



2015 Minerals Yearbook

RUSSIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF RUSSIA

By Elena Safirova

In 2015, Russia was ranked among the world's leading producers or was a leading regional producer of such mineral commodities as aluminum, antimony, asbestos, barite, bauxite, bismuth, boron, cadmium, cement, coal, cobalt, copper, diamond, diatomite, gallium, gemstones, germanium, gold, graphite, gypsum, indium, iron ore, lead, lime, magnesium compounds and metal, mica, molybdenum, natural gas, nickel, nitrogen, palladium, peat, petroleum, phosphate rock, pig iron, platinum, potash, rare earths, selenium, silicon, silver, steel, sulfur, tellurium, titanium sponge, tungsten, uranium, vanadium, and vermiculite (World Nuclear Association, 2016; Anderson, 2017a–c; Apodaca, 2017a–c; Bedinger, 2017; Bennett, 2017; BP p.l.c., 2017; Bray, 2017a–d; Brininstool, 2017a, b; Corathers, 2017; Crangle, 2017a–c; Fenton, 2017; Flanagan, 2017; Gambogi, 2017; George, 2017; Guberman, 2017a–c; Jasinski, 2017a, b; Jaskula, 2017; Loferski, 2017; McRae, 2017; Olson, 2017a–c; Polyak, 2017a–c; Schnebele, 2017a, b; Shedd, 2017a, b; Tanner, 2017; Thomas, 2017; Tolcin, 2017a, b; Tuck, 2017; van Oss, 2017).

Minerals in the National Economy

In 2015, the real gross domestic product (GDP) of Russia decreased by 3.7% compared with an 0.7% increase in 2014; in 2015, the nominal GDP increased to 80.8 trillion rubles (\$1.27 trillion¹). The exchange rate of the Russian ruble to the U.S. dollar had significantly weakened, however, and the nominal dollar value of the GDP decreased by 3.7%. In 2015, the total value of output from mining and quarrying production at current prices was 11.17 trillion rubles (\$175 billion), or 13.8% of the GDP. The total value of coke and petroleum production was 9.8 trillion rubles (\$154 billion), or 12.2% of the GDP, and the output in metallurgy and finished metals production was 5.39 trillion rubles (\$85 billion), or 6.7% of the GDP. The total value of petrochemical production was 7.04 trillion rubles (\$111 billion), or 8.7% of the GDP, and the total value of output of chemical products was 2.67 trillion rubles (\$41.9 billion), or 3.3% of the GDP (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

During 2015, the output of the mining and quarrying sector increased by 0.3%. The output of mining and quarrying of fuel and energy products remained unchanged, whereas the output of mining and quarrying of nonenergy minerals increased by 0.2%. Among the nonmining industrial sectors, the output of metallurgy and finished metal products decreased by 6.5%; that of coke and petroleum products increased by 0.3%; and that of chemical products increased by 6.3%. The output of other nonmetal mineral products decreased by 7.8% (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

¹Where necessary, values have been converted from Russian rubles (RUB) to U.S. dollars (US\$) at an annual average exchange rate of RUB63.659=US\$1.00 for 2015 and RUB40.118=US\$1.00 for 2014. All values are nominal, at current prices, unless otherwise stated.

Government Policies and Programs

In July 2014, the Ministry of Natural Resources and Environment (Minprirody) significantly simplified the process of obtaining exploration licenses for previously unexplored deposits. Unexplored deposits are the deposits for which there was no information about reserves and for which the forecast resources (which are the equivalent of P1 plus P2 resources in the Soviet-style resource classification and similar to “inferred resources” in U.S. Geological Survey terminology) were not on the Government lists of deposits suggested for exploration. According to the new rules, an applicant for exploration and assessment licenses for solid mineral resources that intends to conduct proposed work using its own funds would only need to fill out an electronic application. The requirement that such areas be included on the lists for prospective exploration also was discontinued. According to the new rules, each applicant cannot apply for more than three lots, and the size of each lot is not to exceed 100 square kilometers (km²). This measure is intended to stimulate creation of junior mining companies in Russia and to increase the amount of exploration. As of October 2015, the agency received 520 applications for exploration within this new framework. The Federal Agency for Use of Subsoil (Rosnedra) expected that the amount of investment in exploration based on those electronic applications would reach 10 billion rubles (about \$157 million) (MinerJob.ru, 2015g).

In 2015, the Government determined that many active exploration and mining licenses had errors and were not up to date. As of June, 7,605 mineral licenses were in place, of which 3,290 licenses were for hydrocarbon resources and 4,315 were for solid minerals. As a result of an audit conducted by the Minprirody, more than one-half of active licenses were found either to have errors, to have had violations of licensing agreements that were impossible to correct, or else the license did not contain clear specific conditions on the intended use of the mineral resources. Minprirody determined that the issues with the mineral licenses began in the early 1990s when the Government issued a large number of licenses in a short period of time, without practical experience in licensing, and when the country lacked a solid legal basis for many aspects of licensing. The conditions specified in such licenses were not uniform and did not take into account many factors, such as those that could delay project development, including lack of infrastructure, seasonality of work, regional economic development issues, and so forth. Minprirody determined that about 5,500 of the 7,605 mineral licenses required some correction.

The process of bulk corrections in active licenses was dubbed “actualization” and was being conducted by Minprirody in coordination with other Government agencies. By the end of the actualization process, the Government would have, for each licensed lot, a set of documents that complies with current laws and regulations and contains a license and other documentation describing the licensed project. The new actualized licenses

would have a standard form, comply with current requirements for project documentation, and be in accord with current systems of accounting for resources and reserves. The process of actualization would include changes to outstanding active licenses and was expected to take no longer than 3 months for each license. The Minprirody outlined three distinct types of actualization. The licenses that largely comply with modern requirements would be actualized in an expedited way. The licenses whose form and content were outdated would be considered individually, and the licensee would be invited to participate in an in-person meeting with a special working group established to deal with those licenses. Finally, licenses for lots that either affect national mineral security or that have violations that could not be corrected were to be considered by a special Government commission. According to the President's Decree, all license actualization was to be completed by the end of 2016. As of July 2015, 324 licenses were actualized, of which 240 licenses covered hydrocarbons. The Government planned to actualize about 1,000 more licenses by the end of 2015, including 560 for hydrocarbons. The Government stated that the actualization of the active licenses would contribute to the transparency and openness of mineral licensing in the country (Kavchik, 2015).

In 2015, the Minprirody introduced a new proposal for the creation of, in effect, a new system of geologic information in Russia. A related bill introducing amendments to the Law on Subsoil was being considered by the Russian Parliament (the Duma) and was adopted in the second and the third reading. The new law would distinguish between primary geologic information (that is, information obtained during the process of the resource use) and interpretive information (that is, information obtained as a result of processing the primary geologic information). For the primary geologic information, its owner would have the right to determine how and by whom the information could be used, including for commercial purposes, for the first 3 years. For the interpretive information, the owner would have the right of nondisclosure for 5 years. After the expiration of those time limits, all geologic information would become public. In order to facilitate the distribution of the information, the Government was to create and maintain a Unified Fund of Mineral Geologic Information. In accordance with the new treatment of geologic information, the legislation defines a notion of an "owner of the geologic information"—that is, a person or organization who has obtained the right to allow or limit use of the information by others. According to this definition, if the geologic information was obtained using funds from the Federal budget, the Russian Federation is considered to be the owner of the geologic information. According to the Minprirody, the new system will eventually create a detailed picture of subsoil in Russia and on its continental shelf (Mineral.ru, 2015s).

In 2015, the Government prepared a series of amendments to the Law on Subsoil. One of the amendments simplified the process of producing alluvial gold by independent entrepreneurs. According to the amendment, licenses for such production would be given to individuals based on their applications, without tenders, auctions, or other complicating mechanisms. Such licenses would be limited to lots containing

small amounts of gold [less than 10 kilograms (kg)]. In addition, such gold producers would not be required to pay fees for the use of the natural resources and would be offered simplified opportunities for selling the gold that they produced (MinerJob.ru, 2015d).

Other amendments to the Law on Subsoil were intended to stimulate exploration and development. For example, an amendment would allow payment of the one-time fee for use of subsoil to be made to the Government by installment so that, at the early stages of development, more funds can be invested in development and reduce the time to commissioning of a mine. To stimulate exploration in the Russia's Far East, it was also proposed that a higher coefficient be used in accounting for exploration expenses for tax purposes. In particular, the exploration expenses in the Far East would be multiplied by a coefficient of 3.5 and subtracted from the company's tax base, whereas for the rest of the country, the coefficient would be equal to 2 (MinerJob.ru, 2015d).

The Minprirody intended to expand the use of operator mining licenses. Such licenses would be issued for a period of 1 year in cases where the previous license had expired or was recalled. The rationale for using the operator licenses was to provide continuity of subsoil use in cases when interruption of subsoil use is undesirable for rational and efficient use and protection of natural resources. Operator licenses, however, were limited to one-time use, and repeat applications were not permitted. Expanding the use of operator licenses also required an amendment to the Law on Subsoil (MinerJob.ru, 2015g).

In May, the Government of Russia approved new rates for rewarding discoveries of new mineral deposits. The amount of the reward would depend on the size of the discovery. For deposits classified as unique, the reward would amount to 9 million rubles (about \$141,000); for the large deposits, 5 million rubles (about \$78,500); and for all other deposits, 500,000 rubles (about \$7,800). The Government stated that the rewards would stimulate geologists to improve the effectiveness of mineral exploration (Mineral.ru, 2015l).

Production

In 2015, Russia's production of mineral commodities was largely stable. Production of crushed salt increased by 94%; tin mine output, by 80%; ferrochromiumsilicon, by 52%; ground salt, by 46%; primary silver, by 30%; and refined lead, by 13.5%. At the same time, production of limestone decreased by 31%; steel produced by plasma arc furnace and by vacuum induction, by 22% and 20%, respectively; boron, by 21%; ferrochromium, by 18%; secondary silver, by 17%; zinc smelter production, by 13%; asbestos and open-hearth steel, by 11.7% each; cobalt metal, by 11.4%; and graphite, by 11%. Production data for these and other mineral commodities are in table 1.

Structure of the Mineral Industry

At the end of 2015, Russia had 18,500 enterprises engaged in mining and quarrying, which was a 3.9% increase compared with the number of enterprises active in mining and quarrying in 2014. Of these enterprises, 6,900 were engaged in extracting fuel minerals and the rest were engaged in mining nonfuel

minerals. Of all the mining and quarrying enterprises, only about 200 were owned by the central and municipal governments, 16,600 were owned by Russian citizens, and about 200 were either owned by foreign companies or jointly owned by domestic and foreign entities. The ownership of the other 1,500 enterprises was not reported. In addition, Russia had 48,300 enterprises engaged in metallurgy, 46,500 of which were owned by Russian citizens. Information on the structure of Russia's mineral industry is in table 2 (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

Mineral Trade

In 2015, the total value of Russian exports of goods was \$341.5 billion, which was a 31.2% decrease compared with the revised value of exports in 2014. The value of Russian imports decreased in 2015 to \$193.0 billion, or by 37.3%. In 2015, Russia had a positive trade balance of \$148.5 billion (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

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 63.8% of the total value of Russian exports, and crude petroleum alone contributed 26.2% to the total value of exports. Petroleum refinery products accounted for another 19.8%; natural gas, 12.3%; and ferrous metals, 4.5%. Among ferrous metals and products made of them, the leading categories were semifinished products made from carbon steel (30.4%) and flat-rolled iron and steel (27.0%). Other products that contributed significantly to Russia's export revenue were bituminous coal (2.8%), aluminum (1.7%), complex mineral fertilizers (0.94%), copper (0.91%), potassium fertilizers (0.87%), nitrogen fertilizers (0.78%), and nickel (0.75%). The major export partners of Russia in 2015 were the Netherlands (which received 11.9% of Russia's exports), China (8.3%), Germany (7.4%), Italy (6.5%), Turkey (5.6%), Belarus (4.5%), Japan (4.2%), Kazakhstan (3.1%), Poland and the United States (2.8% each), and Ukraine (2.7%) (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

In 2015, Russia imported \$4.1 billion worth of products made of ferrous metals (which constituted 2.1% of the total imports) and \$3.3 billion worth of ferrous metals (1.7%). The major imports partners of Russia were China (which supplied 19.1% of Russia's imports), Germany (11.2%), the United States (6.3%), Belarus (4.9%), Italy (4.6%), Japan (3.7%), France (3.2%), Ukraine (3.1%), Kazakhstan (2.6%), Poland and Turkey (2.2% each), and the United Kingdom (2.0%) (Federal'naya Sluzhba Gosudarstvennoy Statistiki, 2016).

Commodity Review

Metals

Beryllium.—In 2015, scientists of Tomsk Polytechnic University entered the second stage of developing a fluoride technology for production of beryllium metal. As a part of the pilot project, they produced 100 grams of beryllium metal in 2014 and 1 kg in 2015. The project was financed by the Ministry of Industry and Trade (Minpromtorg) and was

the first step towards the full-scale industrial production of beryllium metal in Russia. In 2016, the scientists expected to start developing the blueprints of the technological chain, and industrial-scale production was expected to begin in 2020. The State Atomic Energy Corporation (Rosatom) was to select the plants that would conduct new production and was selecting between the Siberian Chemical Complex in the city of Seversk, Tomskaya Oblast', and Priargunskoye Production Mining and Chemical Association (PPGHO) in the city of Krasnokamensk, Zabaykal'skiy Kray. It was likely that the beneficiation plant to produce 5% beryllium concentrate would be located in Krasnokamensk, and the hydrometallurgical plant where beryllium oxide and beryllium metal would be produced would be located in Seversk. The source of the mined beryllium would be the Yermakovskoye beryllium deposit in Buryatiya. The design capacity of the production would be 30 metric tons per year (t/yr) of beryllium metal, and the estimated project cost was \$1.55 billion (Mineral.ru, 2015m; MinerJob.ru, 2015l).

Cobalt.—In December 2015, Kol'skaya GMK, which was a part of OJSC MMC Norilsk Nickel (Normickel), began production of electrolytic cobalt and had the only such production line in Russia. The first pilot production of electrolytic cobalt was set up in 2007 and, in 2009, full-scale production was shown to be economically feasible. Building of a full-scale production facility began in 2011, and all construction work was done without interruptions of the existing production processes in the company. The total cost of the project was about 2 billion rubles (about \$50 million), and the investment was expected to pay off quickly because of the difference in value between cobalt metal and cobalt concentrate, and also because the construction of a new line reduced costs of other mineral commodities produced at the plant (Metalinfo.ru, 2015; MinerJob.ru, 2015f).

Manganese.—In 2015, Russia did not produce either mined manganese or manganese metal. For the past several years, ZAO Chek-SU.VK, which was based in the city of Kemerovo, planned to develop a manganese mining and metallurgical complex (GMK). The complex would include a mining complex (GOK) in the Kemerovo region that would process ores mined from the Usinskoye manganese deposit. The GOK was to process 1.4 million metric tons per year (Mt/yr) of ore and produce 760,000 t/yr of manganese concentrate. Then manganese concentrate would be shipped to the city of Krasnoyarsk, where Chek-SU.VK planned to build the Eniseyskiy ferroalloys plant (EFZ). According to the original plan, the first stage of the EFZ construction was to be completed in 2014; at that time, EFZ would have had the capacity to produce 250,000 t/yr of ferroalloys; the second stage, which was to be completed in 2017, would increase EFZ's production capacity to 630,000 t/yr. The residents of Krasnoyarsk, however, were opposed to the construction of the plant because they were convinced that the construction of a ferroalloys plant would negatively affect water and air quality in the city, which already had many other industrial plants. The local and regional governments supported local residents, and the future of the project was to be decided by the courts. At the end of 2014, the Supreme Court of Russian Federation took the side of the local community and rejected the plan to build the EFZ plant

in Krasnoyarsk. In May 2015, Chek-SU.VK announced that it would build a plant for the production of electrolytic manganese in the settlement of Tuim in Khakassia. Electrolytic manganese has a purity of 99.8% and is used for production of special kinds of steel and alloys. The plant would have the capacity to produce 80,000 t/yr of manganese metal, and the output would be sold mainly on the domestic market. As of 2015, Russia's demand for manganese metal was about 60,000 t/yr. Unlike in Krasnoyarsk, Chek-SU.VK did not expect serious objections based on environmental concerns in Tuim because the company planned to use modern Chinese technology that has minimal environmental impact; also Tuim had an old nonferrous metals plant that used to produce rolled copper but that had recently been closed, leaving the plant's workers unemployed (Mineral.ru, 2015e).

The total cost of the project was estimated to be 40 billion rubles (about \$630 million). The financing of the project would be provided by the Export-Import Bank of China in association with VneshEkonombank (VEB) of Russia. The company stated the plant would be constructed by Sinosteel of China on an EPCM (engineering, procurement, and construction management) basis and that it was expected to be commissioned within 45 months after the financing was received. According to Chek-SU.VK, the plant in Tuim would have 1,200 employees, another 800 people would be employed in service areas related to the plant, and the plant's annual tax payments would amount to 1.5 billion rubles (about \$24 million) (Infogeo.ru, 2015; Mineral.ru, 2015e).

The change of production plans from EFZ to manganese metal production in Khakassia also altered production plans at the manganese mining site. The manganese mined at the Usinskoye Mine would be beneficiated at the processing plant next to the mine. The mine would be an open pit operation and the design capacity would be 800,000 t/yr of ore (it was scaled back because of the cancellation of the EFZ project). As of November 2015, Chek-SU.VK had obtained permits for construction of the mine and the processing plant. The cost of the mine was expected to total 40 billion rubles (about \$630 million), of which 11 billion (about \$173 million) was to be spent on construction of a highway to the Usinskoye deposit (Infogeo.ru, 2015; MinerJob.ru, 2015q).

The Usinskoye deposit is located far away from population centers; however, the regional population was concerned that the mining project would contaminate the Usa River, and possibly the Tom' River, with heavy metals. A part of the Usinskoye deposit is located immediately under the bed of the Usa River. In June, the Governor of Kemerovskaya Oblast' sent a letter to Rosnedra asking that Chek-SU.VK's mining license be annulled. The Governor's arguments were that the company had had the license since 2005, had not demonstrated that the project was environmentally sound, and had not started development. At yearend, it was not clear if the mining project would encounter delays because of its potential environmental impact (19rus.info, 2015; MinerJob.ru, 2015o).

Nickel.—In 2015, Russia mined an estimated 269,000 metric tons (t) of nickel in concentrates, which was a 5.0% decrease from the level in 2014. Nornickel was the country's leading nickel producer and the world's leading nickel mining company.

The other significant nickel producer in Russia was OAO Ufaleynickel. OAO Yuzhuralnickel stopped operations in 2012 (Mineral-Info, 2016).

Nornickel's operations in Russia were located on the Kola Peninsula in northwestern Russia and in the Norilsk region on the Taymyr Peninsula in eastern Siberia. In addition to nickel, Nornickel was a significant world producer of platinum and copper, and the leading world producer of palladium. Nornickel also owned assets in Australia, Botswana, Finland, and South Africa, but, according to the company strategy, it planned to sell all its assets abroad, except the Harjavalta nickel refinery in Finland, by 2016. In 2014, Nornickel sold its Black Swan and Silver Swan operations in Australia and a significant part of Tati Nickel in Botswana and Nkomati in South Africa (MinerJob.ru, 2015h).

In 2015, Nornickel continued its focus on "first-class assets" and the disposal of noncore, foreign, and inherited assets. The primary goal for the company was the development of the Talnakh ore node, whose value was estimated to be \$900 billion. In January, Nornickel commissioned the first of the three complexes of the modernized Talnakh beneficiation plant. The Talnakh plant was first commissioned in 1961 and, at that time, it had a design capacity of 1.25 Mt/yr of ore. In 2001, the design capacity was increased to 7 Mt/yr of ore. In 2013, the company made the decision to carry out a complete modernization of the plant. The modernization was expected to be completed in 2016 and, at that time, the plant capacity would be increased to 10 Mt/yr of ore. In addition, the new plant equipment would reduce unit production costs, increase output quality, and reduce sulfur emissions. The modernization of the Talnakh plant would allow the closing of the obsolete nickel plant that had been constructed in the 1940s (MinerJob.ru, 2015h).

In November, the Polar Division commissioned a complex of underground installations at the Scalistaya Shaft of the Komsomol'skiy Mine, which would increase the shaft's capacity by 500,000 t/yr of high-grade ores. The Skalistaya shaft was opened and produced rich ores from the Oktyabr'skoye and the Talnakh deposits. The installations included ventilation equipment; during construction, a total of 196,000 cubic meters of waste material was extracted. Construction started in 2011, and the total costs were expected to amount to 4 billion rubles (about \$100 million) (Mineral.ru, 2015h, k; MinerJob.ru, 2016).

In 2015, Nornickel invested a total of \$1.7 billion, which was a 27% increase compared with that of 2014. In addition to the Talnakh beneficiation plant and the Komsomol'skiy Mine, Nornickel's projects included modernization of the Nadezhdinskiy metallurgical plant and increasing the refining capacity of the Kol'skaya GMK. In 2015, the company spent \$257 million on the Talnakh plant, \$256 million on the Skalistaya Shaft, and \$61 million on closing the nickel plant. In 2016, the company planned to increase capital investment by 45% to 145 billion rubles (about \$2.3 billion). One of the priority projects would be the development of the Bystrinskiy GOK in Zabaykal'skiy Kray, with the participation of Chinese investors (MinerJob.ru, 2015i, k).

In May 2015, ZAO Kun-Manye, which was a subsidiary of Amur Minerals of the United Kingdom, obtained a license for the Kun-Manye deposit in Amurskaya Oblast' for exploration

and production of gold, cobalt, copper, nickel, palladium, platinum, silver, and sulfur. The license for an area of 36 km² would be valid until 2034. Earlier, ZAO Kun-Manye had indicated that it intended to invest 60 million rubles (about \$1.5 million) in development of the deposit. The Joint Ore Reserves Committee (JORC)-compliant resources of the deposit as of April 2015 were 121 million metric tons (Mt) of mineralized material with average nickel content of 0.54%; copper, 0.15%; platinum, 0.1 gram per metric ton (g/t); and palladium, 0.1 g/t. ZAO Kun-Manye expected to mine about 6 Mt/yr of ore for 15 years. The company planned to use an open pit mining method at the Kubuk section, to process the ore using a flotation method, and to produce 350,000 t/yr of marketable nickel-copper concentrate. The concentrate would be shipped 320 kilometers (km) over the Baykalo-Amurskaya Magistral' (BAM) railway for further processing. The energy requirement for the operations was estimated to be 40 megawatts, and the energy would be supplied by diesel-run mobile powerplants. Later the company would use both open pit and underground mining at the deposit. Previously, between 2004 and 2014, ZAO Kun-Manye had held an exploration license for the deposit and had explored four sections of the deposit—the Shlyapa, the Small Kurumkan, the Sobolevskaya, and the Triangle sections (Mineral.ru, 2015a, f, r).

In May 2015, the nickel producer OAO Ufaleynickel changed owners. Because of the significant accumulated debt, the company became the property of its largest creditor, OAO Binbank. The previous owner, Highmetals KDS, had owned Ufaleynickel since 2011. From 2011 to 2015, the company's debt increased from 500 million rubles to 9 billion rubles (from \$13 million to \$141 million). Since 2011 [with the exception of 2013, when the plant had a profit of 6 billion rubles (about \$158 million)], Ufaleynickel operated at a loss, and the amount of its debt continued to increase. Ufaleynickel was the second-ranked nickel producer in Russia, with an annual production capacity of 15,000 t/yr of nickel. Ufaleynickel was the major employer in the town of Verkhniy Ufaley in Chelyabinskaya Oblast'. The new owner also bought shares of ZAO Rezhnickel and the Serovskiy Mine, both of which were part of Ufaleynickel's production chain. In the beginning of May 2015, OOO Rusnickel became the managing company of Ufaleynickel. In the first 9 months of 2015, the company's revenue increased by 17% compared with the first 9 months of 2014, but the losses increased by 28%, to 1.02 billion rubles (about \$16 million). At yearend, it was not clear if Ufaleynickel would be able to improve its financial situation (Kommersant.ru, 2015; MinerJob.ru, 2015c, j; Sharoglazova, 2015).

Industrial Minerals

Potash.—As of 2015, Uralkali was the only potash producer in Russia. In 2015, Uralkali produced about 6.95 Mt of potash (K₂O equivalent), which was a 6.5% decrease compared with 2014 production. By 2020, Uralkali planned to increase its potash production capacity to 14.4 Mt/yr of potassium chloride (about 8.8 Mt/yr of K₂O equivalent). In 2016, the company planned to begin to expand its capacity to produce granulated potash, which was considered a “premium product” and

commanded prices of about \$15 per metric ton higher than regular potash. As of 2015, granular potash accounted for about 30% of all Uralkali's output, but the company wanted to increase its share to about 50% by 2019 (Mineral.ru, 2015o, p, q).

In 2015, Uralkali continued with preparation for construction of a two-shaft mine at the Ust-Yayviskoye potash deposit. The construction of the shafts started in 2012, and the company planned to begin mining in 2020; the total cost of construction was estimated to be \$1.2 billion. The ore mined at Ust-Yayvinskaya would be transported using a 6.3-km-long conveyor to the processing plant at Berezniki-3. The new mine would be able to replace 2 Mt/yr of material from the Berezniki-2 Mine, which was being depleted, and increase the capacity of the Berezniki-3 Mine by 0.5 Mt/yr. In 2015, the company was constructing energy infrastructure for the project at a total cost of 1.9 billion rubles (about \$30 million). The energy system was planned to be completed in 2017 (Mineral.ru, 2015n).

In November 2014, Uralkali reported that there had been an influx of brine to the shaft of the Solikamsk-2 Mine and that some of the pumps were flooded. In the aftermath of the accident, all personnel were taken to the surface and production at the affected mine was stopped. Simultaneously with the flood, a 30-by-40-meter (m) sinkhole formed within 3.5 km of the flood site. By February 2015, the sinkhole had increased in size to 58 by 87 m across and was 75 m deep. This was the fifth sinkhole at the mine. The financial director of Uralkali estimated potential losses from decommissioning of the Solikamsk-2 Mine to be \$1 billion. The company worked on strengthening the barrier between the Solikamsk-2 Mine and the Solikamsk-1 Mine, but it was not clear if flooding of the Solikamsk-1 Mine could be prevented (Mineral.ru, 2015p; MinerJob.ru, 2015e, p).

EuroChem Group AG, which was one of the leading fertilizer producers in Russia, was in the process of constructing two potash mines. The first project was the Volgakali Mine at the Gremyachinskoye potash deposit in Volgogradskaya Oblast', and the second one was the Usol'skiy Potash Complex at the Verhnekamskoye deposit in Permskiy Kray. The design capacity of the Volgakali Mine would be 4.6 Mt/yr of potassium chloride and the design capacity of the Usol'skoye Complex would be 3.7 Mt/yr of potassium chloride. The company planned to reach the design capacity by 2022 or 2023 (Mineral.ru, 2015b, c; MinerJob.ru, 2015b).

The two EuroChem projects were being developed by a company that had no previous experience in potash mining. The company obtained the right to develop the Gremyachinskoye deposit in 2005. Then, in 2008, the Kovdorskiy GOK, which was a subsidiary of EuroChem, won an auction for development of the Balakhontsevskiy and the Palasherskiy sections of the Verhnekamskoye deposit. In 2011, EuroChem formed a holding company named Usol'skiy Potash Complex. The total resources of the two sections were 1.55 billion metric tons of sylvinit and 499 Mt of carnallite. Since the inception of these potash projects, EuroChem had invested about \$6 billion (about \$3 billion for each project) and was expecting to spend about \$2 billion more until both plants are commissioned. The first production on both projects was planned to begin in 2017, and the first sales were expected to take place in 2019 (Mineral.ru, 2015b, c; MinerJob.ru, 2015b).

In 2015, ZAO Verhnekamskaya Potash Co. (VKK), which was a part of the Akron Group, was developing a mine at the Talitskiy sector of the Verhnekamskoye magnesium and potassium salt deposit. In August, the company received Government approval of the company's blueprints for constructing the mine. The design capacity of the mine would be 7.45 Mt/yr of sylvinitic ore, which would correspond to 2.0 Mt/yr of potassium chloride. The project design allowed for later expansion of the mine to 10 Mt/yr of sylvinitic, or 2.6 Mt/yr of potassium chloride. The original estimate of the project cost was \$2 billion but, in May 2015, the cost was revised down to between \$1.5 billion and \$1.7 billion. No information was available about when the Talitskiy GOK would be commissioned (Mineral.ru, 2015d, i).

Mineral Fuels and Related Materials

Uranium and Scandium.—In 2015, About two-thirds of all uranium mined in Russia was extracted from seven mines in Zabaykal'skiy Kray—Antey, Luchistoye, Malo-Tulukuevskoye, Martovskoye, Oktyabr'skoye, Strel'tsovskoye, and Yubileynoye. All ores extracted from these mines were subjected to initial enrichment and hydrometallurgical processing at the Priargunskoye mining and chemical complex (PPGHO) in the city of Krasnokamensk. The other large-scale producers included ZAO Dalur, which was using underground leaching to mine for uranium at the Dalmatovskoye and Khokhlovskoye deposits in Kurganskaya Oblast', and OAO Khiagda, which was also using underground leaching to mine for uranium at the Khiagdinskoye deposit in Buryatiya Republic. The production solution obtained by Dalur and Khiagda was processed into uranium concentrate at the mining sites. The companies mining uranium in Russia were united under OAO Atomredmetzoloto (ARMZ). In 2015, PPGHO produced 1,977 t of uranium; ZAO Dalur, 590 t; and AO Khiagda, 488 t. In 2016, ARMZ expected to keep its overall production level unchanged at about 3,000 t of uranium (ARMZ, 2017).

In January 2015, PPGHO reopened its Mine #2, where production had been suspended in April 2014. From 2011 to 2013, losses at PPGHO had increased fivefold, from 688 million to 3.4 billion rubles (from about \$20 million to about \$90 million) because of a decrease in world prices of uranium. To stabilize the situation, the company had eliminated 1,500 positions and Mine #2 was placed on care and maintenance. In 2014, PPGHO was able to decrease the unit cost of uranium production by 7% and expected to break even by as soon as in 2016 (Mineral.ru, 2015j).

In 2014, ARMZ spent 19 billion rubles (about \$474 million) on development activities at AO Khiagda and expected the company to continue to increase production. Khiagda had produced 442 t of uranium in 2014 and increased production to 488 t in 2015. Khiagda expected to reach its design capacity of 1,000 t/yr of uranium by 2018. In particular, two new uranium deposits, the Istochnoye and the Vershinnoye deposits, were expected to enter the mining stage in 2016 and 2017, respectively. According to preliminary estimates, the Istochnoye contained 2,055 t of uranium and the Vershinnoye had measured resources (uranium content) of 4,577 t. In 2015, the company

continued drilling technological wells to conduct production using underground leaching in permafrost conditions. In 2015, the company drilled 266 wells and planned to produce about 560 t/yr of uranium in future years (Mineral.ru, 2015g, k; MinerJob.ru, 2015a, m).

In August, Rosatom made the decision to finance joint production of scandium co-production at Dalur's uranium mines. Dalur's research has demonstrated that extraction of scandium in Kurganskaya Oblast' would be feasible, both technologically and economically. A pilot production of scandium extraction was planned to begin in 2016. Estimates showed that scandium production at Dalur could be as high as 1,500 kilograms per year. The scandium concentrate would be used by AO TVEL, another Rosatom unit, for use in the nuclear industry (MinerJob.ru, 2015n).

Outlook

Russia has large reserves of a variety of mineral commodities and most likely will continue to be one of the world's leading mineral producers. In 2015, the country's mineral sector demonstrated several interesting trends. First, the Government tried to streamline and simplify licensing for both mineral exploration and extraction and to stimulate exploration and production. Second, the emphasis on exploration and national self-sufficiency was strengthened by the Western sanctions imposed on selected enterprises and individuals. Finally, the Russian mineral industry began a new trend of strengthening partnerships with its Eastern neighbors, such as those of the Asia and the Pacific Rim region, at the expense of countries in other regions, such as the European Union and Australia.

In the short-to-medium term, Russia is likely to be affected by the effects of reduced petroleum prices, the decreased value of the ruble against other currencies, and economic sanctions. It is likely that some of the most ambitious mineral industry projects will be either canceled or delayed until better economic conditions prevail in the country, whereas other projects that are considered to be important to national security, such as those for production of beryllium, scandium, and uranium, will become more prominent. It remains to be seen, however, how this new economic reality is likely to affect the structure and resilience of Russia's mineral industry.

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TABLE 1
RUSSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
METALS						
Aluminum:						
Ore and concentrate:						
Alumina	thousand metric tons	2,825	2,719	2,659	2,570	2,550
Bauxite	do.	5,943	5,700	5,617	6,060 ^r	6,000
Nepheline ores	do.	43,450	40,910	33,930	28,990	28,900
Metal, smelter, primary	do.	3,992	4,024	3,601	3,300	3,490
Antimony, mine output, recoverable Sb content ^c		6,348 ³	7,300	8,700	8,000 ^r	8,000
Bismuth: ^c						
Mine output, Bi content		50	40	40	40	NA
Metal, refined		4 ^r	4 ^r	4 ^r	4 ^r	4
Cadmium, metal, smelter ^c		800 ³	850 ³	850	1,000 ^r	1,100
Chromium, chrome ore, marketable ^c		662,000	552,000 ³	360,000 ³	380,000 ^r	380,000
Cobalt:						
Mine output, recoverable Co content ^c		6,100	6,300	6,350	6,300	6,100
Metal, refined		2,337	2,186	2,368	2,302 ^r	2,040
Copper:						
Ore, recoverable Cu content		856,200	841,800	870,100	887,000 ^r	890,000
Metal:						
Blister, smelter: ^c						
Primary		596,490 ³	621,200 ³	625,000	643,000 ^r	641,000
Secondary		242,640 ³	253,800 ³	255,000	227,000 ^r	226,000
Total		839,130 ³	875,000 ³	880,000	870,000 ^r	867,000
Refined:						
Primary		663,200	665,000	657,600	665,000 ^r	663,000
Secondary		220,400	222,400	220,000	224,300 ^r	224,200
Total		883,600	887,400	877,600	889,300 ^r	887,200
Gallium ^c		11	10	10	10	10
Germanium ^c		5	5	5	6	6
Gold:						
Mine output, Au content	kilograms	199,650	217,800	231,700	246,900	251,210
Secondary recovery	do.	9,334	8,500	17,764	35,800	38,260
Indium ^c		13	13	33	43	40
Iron and steel:						
Iron ore:						
Concentrate		103,607,300	104,010,000	102,156,500	102,018,500	101,000,000
Fe content, 55% to 63% ^c		61,100,000	61,400,000	60,300,000	60,200,000	59,600,000
Pellets, oxidized		38,400,000	39,000,000	39,400,000	39,700,000	40,900,000
Metal:						
Pig iron		47,996,000	50,459,000	49,945,000	51,371,800	52,500,000
Direct-reduced iron ^e		5,200,000 ^r	5,240,000 ^r	5,330,000 ^r	5,350,000 ^r	5,440,000
Ferroalloys: ^c						
Blast furnace:						
Ferromanganese ³		148,100	160,800	181,400	178,600	161,500
Ferrophosphorus		3,600	3,600	3,500	3,500	3,500
Spiegeleisen		6,000	6,000	5,500	5,400	5,500
Electric arc furnace:						
Ferrochromium ³		565,900	546,360	487,810	439,600	358,800
Ferrochromiumsilicon ³		49,740	57,450	58,130	67,160	102,000
Ferronickel, gross weight: ⁴						
High-nickel ³		16,899 ^r	9,782 ^r	-- ^r	-- ^r	--
Other ³		5,360 ^r	3,110 ^r	-- ^r	-- ^r	--
Ferroniobium (ferrocolumbium)		700	700	600	600	600
Ferrosilicon ³		1,026,170	1,036,930	1,012,740	1,026,190	1,059,070
Ferrotitanium		7,000	7,500 ³	5,500	4,000	4,000

See footnotes at end of table.

TABLE 1—Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
METALS—Continued						
Iron and steel—Continued:						
Metal—Continued:						
Ferroalloys—Continued: ^e						
Electric arc furnace—Continued:						
Ferrovandium	7,590 ³	8,280 ³	10,510 ³	11,380 ³	12,000	
Silicomanganese	149,850 ³	164,350 ³	169,190 ³	179,910 ³	192,600 ³	
Silicon metal	52,000	52,000	50,000	50,000	50,000	
Other	8,000 ^r	9,000 ^{r,3}	8,500	6,000	6,500	
Total, ferroalloys	2,050,000 ^r	2,070,000 ^r	1,990,000 ^r	1,970,000 ^r	1,960,000	
Steel:						
Crude:						
Open hearth furnace	thousand metric tons	3,975	3,839	2,545	1,903	1,680
Converter furnace	do.	43,099	45,764	46,020	46,673	47,194
Electric furnace	do.	20,488	19,964	19,510	21,167	19,920
Vacuum induction furnace	do.	6	5	5	6	4
Plasma arc furnace	do.	546	820	781	799	623
Total	do.	68,114	70,392	68,861 ^r	70,548 ^r	69,421
Finished, rolled	do.	56,492	60,036	59,161	65,200	60,420
Pipe	do.	9,979	9,723	10,082	11,300	11,400
Lead: ^e						
Mine output, recoverable Pb content		94,500	195,600 ³	223,300 ³	239,000 ^{r,3}	250,000
Metal, refined, primary and secondary		115,000	110,000 ³	95,400 ³	96,500 ^{r,3}	109,530 ³
Magnesium:						
Magnesite ^e	thousand metric tons	1,200	1,300	1,300	1,300	1,300
Metal, including secondary ⁵		58,000 ^r	65,000 ^r	66,000 ^r	62,000 ^r	60,000
Manganese ore, marketable: ^e						
Gross weight		30,000	22,000 ³	20,000	--	--
Mn content		4,500	3,256 ³	3,000	--	--
Molybdenum, in concentrate		6,014	4,939	4,753	3,114 ^r	3,000 ^e
Nickel:						
Marketable mine production, Ni content: ^e						
Laterite ore		41,777 ^{3,r}	26,620 ^{3,r}	10,400 ^r	11,200 ^r	--
Sulfide concentrate ³		281,690 ^r	270,030 ^r	270,700 ^r	271,950	269,310
Total		323,467 ^r	296,650 ^r	281,000	283,000	269,000
Matte		65	1 ^e	--	--	--
Nickel products: ^e						
Metal		264,900 ³	255,000 ³	241,800 ³	231,000 ^r	223,000
Chemicals		2,900	2,700 ^r	2,700 ^r	2,700	2,900
Total		268,000 ^r	258,000 ^r	245,000 ^r	234,000	226,000
Platinum-group metals:						
Platinum	kilograms	27,300	26,500	25,200	24,300 ^{r,3}	23,800
Palladium	do.	84,100	81,700	80,200	82,700 ³	81,900
Other	do.	4,700 ^r	4,700 ^r	4,600 ^r	4,600 ^{r,3}	4,600
Total	do.	116,100 ^r	112,900 ^r	110,000 ^r	111,600 ^{r,3}	110,300
Selenium	do.	100,000	114,620	114,160	130,810	140,000 ^e
Silicon ^e	thousand metric tons	1,031 ³	1,043 ³	1,100	1,100	1,100
Silver:						
Mine output, Ag content	kilograms	2,004,000	2,255,000	2,175,600	2,357,000 ^r	2,400,000 ^e
Metal:						
Primary	do.	1,503,700	1,360,000	1,050,000	798,110	1,042,400
Secondary	do.	39,300	40,000	150,000 ^e	249,280 ^r	207,520
Total	do.	1,543,000	1,400,000	1,200,000	1,047,390	1,250,000
Tellurium	do.	30,000	30,390	31,030	32,540	35,000 ^e

See footnotes at end of table.

TABLE 1—Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
METALS—Continued						
Tin:						
Mine output, recoverable Sn content	75	249	156	321 ^r	578	
Metal, smelter: ^c						
Primary	526 ³	650	--	--	--	
Secondary	200	250	--	--	--	
Total ⁶	730 ^r	900	--	--	--	
Titanium sponge	38,000 ^r	45,000 ^r	46,000	42,000 ^r	41,000	
Tungsten, concentrate, W content	3,314	3,025	2,973	2,659 ^r	2,600 ^e	
Vanadium, metal ^c	12,860 ³	14,856 ³	15,000	15,000	14,000	
Zinc:						
Mine output, recoverable Zn content	176,300	179,800	248,300	273,100 ^r	250,400	
Metal, smelter, primary and secondary	255,600	250,000	216,000	223,311	194,500	
Zirconium, baddeleyite concentrate, averaging 98% ZrO ₂	8,914	7,969	8,504	7,930 ^r	8,000 ^e	
INDUSTRIAL MINERALS						
Asbestos	1,031,880	1,035,975 ^r	810,352 ^r	733,067 ^r	647,690	
Barite ^c	67,000 ^r	180,000 ^r	180,000 ^r	220,000 ^r	210,000	
Boron ^c	200,000	250,000	76,199 ³	81,234 ³	64,000 ³	
Cement, hydraulic	56,200,000	61,700,000	66,503,000	69,139,000 ^r	62,103,500	
Clays:						
Bentonite ^c	500,000 ³	550,000 ³	550,000	560,000	580,000	
Kaolin	328,000 ^r	284,000 ^r	674,000 ^r	787,000 ^r	786,000	
Diamond: ^c						
Gem	thousand carats	20,140 ³	19,900	20,000	19,200	20,200
Industrial	do.	15,000	15,000	16,000	17,100	18,100
Total	do.	35,000	35,000	36,000	36,200	38,300
Diatomite	33,000	70,000	70,000	72,000 ^e	75,000 ^e	
Feldspar ^c	400,000	400,000	390,000	400,000	390,000	
Fluorspar, concentrate, 55% to 96.4% CaF ₂	119,800	129,000	30,000 ^e	--	--	
Graphite	15,000	14,000	15,000	17,640 ^r	15,700	
Gypsum ⁷	thousand metric tons	3,907	4,179	4,223	4,419 ^r	4,223
Iodine ^c	210,000	100,000	--	--	--	
Lime:						
Construction use	thousand metric tons	1,963	2,282	2,321	2,941	2,986
Industrial use	do.	8,388	8,664	8,581	8,642	8,235
Total	do.	10,351 ^r	10,946 ^r	10,902 ^r	11,583 ^r	11,221
Limestone	50,000,000 ^{r,e}	50,000,000 ^r	56,700,000	58,707,400	40,400,000	
Mica ^c	100,000	100,000	50,000	10,000	--	
Nitrogen, N content of ammonia	thousand metric tons	11,473 ^r	11,401 ^r	11,879 ^r	12,030 ^r	12,485
Phosphate rock: ^c						
Gross weight	do.	11,000	12,500	12,500	13,200 ^r	13,300
P ₂ O ₅ content	do.	4,000	4,500	4,500	4,758 ^{r,3}	4,800
Potash, marketable, K ₂ O equivalent	do.	6,498	5,563	6,100	7,439	6,954
Rare earths, total rare-earth oxides	do.	1,444 ^r	2,131 ^r	1,443 ^r	2,134 ^r	2,000 ^e
Salt, all types:						
Crushed	thousand metric tons	31	65	79	31	60
Ground	do.	493	562	474	495	723
Total	do.	524 ^r	627 ^r	553 ^r	526 ^r	783
Soda ash	do.	2,822	2,807	2,477	3,052	3,078
Soda, caustic	do.	1,049	1,093	1,056	1,076	1,115

See footnotes at end of table.

TABLE 1—Continued
RUSSIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
INDUSTRIAL MINERALS—Continued						
Sulfur: ^c						
Native	68,600 ³	68,900 ³	123,000 ³	119,000 ^r	110,000	
Pyrites	200,000	200,000	200,000	180,000	180,000	
Byproduct:						
From metallurgy	200,000	300,000	300,000	200,000	200,000	
From natural gas	6,488,000 ³	6,416,000 ³	5,977,000 ³	5,859,000 ³	5,961,000 ³	
From petroleum	600,000	700,000	700,000	500,000	500,000	
Total, sulfur	7,560,000	7,680,000	7,300,000	6,860,000	6,950,000	
Sulfuric acid ³	10,700	11,036	10,298	10,176 ^r	10,381	
Vermiculite	21,000	21,800	20,931	21,000 ^e	21,000 ^e	
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous, including	thousand metric tons	259,000	279,000	279,000	288,000	298,000
Anthracite	do.	10,000	11,400	12,800	13,500	13,500
Coking	do.	65,400	72,700	74,400	76,300	82,900
Lignite	do.	76,900	78,100	73,700	68,900	73,600
Coke, metallurgical, 6% moisture content	do.	26,800	26,900	25,900	26,500	26,000
Natural gas, marketed	million cubic meters	671,000	655,000	668,000	643,000	633,500
Peat, horticultural and fuel uses ^c		1,337,000 ³	1,200,000	1,500,000	1,100,000 ^r	1,000,000
Petroleum:						
Crude:						
In gravimetric units	thousand metric tons	512,000	519,000	522,000	526,600 ^r	534,081
In volumetric units	thousand 42-gallon barrels	3,578,000	3,615,000	3,636,000	3,668,000 ^r	3,720,000
Refinery products:						
In gravimetric units	thousand metric tons	258,000	272,000	281,000	295,000	287,200
In volumetric units	thousand 42-gallon barrels	2,080,600	2,185,500	2,258,000	2,371,000	2,308,000
Uranium, mine output:						
U content		2,993	2,862	3,135	2,991	3,055
U ₃ O ₈ content		3,502	3,348	3,668	3,500	3,574

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

¹Table includes data available through March 1, 2017.

²In addition to the commodities listed, Russia produced a number of other mineral commodities, including arsenic, lithium, mercury, niobium, oil shale, rhenium, scandium, synthetic diamond, talc, tantalum, titanium ore, and vanadium ore, but available information was inadequate to make reliable estimates of output.

³Reported figure.

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

⁵Includes metal used in titanium production.

⁶Rounded to no more than two significant digits.

⁷Excludes gypsum used in cement production.

TABLE 2
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c	
Alumina	thousand metric tons	Achinsk (United Company RUSAL)	Achinsk in East Siberia	900
Do.	do.	Bogoslovsk (United Company RUSAL)	Krasnotur'insk	1,050
Do.	do.	Boksitogorsk (United Company RUSAL)	Leningradskaya Oblast'	200
Do.	do.	Pikalyovo (United Company RUSAL)	Pikalyovo	300
Do.	do.	Uralsk (United Company RUSAL)	Kamensk-Uralskiy	700
Aluminum, primary smelters	do.	Bogoslovskiy AZ (United Company RUSAL)	Krasnotur'insk	175
Do.	do.	Bratskiy AZ (United Company RUSAL)	Bratsk	1,000
Do.	do.	Irkutskiy AZ (United Company RUSAL)	Irkutskaya Oblast'	420
Do.	do.	Kandalakskiy AZ (United Company RUSAL)	Kola Peninsula	75
Do.	do.	Khakasskiy AZ (United Company RUSAL)	Khakasiya	300
Do.	do.	Krasnoyarskiy AZ (United Company RUSAL)	Krasnoyarskiy Krai	1,000
Do.	do.	Nadvoitskiy AZ (United Company RUSAL)	Nadvoitsy, Kareliya Republic	75
Do.	do.	Novokuznetskiy AZ (United Company RUSAL)	Novokuznetsk	300
Do.	do.	Sayanogorskiy AZ (United Company RUSAL)	Sayanogorsk	550
Do.	do.	Uralskiy AZ (United Company RUSAL)	Kamensk-Uralskiy	150
Do.	do.	Volgogradskiy AZ (United Company RUSAL)	Volgogradskaya Oblast'	175
Do.	do.	Volkhovskiy AZ (United Company RUSAL)	Volkhov, east of St. Petersburg	20
Amber		Kaliningrad Amber enterprise (Kaliningrad regional authorities and Alrosa Co. Ltd.)	Kaliningrad Oblast'	250
Antimony:				
Concentrate, Sb content	GeoProMining, Ltd. (GPM)	Sarylakh deposit, Ust'-Nera region, Sakha Republic (Yakutiya)	8,000 ²	
Do.	do.	Sentachan deposit, Northeastern Sakha Republic (Yakutiya)	NA	
Do.	Zabaykal'skiy GOK (ZabGOK) (OOO NefteChimMash)	Zabaykal'skiy Krai	360,000	
Compounds and metals	Ryazsvetmet plant	Ryazanskaya Oblast'	NA	
Asbestos	Bazenovskoye chrysotile deposit	Sverdlovskaya Oblast'	NA	
Do.	Molodeznoye deposit	Zabaykal'skiy Krai	NA	
Do.	"Orenburg Minerals" Co., Kiembraevskoye chrysotile deposit	Orenburgskaya Oblast'	500,000	
Do.	"Tuvaasbest" plant, Ak-Dovurakskoye chrysotile deposit	Tuva Republic	250,000	
Do.	"Uralasbest" mining and clarification plant	Central Urals	1,100,000	
Barite	Salarinskiy mining and beneficiation complex	Kvartsitovaya Sopka deposit	100,000	
Bauxite	OAO Sevuralboksitruda (United Company RUSAL)	Severoural'sk region	NA	
Do.	South-Urals mining company (United Company RUSAL)	South Urals	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 Krai	140,000	
Do.	Amur River complex	Russian Far East	8,000	
Do.	Alga River chemical complex	do.	12,000	
Chromite	Saranov complex	Saranovskiy	200,000	
Coal	thousand metric tons	Donetskiy (east) basin	Rostovskaya Oblast'	30,000
Do.		Irkutskiy basin	Irkutskaya Oblast'	NA
Do.	thousand metric tons	Kansko-Achinskiy basin	Eastern Siberia	50,000
Do.	do.	Kuznetskiy basin (Kuzbass)	Western Siberia	160,000
Do.		Lenskiy basin	Sakha Republic (Yakutiya)	NA
Do.		Minusinskiy field	Khakasiya Republic	NA
Do.	thousand metric tons	Moscovskiy basin	Moscow region	15,000
Do.	do.	Neryungri basin	Sakha Republic (Yakutiya)	15,000
Do.	do.	Pechorskiy basin	Komi Republic	30,000

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Coal—Continued	thousand metric tons	South Yakutiya basin	Sakha Republic (Yakutiya)	17,000
Do.		Ulughemskiy basin	Tyva Republic	NA
Do.		Yuzhno-Yakutskiy basin	Sakha Republic (Yakutiya)	NA
Cobalt		OJSC MMC Norilsk Nickel (Normickel)	Norilsk, Kola Peninsula	4,000
Do.		Rezh and Yuzhuralnikel enterprises	South Urals	2,100
Do.		Ufaleynikel Co.	Chelyabinskaya Oblast', Urals	4,000
Do.		Khovu-Aksynskoe (nickel-cobalt) deposit	Khovu-Aksy, Tyva Republic	NA
Copper:				
Concentrate, Cu content		OJSC MMC Norilsk Nickel (Normickel)	Norilsk region, Kola Peninsula	500,000
Do.		ZAO Russkaya Mednaya Kompaniya (RMK)	Urals	70,000
Do.		Metalloinvest Holding	Udokan, Zabaykal'skiy Kray	NA
Do.		OAo Ural'skaya Gorno-Metallurgicheskaya Kompaniya (UGMK)	do.	230,000
Metal, refined		OJSC MMC Norilsk Nickel (Normickel)	Norilsk region, Kola Peninsula	450,000
Do.		ZAO Russkaya Mednaya Kompaniya (RMK)	Urals	170,000
Do.		OAo Ural'skaya Gorno-Metallurgicheskaya Kompaniya (UGMK)	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 Republic (Yakutiya) 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: Chelyabinsk electrometallurgical plant	Chelyabinskaya Oblast'	450,000
Do.		Kuznetsk ferroalloys plant	Novokuznetsk	400,000
Do.		Chusovoy iron and steel plant	Permskiy 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 Co.	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.		Kyakhtinsky deposit	do.	NA
Do.		Kalanguy mining complex	Zabaykal'skiy Kray	NA
Do.		Yaroslavsky mining and beneficiation complex	Pogranichnoye and Vosnesenskoye deposits, Primorskiy Kray	NA
Gallium		Achinsk (United Company RUSAL)	Achinsk in Eastern Siberia	15
Do.		OOO Galliy	NA	NA
Do.		Novosibirsk tin complex	Novosibirsk	NA
Do.		Pikalevo (United Company RUSAL)	Pikalyovo	NA
Germanium, metal and products		Federal State Unitary Enterprise Germanium	Krasnoyarsk	7
Gold	kilograms	Mining companies: ZAO Amur a/s	Mining regions: Khabarovskiy Kray	5,500
Do.	do.	OAo Buryatzoloto	Buryatiya Republic	5,000
Do.	do.	ZAO Chukotskaya Mining and Geological Co. (Chukotskaya GKG)	Chukotskiy Avtonomnyy Okrug	15,000
Do.	do.	OOO Mining and Geological Co. (GRK) Aldanzoloto	Sakha Republic (Yakutiya)	4,000

See footnotes at end of table.

TABLE 2—Continued
 RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Gold—Continued	kilograms	Mining companies—Continued:	Mining regions—Continued:
		Highland Gold Mining Ltd. (HGM)	Khabarovskiy and Zabaykal'skiy Kray
Do.	do.	Kinross Gold Corp.	Chukotskiy Avtonomnyy Okrug
Do.	do.	LT-Resurs, ZAO	Irkutskaya Oblast'
Do.	do.	OOO Neryungri-Metallik	Sakha Republic (Yakutiya)
Do.	do.	OOO Nirungan	do.
Do.	do.	OAo Omchak	Magadanskaya Oblast'
Do.	do.	OAo Omolonskaya ZRK	do.
Do.	do.	ZAO Omsukchanskaya GGK	do.
Do.	do.	Oyna, a/s	Tyva Republic
Do.	do.	Petropavlovsk plc	Petropavlovsk
Do.	do.	OAo Pokrovskiy Mine	Amurskaya Oblast'
Do.	do.	OAo Polimetal	Magadanskaya and Sverdlovskaya Oblast's, Khabarovskiy Kray
Do.	do.	Polyarnaya, a/s	Chukotskiy Avtonomnyy Okrug
Do.	do.	OAo Polyus Gold	Krasnoyarskiy Kray
Do.	do.	OOO Priisk Drazhnyy	do.
Do.	do.	OAo Priisk Solov'yevskiy	Amurskaya Oblast'
Do.	do.	OOO Ros-DV	Khabarovskiy Kray
Do.	do.	OOO Russdragmet	Khabarovskiy Kray, Zabaykal'skiy Kray
Do.	do.	OAo Seligdar	Sakha Republic (Yakutiya)
Do.	do.	Severstal Nordgold NV	Russia, Kazakhstan, and West Africa
Do.	do.	OOO Sovrudnik	Krasnoyarskiy Kray
Do.	do.	OAo Susumanzoloto	Magadanskaya Oblast'
Do.	do.	OAo Uralektromed'	Sverdlovskaya Oblast'
Do.	do.	Vitim, a/s	Irkutskaya Oblast'
Do.	do.	Vostok, a/s	Khabarovskiy Kray
Do.	do.	OOO Vysochayshiy (GV Gold)	Irkutskaya Oblast' and Sakha Republic (Yakutiya)
Do.	do.	OOO Yuzhuralzoloto	Chelyabinskaya Oblast'
Do.	do.	Zapadnaya, a/s	Krasnoyarskiy Kray
Do.	do.	ZAO Zolotaya, ZDK	Khakasiya Republic
Indium:			
Primary	Chelyabinsk zinc plant	Chelyabinskaya Oblast'	6
Secondary	Elektrozink plant	Vladikavkaz, North Caucasus	6
Iron ore	Kursk Magnetic Anomaly (KMA) region, which contains the following enterprises:	Locations:	50,000,000 ²
	Lebedi and Stoilo Mikhaylovka	Gubkin Zheleznogorsk	
Do.	Northwest region, which contains the following enterprises:	Locations:	22,000,000 ²
	Kostomuksha Kovdor Olenegorsk	Kostomuksha Kola Peninsula Olenegorsk	
Do.	Siberia region, which contains the following enterprises:	Locations:	18,000,000 ²
	East:		
	Korshunovo Rudnogorsk	Zheleznogorsk Rudnogorsk	
	West:		
	Abakan Sheregesh Tashtagol Teya	Abaza Sheregesh Tashtagol Vershina Tei	

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Iron ore—Continued	Urals region, which contains the following enterprises: Akkermanovka Bakal Goroblagodat Kachkanar Magnitogorsk Peshchanka	Locations: Novotroitsk Bakal Kushva Kachkanar Magnitogorsk Rudnichnyy	22,000,000 ²
Lead, metal	Dalpolymetal lead smelter	Rudnaya in Primorskiy Kray	20,000
Do.	Elektrozink lead smelter [Ural Mining and Metallurgical Co. (UMMC)]	Vladikavkaz, North Caucasus	40,000
Lead-zinc, ore:			
Lead, recoverable Pb content	Altay mining-beneficiation complex	Altay Kray, Southern Siberia	2,000
Do.	Dalpolymetal mining-beneficiation complex	Primorskiy Kray	20,000
Do.	Nerchinsk polymetallic complex	Zabaykal'skiy Kray	7,000
Do.	Sadon lead-zinc complex	North Ossetia	5,000
Do.	Salair mining-beneficiation complex	Kemerovskaya Oblast'	2,000
Zinc, recoverable Zn content	Altay mining-beneficiation complex	Altay Kray, Southern Siberia	1,000
Do.	Dalpolymetal mining-beneficiation complex	Primorskiy Kray	25,000
Do.	Nerchinsk polymetallic complex	Zabaykal'skiy Kray	12,500
Do.	Sadon lead-zinc complex	Severnaya Osetiya	14,000
Do.	Salair mining-beneficiation complex	Kemerovskaya Oblast'	10,500
Limestone	Mazulsky Mine (United Company Rusal)	Goryachegorsk massif, Eastern Siberia	NA
Lithium and its compounds	JSC Novosibirsk Chemical Plant (TVEL Corp.)	Novosibirsk	NA
Do.	JSC Chemical-Metallurgical Plant (TVEL Corp.)	Krasnoyarsk	NA
Magnesite	Karagayskiy open pit (Magnezit Group) and Magnezitovaya underground mine (Magnezit Group)	Sakha group of deposits (Chelyabinskaya Oblast')	3,800,000
Magnesium, metal (for sale)	Avisma plant	Berezniki	35,000
Do.	Solikamsk plant (Uralkali)	Permskiy Kray	30,000
Mica	Emel'dzhak deposit, Aldan Shield	Sakha Republic (Yakutiya)	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 Transbaikal	NA
Do.	Sorsk molybdenum mining enterprise	Khakasiya Republic	NA
Do.	Tyrnyauz tungsten-molybdenum mine [OAO Kabardino-Balkarskaya Tungsten-Molybdenum Co. (Government of Kabardino-Balkariya Republic)]	Republic of Kabardino-Balkariya, North Caucasus	NA
Do.	Shakhtaminskoye molybdenum mining enterprise	Zabaykal'skiy Kray	NA
Natural gas	million cubic meters	Komi Republic	8,000
Do.	do.	Norilsk area	5,500
Do.	do.	North Caucasus	6,000
Do.	do.	Sakhalin	2,000
Do.	do.	Tomsk Oblast	500
Do.	do.	Tyumen Oblast, of which:	575,000 ²
Do.	do.	Medvezhye field	(75,000)
Do.	do.	Urengoy field	(300,000)
Do.	do.	Vyrngapur field	(17,000)
Do.	do.	Yamburg field	(170,000)
Do.	do.	Bovanenko field	NA
Do.	do.	Pestsovoyy field	NA
Do.	do.	Zapolyarnyy field	NA
Do.	do.	Shtokmanov field	NA

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Natural gas— Continued	million cubic meters	Urals	Ural'skiye Gory	45,000
Do.	do.	Volga	Vologodskaya Oblast'	6,000
Do.	do.	Yakut-Sakha	Sakha Republic (Yakutiya)	1,500
Nepheline syenite		Apatite complex	Kola Peninsula	1,500,000
Do.		Kiya-Shaltyr Mine (United Company RUSAL)	Goryachegorsk massif, Eastern Siberia	NA
Nickel:				
Ore, Ni content		OJSC MMC Norilsk Nickel (Nornickel)	Kola Peninsula and Norilsk region	300,000
Do.		OAO Ufaleynickel [Koks Industrial Metallurgical Holding Co.]	Chelyabinskaya Oblast', Urals	17,000
Do.		OAO Yuzhuralnickel [OAO Mechel]	South Urals	3,000
Do.				
Metal:				
Smelting		OJSC MMC Norilsk Nickel (Nornickel)	Norilsk region, Kola Peninsula	160,000
Do.	do.	do.	Pechenga	50,000
Do.	do.	do.	Monchegorsk	50,000
Refining		do.	do.	140,000
Do.	do.	do.	Norilsk region, Kola Peninsula	100,000
Ni products and Ni in FeNi		Enterprises	Location:	
		ZAO Rezhnickel [Ural Mining and Metallurgical Co. (UMMC)]	South Urals	65,000 ²
		OAO Ufaleynickel [Koks Industrial Metallurgical Holding Co.]	do.	
		Yuzhuralnickel [Mechel OAO]	do.	
Niobium (columbium)		Karnarsurt mining enterprise (AO Sevredmet)	Lovozerskoye deposit, Kola Peninsula	12,000
Oil shale	thousand metric tons	Leningradslanets Association	Slantsy, Leningradskaya Oblast'	5,000
Petroleum	do.	Bashneft'	Bashkortostan Republic	12,000
Do.	do.	Gazprom Neft'	Deposits throughout Russia	50,000
Do.	do.	OAO Lukoil	West Siberian deposits: Kechimovskoye Nivagalskoye Urals deposits Volga Region Timen Pechora deposit: Yuzhnaya Khylochuya Komi Republic deposits: Kyrtaelskoye Pashshorskoye Perevoznoye	100,000 ²
Do.	do.	OAO Novatek	Western Siberia	5,000
Do.	do.	OAO NK Rosneft'	Deposits throughout Russia	120,000
Do.	do.	Russneft'	Central and Western Siberia, Urals and Volga regions	15,000
Do.	do.	Slavneft'	Western Siberia and Krasnoyarskiy Kray	20,000
Do.	do.	OAO Surgutneftegas	Khanty-Mansiyskiy Avtonomnyy Okrug (HMAO)	60,000
Do.	do.	Tatneft'	Deposits: Romashkinskoye Novo-Elkhovskoye Bavlinskoye Bondyuzskoye Pervomayskoye Sabandchinskoye	30,000 ²

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Petroleum—Continued thousand metric tons	OAo TNK–BP Holding	Deposits: Kammenoye Kovyatka Russkoye Suzunskoye Tagulskoye Uvat Verkhnechonsk	80,000 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	Urals	NA
Phosphate rock, apatite concentrate	OAo Apatit (Phosagro)	Kola Peninsula	12,000,000
Do.	Khibiny apatite association (OAo Apatit)	do.	15,000,000
Do.	Kovdor iron ore mining association	do.	700,000
Platinum-group metals:			
Ore, PGM content	OJSC MMC Norilsk Nickel	Norilsk region, Kola Peninsula	150
Do.	AO Koryakgeoldobycha, Amur Prospectors	Placer deposits (mostly platinum), Urals; Siberia; Russian Far East	10
Do.	Lopatino and Yegorevsk deposits	Moscow Oblast'	NA
Do.	Polpinskoye deposit	Bryanskaya Oblast'	NA
Do.	Verkhnekamsk deposit	Ural'skiye Gory	NA
Do.	OAo AS Amur (Russian Platinum Co.)	Placer deposits (mostly platinum), Urals; Siberia; Russian Far East	10
Metals	Krasnoyarsk Nonferrous Metals Plant (Krastrsvetmet)	Krasnoyarskiy Kray	NA
Do.	Ekaterinburgskiy plant (EZOTsM)	Sverdlovskaya Oblast'	NA
Do.	Priobsk plant (OJSC Gazprom Neft)	Khanty-Mansiyskiy Avtonomnyy Okrug (HMAO)	NA
Potash, K ₂ O equivalent	OAo Uralkali	Verkhnekamskoye deposit	8,000,000
Do.	OAo Akron	Novgorod	NA
Rare earths	OAo Apatit	Lovozerskoye 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	NA
Soda ash	Achinsk plant	Eastern Siberia	595
Do.	Berezniki plant	Ural'skiye Gory	1,080
Do.	Pikalyovo 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	Permskiy Kray	570,000
Do.	JSC Electrosteel 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	Permskiy Kray	350,000
Do.	OAo Magnitogorsk mining and metallurgical complex (MMK)	Chelyabinskaya Oblast'	16,200,000

See footnotes at end of table.

TABLE 2—Continued
RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Steel, crude—Continued	OAO Mechel (Mechel)	Chelyabinskaya Oblast'	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.	Revdivinskiy 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.	Sibelectrostal Metallurgical Works	Krasnoyarskiy Kray	110,000
Do.	Sulinskiy Steel Works (Staks)	Rostovskaya Oblast'	280,000
Do.	Taganrog Iron and Steel Works (Tagmet)	do.	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.	Vykxa 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.	Shabrovskiy deposit	Sverdlovskaya Oblast'	NA
Tantalum, ore	Facilities: Zabaykalskiy mining and beneficiation complex NA	Deposits: Etykinskoye deposit Lovozerskoye 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	11 ³
Do.	Tin Ore Co.	Solnechniy deposit, Khabarovskiy Kray	NA
Do.	Pravourmiyskoye	Khabarovskiy Kray	NA
Do.	Deputatskiy (Sakhaolovo)	Sakha Republic (Yakutiya)	NA ³
Do.	Vostokolovo	Russian Far East	NA ³
Do.	Iultin mining and beneficiation complex	Magadanskaya Oblast'	NA ³
Do.	Khrustalnyi mining and beneficiation complex	Primorskiy Kray	NA ³
Do.	Pevek mining and beneficiation complex	Magadanskaya Oblast'	NA ³
Metal	Novosibirsk Processing Plant Ltd.	Novosibirskaya Oblast'	NA ³
Titanium:			
Ore	OOO Lovozerkiy GOK	Murmanskaya Oblast	NA
Do.	OAO Apatit	Kyvisvumchorrskoye and Yuksporskoye deposits	NA
Do.	OAO TGOK Ilmenit	Tyuganskoye deposit	NA
Do.	OOO Olekminskiy Rudnik	Kuranakskoye deposit	NA

See footnotes at end of table.

TABLE 2—Continued
 RUSSIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015¹

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity ^c
Titanium—Continued:			
Metal	Moscow plant	Moscow	NA
Do.	Podol'sk plant	Podol'sk	NA
Do.	AO Corp. VSMPO-Avisma	Bereznikovskiy Complex, Permskiy Kray	NA
Sponge	do.	do.	40,000
Do.	Solikamskiy Magnium Plant (SMZ)	Solikamsk, Permskiy Kray	NA
Tungsten:			
Concentrate, W content	AS Quartz	Bom-Gorkhom deposit, West Transbaikal, Zabaykal'skiy Kray	NA
Do.	ZAO Novoorlovskiy GOK	Spokoyninskoye deposit, Zabaykal'skiy Kray	NA
Do.	KGUP Primteploenergo	Lermontovskoye deposit, Primorskiy Kray	NA
Do.	AO Primorskiy GOK	Vostok-2 deposit	NA
Do.	ZAO Zakamensk	Ruchey Inkur deposit, Barun-Narynskoye deposit	NA
Do.	Tyrnauz tungsten-molybdenum mine [AO Kabardino-Balkarskaya Tungsten-Molybdenum Co. (Government of Kabardino-Balkariya Republic)]	Republic of Kabardino-Balkariya, North Caucasus	NA
Metal	Gidrometallurg plant	do.	NA
Uranium ore, U content	Uranium Holding AO Atomredmetzoloto (ARMZ): ZAO Dalur mining enterprise AO Khiagda mining enterprise Priargunskoye mining and chemical enterprise	Locations: Kurganskaya Oblast' Buryatiya Republic Krasnokamensk, Zabaykal'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:			
Copper-zinc ore, Zn content	Bashkir copper-zinc complex	Sibai, Southern Urals	5,000
Do.	Buribai copper-zinc mining complex	Buribai, Southern Urals	1,500
Do.	Gai copper-zinc mining and beneficiation complex	Gai, Southern Urals	25,000
Do.	Kirovgrad copper enterprise	Kirovgrad, Central Urals	1,200
Do.	Sredneuralsk copper complex	Revda, Central Urals	5,000
Do.	Uchali copper-zinc mining and beneficiation complex	Uchalinskiy Rayon, Southern Urals	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.	Uralkhrommet plant [Ural Mining and Metallurgical Co. (UMMC)]	Verkhnyaya Pyshma	17,000
Zirconium:			
Baddeleyite concentrate	Kovdor iron ore mining and beneficiation complex	Kola Peninsula	3,500
Metal	Chepetskiy metallurgical plant (TVEL Corp.)	Glazov, Udmurtiya Republic	NA

^cEstimated; 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.

³Not in operation as of 2015.