya	300,000
Do.	Krasnoyarsk (United Company RUSAL)	Krasnoyarskiy Kray	875,000
Do.	Nadvoitsy (United Company RUSAL)	Nadvoitsy, Kareliya Republic	75,000
Do.	Novokuznetsk (United Company RUSAL)	Novokuznetsk	300,000
Do.	Sayansk (United Company RUSAL)	Sayanogorsk	425,000
Do.	Uralsk (United Company RUSAL)	Kamensk-Uralskiy	150,000
Do.	Volgograd (United Company RUSAL)	Volgogradskaya Oblast'	175,000
Do.	Volkhov (United Company RUSAL)	Volkhov, east of St. Petersburg	20,000
Amber	Kaliningrad Amber enterprise (Kaliningrad regional authorities and Alrosa Co. Ltd.)	Kaliningrad Oblast'	250
Antimony:			
Sb content of concentrate	Sarylakh deposit	Ust'-Nera region, Sakha (Yakutiya) Republic	6,000 ²
Do.	Sentachan deposit	Northeastern Sakha (Yakutiya) Republic	NA
Compounds and metals	Ryazsvetmet plant	Ryazanskaya Oblast'	NA
Apatite, concentrate	Khibiny apatite association (OAO Apatit)	Kola Peninsula	15,000,000
Do.	Kovdor iron ore mining association	do.	700,000
Asbestos	Bazenovskoye chrysotile deposit	Sverdlovskaya Oblast'	NA
Do.	Molodeznoye deposit	Zabaykal'sk (Chita) Oblast'	NA
Do.	"Orenburg Minerals" Co., Kiembraevskoye chrysotile deposit	Orenburgskaya Oblast'	500,000
Do.	"Tuvaasbest" plant, Ak-Dovurakskoye chrysotile deposit	Tyva Republic	250,000
Do.	"Uralasbest" mining and clarification plant	Central Ural Mountains	1,100,000
Barite	Salarinskiy mining and beneficiation complex	Kvartsitovaya Sopka deposit	100,000
Bauxite	OAO Sevuralboksitruuda (United Company RUSAL)	Severoural'sk region	NA
Do.	South-Urals mining company (United Company RUSAL)	South Ural Mountains	NA
Do.	Severnaya Onega Mine (United Company RUSAL)	Northwest region	800,000
Do.	Komi Aluminum (United Company RUSAL)	Sredne-Timanskiy	3,000,000
Boron, boric acid	Bor Association	Primorskiy Kray	140,000
Do.	Amur River complex	Far East	8,000
Do.	Alga River chemical complex	do.	12,000
Chromite	Saranov complex	Saranovskiy	200,000
Coal	Donets (east) Basin	Rostovskaya Oblast'	30,000,000
Do.	Kansk Achinsk Basin	East Siberia	50,000,000
Do.	thousand metric tons Kuznetsk Basin (Kuzbass)	West Siberia	160,000
Do.	Moscow Basin	Moscow region	15,000,000
Do.	Neryungri Basin	Sakha (Yakutiya) Republic	15,000,000
Do.	Pechora Basin	Komi (Syktyvkar) Republic	30,000,000
Do.	South Yakutiya Basin	Sakha (Yakutiya) Republic	17,000,000
Cobalt	OJSC MMC Norilsk Nickel	Noril'sk, Kola Peninsula	4,000
Do.	Rezh and Yuzhuralnikel enterprises	South Ural Mountains	2,100

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Cobalt—Continued		Ufaleynikel Co.	Chelyabinskaya Oblast', Ural Mountains	4,000
Do.		Khovu-Aksynskoe (nickel-cobalt) deposit	Khovu-Aksy, Tyva Republic	NA
Copper:				
Cu in concentrate		OJSC MMC Norilsk Nickel	Noril'sk region, Kola Peninsula	500,000
Do.		ZAO Russian Copper Co. (RMK)	Urals	70,000
Do.		Metalloinvest Holding	Udokan, Zabaykal'skiy Kray	NA
Do.		Ural Mining and Metallurgical Co. (UMMC)	do.	230,000
Metal, refined		OJSC MMC Norilsk Nickel	Noril'sk region, Kola Peninsula	450,000
Do.		ZAO Russian Copper Co. (RMK)	Urals	170,000
Do.		Ural Mining and Metallurgical Co. (UMMC)	do.	360,000
Diamond, gem and industrial	thousand carats	Almazy Rossii-Sakha Joint Stock Co. (Alrosa Co. Ltd.) enterprises: Udachnyy mining and beneficiation complex	Sakha (Yakutiya) Republic mines: Zarnitsa and Udachnyy	NA
Do.	do.	Mirny mining and beneficiation complex	Mir and International	NA
Do.	do.	Aikhal mining and beneficiation complex	Aikhal and Komsomol'skiy	NA
Do.	do.	Anabaraskiy mining and beneficiation complex	Alluvial mines	NA
Do.	do.	Nyurbinskiy mining and beneficiation complex	Nyurbinskiy and Botuobinskiy	NA
Do.	do.	Lomonosov	Arkhangel'skaya Oblast'	NA
Feldspar		Kheto-Lanbino and Lupikko deposits	Kareliya Republic	NA
Ferroalloys				
		ChEMK Industrial Group enterprises:		
Do.		Chelyabinsk electrometallurgical plant	Chelyabinskaya Oblast'	450,000
Do.		Kuznetsk ferroalloys plant	Novokuznetsk	400,000
Do.		Chusovoy iron and steel plant	Perm' Kray	NA
Do.		Klyuchevsk ferroalloy plant	Dvurechensk	160,000
Do.		Kosaya Gora iron works	Kosaya, Gora	200,000
Do.		Lipetsk iron and steel works	Lipetskaya Oblast'	NA
Do.		Serov ferroalloy plant (a subsidiary of Eurasian Natural Resources PLC [ENRC])	Sverdlovskaya Oblast'	NA
Ferronickel		Ufaleynikel company	Chelyabinskaya Oblast', Urals	5,000
Ferrovandium		Vanadii-Tulachermet (Evraz Group)	Tula, North Caucasus	NA
Fluorspar				
		Abagaytuy deposit	Transbaikal	NA
Do.		Usugli Mine	do.	NA
Do.		Kyakhinskiy deposit	do.	NA
Do.		Kalanguy mining complex	Zabaykal'skiy Kray	NA
Do.		Yaroslavsky mining and beneficiation complex	Pogranichnoye and Vosnesenskoye deposits, Russian Far East's Primorskiy Kray	NA
Gallium		Achinsk (United Company RUSAL)	Achinsk in East Siberia	15 ²
Do.		OOO Galliy	NA	NA
Do.		Novosibirsk tin complex	Novosibirsk	NA
Do.		Pikalevo (United Company RUSAL)	Pikalevo	NA
Germanium, metal and products		Federal State Unitary Enterprise Germanium	Kranoyarsk	7
Gold				
	kilograms	Mining companies:	Mining regions:	
		ZAO Amur a/s	Khabarovskiy Kray	5,500
Do.	do.	OAo Buryatzoloto	Buryatiya Republic	5,000
Do.	do.	ZAO Chukotskaya GGK	Chukotskiy Avtonomnyy Okrug	1,700
Do.	do.	OOO GRK Aldanzoloto	Sakha (Yukutiya) Republic	4,000
Do.	do.	Kinross Gold Corp.	Chukotskiy Avtonomnyy Okrug	550,000,000
Do.	do.	LT-Resurs, ZAO	Irkutskaya Oblast'	2,700
Do.	do.	OOO Neryungri-Metallik	Sakha (Yakutiya) Republic	1,500
Do.	do.	OOO Nirungan	do.	1,100
Do.	do.	OAo Omchak	Magadanskaya Oblast'	3,000
Do.	do.	OAo Omolonskaya ZRK	do.	5,000
Do.	do.	ZAO Omsukchanskaya GGK	do.	3,000

See footnotes at end of table.

TABLE 2—Continued
 RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^e
Gold—Continued	Mining companies—Continued:	Mining regions—Continued:	
Do.	kilograms Oyna, a/s	Tyva Republic	1,500
Do.	do. Petropavlovsk plc	Petropavlovsk	NA
Do.	do. OAO Pokrovskiy Mine	Amurskaya Oblast'	6,000
Do.	do. OAO Polimetal	Magadanskaya and Sverdlovskaya Oblast's, Khabarovskiy Kray	7,500
Do.	do. Polyarnaya, a/s	Chukotskiy Avtonomnyy Okrug	1,000
Do.	do. OAO Polyus Zoloto	Krasnoyarskiy Kray	38,000
Do.	do. OOO Priisk Drazhnyy,	do.	1,200
Do.	do. OAO Priisk Solov'yevskiy	Amurskaya Oblast'	1,500
Do.	do. OOO Ros-DV	Khabarovskiy Kray	1,100
Do.	do. OOO Russdragmet	Khabarovskiy Kray, Zabaykal'skiy Kray	6,000
Do.	do. Seligdar, a/s	Sakha (Yakutiya) Republic	2,000
Do.	do. Severstal Nordgold NV	Russia, Kazakhstan, and West Africa	NA
Do.	do. OOO Sovrudnik	Krasnoyarskiy Kray	2,000
Do.	do. OAO Susumanzoloto	Magadanskaya Oblast'	3,000
Do.	do. Seligdar, a/s	Sakha (Yakutiya) Republic	2,000
Do.	do. OAO Susumanzoloto	Magadanskaya Oblast'	3,000
Do.	do. OAO Uralelktomed'	Sverdlovskaya Oblast'	1,400
Do.	do. Vitim, a/s	Irkutskaya Oblast'	2,900
Do.	do. Votok, a/s	Khabarovskiy Kray	1,100
Do.	do. Yuzhuralzoloto	Chelyabinskaya Oblast'	4,200
Do.	do. Zapadnaya, a/s	Krasnoyarskiy Kray	1,900
Do.	do. ZAO Zolotaya, ZDK	Khakasiya Republic	1,200
Indium:			
Primary	Chelyabinsk zinc plant	Chelyabinskaya Oblast'	6
Secondary	Elektrotsink plant	Vladikavkaz	6
Iron ore	Kursk Magnetic Anomaly (KMA) region, which contains the following enterprises: Lebedi and Stoilo Mikhaylovka	Locations: Gubkin Zheleznogorsk	50,000,000 ²
Do.	Northwest region, which contains the following enterprises: Kostomuksha Kovdor Olenegorsk	Locations: Kostomuksha Kola Peninsula Olenegorsk	22,000,000 ²
Do.	Siberia region, which contains the following enterprises: East: Korshunovo Rudnogorsk West: Abakan Sheregesh Tashtagol Teya	Locations: Zheleznogorsk Rudnogorsk Abaza Sheregesh Tashtagol Vershina Tei	18,000,000 ²
Do.	Ural Mountains region, which contains the following enterprises: Akkermanovka Bakal Goroblagodat Kachkanar Magnitogorsk Peshchanka	Locations: Novotroitsk Bakal Kushva Kachkanar Magnitogorsk Rudnichnyy	22,000,000 ²

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Lead, metal	Dalpolymetal lead smelter	Rudnaya in Primorskiy Krai	20,000
Do.	Elektrozinc lead smelter [Ural Mining and Metallurgical Co. (UMMC)]	Vladikavkaz in North Caucasus	40,000
Lead-zinc, recoverable content of ore:			
Lead, recoverable Pb content of ore	Altay mining-beneficiation complex	Altay Krai, South Siberia	2,000
Do.	Dalpolymetal mining-beneficiation complex	Primorskiy Krai	20,000
Do.	Nerchinsk polymetallic complex	Zabaykal'skiy Krai	7,000
Do.	Sadon lead-zinc complex	North Ossetia	5,000
Do.	Salair mining-beneficiation complex	Kemerovskaya Oblast'	2,000
Zinc, recoverable Zn content of ore	Altay mining-beneficiation complex	Altay Krai, South Siberia	1,000
Do.	Dalpolymetal mining-beneficiation complex	Primorskiy Krai	25,000
Do.	Nerchinsk polymetallic complex	Zabaykal'skiy Krai	12,500
Do.	Sadon lead-zinc complex	Severnaya Osetiya	14,000
Do.	Salair mining-beneficiation complex	Kemerovskaya Oblast'	10,500
Limestone	Mazul'skiy Mine (United Company Rusal)	Goryachegorsk massif, east Siberia	NA
Lithium and its compounds	JSC Novosibirsk Chemical Plant (TVEL Corp.)	Novosibirsk	NA
Do.	JSC Chemical-Metallurgical Plant (TVEL Corp.)	Kransnoyarsk	NA
Magnesite	Karagayskiy open pit (Magnezit Group) and Magnezitovaya underground mine (Magnezit Group)	Sakha group of deposits (Chelyabinskaya Oblast')	3,800,000 ²
Magnesium, metal (for sale)	Avisma plant	Berezniki	35,000
Do.	Solikamsk plant (Uralkaliy)	Permskiy Krai	30,000
Mica	Emel'dzhak deposit, Aldan Shield	Sakha (Yakutiya) Republic	NA
Do.	Lopatova Guba mica pit, Northern Kareliya	Kareliya Republic	NA
Do.	Kovdor phlogopite Mine (Mica Mine; Slyuda Mine; Kovdorslyuda Shaft)	Kola Peninsula, Murmanskaya Oblast'	NA
Do.	Irkutsk complex (JSC "Vostoksluda")	Mam deposit, Irkutskaya Oblast'	NA
Molybdenum	Dzhida tungsten-molybdenum Mine	West Transbaikalia	NA
Do.	Sorsk molybdenum mining enterprise	Khakasiya Republic	NA
Do.	Tyrnyauz tungsten-molybdenum Mine	North Caucasus	NA
Do.	Shakhtaminskoye molybdenum mining enterprise	Zabaykal'skiy Krai	NA
Natural gas	million cubic meters	Komi Republic	8,000
Do.	do.	Noril'sk area	5,500
Do.	do.	North Caucasus	6,000
Do.	do.	Sakhalin	2,000
Do.	do.	Tomsk Oblast	500
Do.	do.	Tyumen Oblast, including:	575,000 ²
Do.	do.	Medvezhye field	(75,000)
Do.	do.	Urengoy field	(300,000)
Do.	do.	Vyngapur field	(17,000)
Do.	do.	Yamburg field	(170,000)
Do.	do.	Bovanenko field	NA
Do.	do.	Pestovoyy field	NA
Do.	do.	Zapolyarnyy field	NA
Do.	do.	Shtokmanov field	NA
Do.	do.	Urals	45,000
Do.	do.	Volga	6,000
Do.	do.	Yakut-Sakha	1,500
Nepheline syenite	Apatite complex	Kola Peninsula	1,500,000
Do.	Kiya-Shaltyr Mine (United Company RUSAL)	Goryachegorsk massif, east Siberia	NA
Nickel:			
Ni in ore	OJSC MMC Norilsk Nickel	Kola Peninsula and Noril'sk region	300,000
Do.	OAO Ufaleynikel [Koks Company of Industrial Metallurgical Holding]	Chelyabinskaya Oblast', Urals	17,000
Do.	OAO Yuzhuralnikel [Mechel OAO]	South Urals	3,000

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Nickel—Continued:			
Metal:			
Smelting	OJSC MMC Norilsk Nickel	Noril'sk region, Kola Peninsula	160,000
Do.	do.	Pechenga	50,000
Do.	do.	Monchegorsk	50,000
Refining	do.	do.	140,000
Do.	do.	Noril'sk region, Kola Peninsula	100,000
Ni products and Ni in FeNi	Enterprises	Location:	
	Rezh [Ural Mining and Metallurgical Co. (UMMC)]	South Urals	65,000 ²
	Ufaleynikel [Koks company of Industrial Metallurgical Holding]	do.	
	Yuzhuralnikel [Mechel OAO]	do.	
Niobium (columbium)	Karnasurt mining enterprise (AO Sevredmet)	Lovozerkoye deposit, Kola Peninsula	12,000
Oil shale	Leningradslanets Association	Slantsy, Leningradskaya Oblast'	5,000,000
Petroleum	Bashneft'	Bashkortostan Republic	12,000,000\
Do.	Gazprom Neft'	Deposits throughout Russia	50,000,000
Do.	OAO Lukoil	West Siberian deposits: Kechimovskoye Nivagalskoye Urals deposits Volga deposits Timen Pechora deposit: Yuzhnaya Khylochuya Komi Republic deposits: Kyrta'yelskoye Pashshorskoye Perevoznoye	100,000,000 ²
Do.	OAO Novatek	West Siberia	5,000,000
Do.	OAO Rosneft'	Deposits throughout Russia	120,000,000
Do.	Russneft'	Central and West Siberia, Ural Mountains and Volga regions	15,000,000
Do.	Slavneft'	West Siberia and Krasnoyarskiy Kray	20,000,000
Do.	Surgutneftegas	NA	60,000,000
Do.	Tatneft'	Deposits Romashkinskoye Novo-Elkhovskoye Bavlinskoye Bondyuzskoye Pervomayskoye Sabandchinskoye	30,000,000 ²
Do.	TNK-BP	Deposits Kamennoye Kovyatka Russkoye Suzunskoye Tagul'skoye Uvat Verkhnechonsk	75,000,000 ²
Phosphate rock	Kingisepp complex (OAO Fosforit)	Leningradskaya Oblast'	3,500,000
Do.	Lopatino and Yegorevsk deposits	Moscow Oblast'	NA
Do.	Polpinskoye deposit	Bryanskaya Oblast'	NA
Do.	Verkhnekamsk deposit	Ural'skiye Gory	NA
Phosphate rock, apatite concentrate	OAO Apatit	Kola Peninsula	12,000,000
Do.	Kovdor iron mining complex	do.	700,000

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Platinum-group metals:			
Ore, PGM content	OJSC MMC Norilsk Nickel	Noril'sk region, Kola Peninsula	150
Do.	AO Koryakgeoldobycha, Amur Prospectors	Placer deposits (mostly platinum), Urals; Siberia; Russian Far East	10
Metals	Krasnoyarsk Nonferrous Metals Plant (Krastsvetmet)	Krasnoyarskiy Krai	NA
Do.	Ekaterinburgskiy plant (EZOTsM)	Sverdlovskaya Oblast'	NA
Do.	Priobsk plant (OJSC Gazprom Neft)	Khanty-Mansiyskiy Avtonomnyy Okrug	NA
Potash, K ₂ O equivalent	Uralkaliy	Verkhnekamsk deposit	3,000,000
Do.	OAO Silvinit	Solikamsk-Berezniki regions, Ural'skiye Gory	2,000,000
Rare earths	Lovozerkoye deposit	Kola Peninsula	NA
Salt	AO Bassol'	Lake Baskunchak in Astrakhanskaya Oblast'	2,500,000
Do.	Dus-Dagskoe deposit	Dus-Dag Mountains	25,000
Silver	Dukat Mine	Magadanskaya Oblast'	1,000
Do.	Kinross Gold Corp.	Chukotskiy Avtonomnyy Okrug	550,000,000
Soda ash	Achinsk plant	East Siberia	595
Do.	Berezniki plant	Ural'skiye Gory	1,080
Do.	Pikalevo plant	Leningradskaya Oblast'	200
Do.	Sterlitamak plant	Bashkortostan Republic	2,135
Do.	Volkhov plant	Leningradskaya Oblast'	20
Steel, crude	OAO Amurmetal	Komsomol'sk-na-Amure	1,600,000
Do.	JSC Asha Metallurgical Plant	Chelyabinskaya Oblast'	450,000
Do.	Beloretsk Iron and Steel Works	Bashkirskoye	380,000
Do.	Chusovskoy Iron and Steel Works	Perm' Krai	570,000
Do.	JSC Electrostal Metallurgical Plant	Moscow	314,000
Do.	Gorkovskoy Metallurgichesky Zavod	Nizhegorodskaya Oblast'	78,000
Do.	Gur'yevsk Steel Works	Kemerovskaya Oblast'	160,000
Do.	Karaganda	Karagandinskaya Oblast'	6,300,000
Do.	Kuznetsk Steel Works	Kemerovskaya Oblast'	4,700,000
Do.	Lys'va Metallurgical Plant	Permskaya Oblast'	350,000
Do.	OAO Magnitogorsk mining and metallurgical complex (MMK)	Chelyabinskaya Oblast'	16,200,000
Do.	OAO Mechel (Mechel)	do.	7,000,000
Do.	Nizhniy Sergi Steel Works	Sverdlovskaya Oblast'	300,000
Do.	Nizhniy Tagil mining and metallurgical complex (NTMK) (Evraz Group)	do.	8,000,000
Do.	Nosta JSC (JSC Orsk-Kahlilovo Iron and Steel Works)	Novotroitsk, Orenburgskaya Oblast'	4,600,000
Do.	Novolipetskiy mining and metallurgical complex (NLMK)	Lipetskaya Oblast'	9,900,000
Do.	Novosibirsk Steel Works (Novosibprokat)	Novosibirskaya Oblast'	1,100,000
Do.	CJSC Omutninsk Metallurgical Plant	Kirovskaya Oblast'	210,000
Do.	Oskol Electric Steel Works (OEMK)	Staryi Oskol	2,500,000
Do.	Petrovsk-Zabaykal'skiy Steel Works	Petrovsk-Zabaykal'skiy	426,000
Do.	Revdinskiy Steel and Wire Production Works	Sverdlovskaya Oblast'	281,000
Do.	Salda Steel Works	do.	1,900
Do.	Serov Steel Works	do.	1,000,000
Do.	Serp i Molot (Moscow Metallurgical Works)	Moskovskaya Oblast'	70,000
Do.	Severskiy Tube Works	Polevskoy, Sverdlovskaya Oblast'	825,000
Do.	OAO Severstal	Vologodskaya Oblast'	14,000,000
Do.	Sibelektrostal Metallurgical Works	Krasnoyarskiy Krai	110,000
Do.	Sulinskiy Steel Works (Staks)	Rostovskaya Oblast'	280,000

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Steel, crude—Continued:	Taganrog Iron and Steel Works (Tagmet)	Rostovskaya Oblast'	925,000
Do.	OAO Tulachermet	Tul'skaya Oblast'	18,400
Do.	Viz-Stal (Verkh-Isetsk Steel Works)	Sverdlovskaya Oblast'	132,000
Do.	Volgograd Steel Works (Red October)	Volgogradskaya Oblast'	2,000,000
Do.	Vyksa Steel Works	Nizhegorodskaya Oblast'	540,000
Do.	Zapadno-Sibirskiy mining and metallurgical complex (ZSMK) (Evraz Group)	Kemerovskaya Oblast'	6,900,000
Do.	Zlatoust Iron and Steel Works	Zlatoust, Chelyabinskaya Oblast'	1,200,000
Talc	Onotsk deposit	Irkutskaya Oblast'	NA
Do.	Kirgiteysk deposit	Krasnoyarskiy Kray	NA
Do.	Miass deposit	Chelyabinskaya Oblast'	NA
Do.	Shabrovsk deposit	Sverdlovskaya Oblast'	NA
Tantalum, ore	Facilities: Zabaykalskiy mining and beneficiation complex NA	Deposits: Etykinskoye deposit Lovozerkoye deposit, Kola Peninsula	10 ²
Tellurium	OJSC MMC Norilsk Nickel	NA	5
Do.	Ural Mining and Metallurgical Co. (UMMC)	Urals	35
Tin:	Novosibirsk mining and beneficiation complexes:	Locations:	
Ore	Khinganskoye olovo (Jewish Autonomous District)	Khabarovskiy Kray	NA
Do.	Dalolovo	Solnechnyy deposit, Primorskiy Kray	NA
Do.	Deputatskiy (Sakhaolovo)	Sakha (Yakutiya) Republic	NA
Do.	Vostokolovo	Russian Far East	NA
Do.	Iultin mining and beneficiation complex	Magadanskaya Oblast'	NA
Do.	Khrustalnyy mining and beneficiation complex	Primorskiy Kray	NA
Do.	Pevek mining and beneficiation complex	Magadanskaya Oblast'	NA
Metal	Novosibirsk smelter	Novosibirskaya Oblast'	NA
Do.	Podol'sk smelter	Podol'sk	NA
Do.	Ryazan smelter	Ryazanskaya Oblast'	NA
Titanium:			
Metal	Moscow plant	Moscow	NA
Do.	Podol'sk plant	Podol'sk	NA
Do.	Verkhnyaya Salda Metallurgical Production Association (VSMPO)-Avisma titanium-magnesium complex	Sverdlovskaya Oblast', Ural Mountains	NA
Sponge	do.	do.	40,000
Tungsten:	Deposits:	Locations:	
W content of concentrates	Aginskoye deposit	Sakha (Yakutiya) Republic	NA
Do.	Antonovogorsk deposit	East Transbaikal, Chita Oblast'	NA
Do.	Balkan deposit	Northeast of Magnitogorsk, Ural'skiye Gory	NA
Do.	Belukha deposit	East Transbaikal, Zabaykal'skiy Kray	NA
Do.	Bom-Grokhom deposit	West Transbaikal	NA
Do.	Dzhida deposit	do.	NA
Do.	Iultin deposit	Magadanskaya Oblast'	NA
Do.	Kti-Teberdaskoye deposit	North Caucasus	NA
Do.	Lermontovo W-Au deposit	Russian Far East	NA
Do.	Primorsky deposit	do.	NA
Do.	Solnechnyy deposit	Southern Khabarovskiy Kray	NA
Do.	Tyrnyauz tungsten-molybdenum mining and processing complex	Kabardino-Balkariya Republic, North Caucasus	NA
Metal, tungsten anhydride	Gidrometallurg plant	Kabardino-Balkariya Republic, North Caucasus	NA

See footnotes at end of table.

TABLE 2—Continued
 RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ²
Uranium, U content	TVEL Corp. enterprises: ZAO Dalur mining enterprise OAO Khiagda mining enterprise Priargunsky mining and chemical enterprise	Locations: Kurganskaya Oblast' Buryatiya Republic Krasnokamensk, Zabayka'skiy Kray	3,500
Vanadium:			
Ore	Kachkanar iron mining complex	Ural'skiye Gory	NA
Metal	Chusovoy and Nizhniy Tagil plants	do.	17,000
Pentoxide	Vanadii-Tulachermet	Tul'skaya Oblast', North Caucasus	NA
Zinc:			
Zn content of copper-zinc ore	Bashkir copper-zinc complex	Sibai, southern Ural Mountains	5,000
Do.	Buribai copper-zinc mining complex	Buribai, southern Ural Mountains	1,500
Do.	Gai copper-zinc mining and beneficiation complex	Gai, southern Ural Mountains	25,000
Do.	Kirovgrad copper enterprise	Kirovgrad, central Ural Mountains	1,200
Do.	Sredneuralsk copper complex	Revda, central Ural Mountains	5,000
Do.	Uchali copper-zinc mining and beneficiation complex	Uchalinskiy Rayon, southern Ural	90,000
Metal	Chelyabinsk electrolytic zinc plant	Chelyabinskaya Oblast'	200,000
Do.	Elektrozink plant [Ural Mining and Metallurgical Co. (UMMC)]	Vladikavkaz, North Caucasus	90,000
Do.	Uralkhrom plant [Ural Mining and Metallurgical Co. (UMMC)]	Verkhnyaya Pyshma	17,000
Zirconium:			
Baddaleyite concentrate	Kovdor iron ore mining and beneficiation complex	Kola Peninsula	3,500
Metal	Chepetsky metallurgical plant (TVEL Corp.)	Glazov, Udmurt Republic	NA

²Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.

¹Many location names have changed since the breakup of the Soviet Union. Many enterprises, however, are still named or commonly referred to based on the former location name, which accounts for discrepancies in the names of enterprises and that of locations.

²Capacity estimates are totals for all enterprises that produce that commodity.