



# 2019 Minerals Yearbook

---

**UZBEKISTAN [ADVANCE RELEASE]**

---

# THE MINERAL INDUSTRY OF UZBEKISTAN

By Elena Safirova

In 2019, Uzbekistan was the 4th-ranked producer of kaolin (10% of world production), the 7th-ranked producer of rhenium (0.9% of world production), and the 12th-ranked producer of gold (2.8% of world production). In addition, Uzbekistan was one of the leading world producers of crude petroleum and natural gas, molybdenum, nitrogen, and uranium. Other valuable minerals produced included copper, gypsum, kaolin, lead, silver, tungsten, vermiculite, and zinc. Many other mineral commodities had been identified but were not being mined. In the past several years, however, the country had made significant efforts to increase its mineral production, including through expansion of copper and gold production facilities, construction of new phosphate and potash plants, and development of shale oil and gas condensate deposits. For more information, see previous editions the U.S. Geological Survey Minerals Yearbook, volume III, Area Reports—International—Europe and Central Eurasia (table 1; U.S. Energy Information Administration, 2019; International Energy Agency, 2020; Apodaca, 2021; George, 2021; Jasinski, 2021; Polyak, 2021a, b; Simmons, 2021; World Nuclear Association, 2021).

## Minerals in the National Economy

In 2019, Uzbekistan's real gross domestic product (GDP) increased by 5.8% compared with increasing by 5.4% in 2018; the nominal GDP was 510.1 trillion soums (\$58.03 billion).<sup>1</sup> During the year, the share of industrial production (excluding construction) in the GDP was 26.8%. The share of mining and quarrying in overall industrial production was 13.5% (12.4% in 2018), and that of manufacturing, 79.0% (80.6% in 2018). In 2019, the value of all industrial production increased by 5.0%. Compared with that in 2018, production in all manufacturing sectors increased by 6.6%, whereas production in the mining and quarrying sector decreased by 0.6%. Within manufacturing, metallurgical production increased by 17.8%, the output of other nonmetallic mineral products increased by 4.3%, and the output of coke and petroleum refinery products increased by 3.1% (State Committee of the Republic of Uzbekistan on Statistics, 2021b, c).

## Government Policies and Programs

In January 2019, the President signed a decree to remove the secrecy requirements regarding produced and sold volumes of gold. In December 2018, the Ministry of Finance published a draft of a government decree to remove the ban on publishing information on reserves and production of mineral commodities; on publishing financial reports of the Fund for Reconstruction

<sup>1</sup>Where necessary, values have been converted from Uzbek soums (UZS) to U.S. dollars (US\$) at an annual average exchange rate of UZS8,790=US\$1.00 for 2019 and UZS8,044=US\$1.00 for 2018, and from euro area euros (EUR) to US\$ at an annual average exchange rate of EUR0.893=US\$1.00 for 2019 and EUR0.848=US\$1.00 for 2018.

and Development of Uzbekistan (FRRU), the Almalyk mining and metallurgical complex (Almalyk GMK), and the Navoi mining and metallurgical complex (Navoi GMK) from 2013 on; and on publishing gold reserves for the years prior to 2017. No information was available about whether the relevant decrees were issued by yearend (Gazeta.uz, 2019g).

In July 2019, the Government approved a program for development and replenishment of mineral resources for the 2020–21 period. The program was to receive Government funding in the amount of 2.37 trillion soums (about \$270 million). According to the program plan, the share of prospective areas where geologic exploration is conducted will be increased to 35% in 2020 and 40% in 2021. The program plan stipulates that gold production in Uzbekistan is to reach 150 metric tons (t) by the end of 2020 and 300 t by the end of 2021. According to the plan, the program will include the creation of a road map for making improvements in geologic exploration, increasing the investment attractiveness of the mineral sector, and implementing international standards for exploration reports and approval of reserves in compliance with the Joint Ore Reserves Committee (JORC) Code. The program also will include the creation of a unified online platform for information related to prospective areas and mineral deposits. Finally, the program is to offer signup bonuses for exploration and prospecting for minerals and guarantee constant tax rates for the entire period of an investment project (Gazeta.uz, 2019a; Uzdaily.com, 2019a; Uzsm.uz, 2019).

As of 2019, Uzbekistan had more than 2,000 known mineral deposits containing 73 minerals, and 437 of those deposits remained undeveloped. The country had 111 prospective deposits, of which only 14 were under development; among these 14 development projects, 6 had the participation of foreign direct investment that totaled \$39 million. The Government assigned the Ministry of Investment and External Trade and the State Committee for Geology and Mineral Resources (GosComGeology) the task of developing a portfolio of new investment projects to market to businesses abroad through road shows and investor conferences to attract investors. Specifically, the ministries were expected to start at least 20 new investment projects, including mining for tungsten, graphite, and other mineral commodities that were in high demand (Uzsm.uz, 2019).

## Production

The Government did not report production of most mineral commodities for 2019, and the majority of production numbers in table 1 are estimated. Production of copper cathodes increased by 26% (estimated); refined copper, by 26%; cement, by 19%; and mined lead, by 17% (estimated). Silver production decreased by 16%. These and other production data are in table 1.

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

### Mineral Trade

In 2019, Uzbekistan had a negative trade balance of about \$6.8 billion. The value of exports was reported to be \$17.46 billion, which was an increase of 24.8% compared with that of 2018. The main export mineral commodities were energy and petroleum products (14.5%), ferrous and nonferrous metals (7.2%), and chemicals (5.0%). Revenue from exports of mineral fuels and refinery products amounted to \$2.53 billion; copper and articles made of it, \$707.9 million; ferrous metals, \$263.8 million; zinc and articles made of it, \$202.2 million; fertilizers, \$137.9 million; ores, slag, and ash, \$43.5 million; articles made of ferrous metals, \$39.0 million; and industrial minerals, including cement, lime, salt, stone, and sulfur, \$33.6 million. Uzbekistan's major exports partners were China (which received 8.6% of Uzbekistan's exports), Russia (7.8%), Turkey (5.7%), Kazakhstan and Kyrgyzstan (5.0% each), and Afghanistan (3.5%) (Uzdaily.uz, 2019f, g; State Committee of the Republic of Uzbekistan on Statistics, 2021a).

The value of Uzbekistan's imports increased to \$24.29 billion, or by 25.0% compared with that in 2018. The main import mineral commodities were chemicals (13.2%), ferrous and nonferrous metals (8.7%), and energy and petroleum products (3.9%). Uzbekistan's major imports partners were China (which supplied 22.6% of Uzbekistan's imports), Russia (20.7%), the Republic of Korea (10.4%), Kazakhstan (9.6%), Turkey (5.5%), Germany (3.3%), Chechia (3.0%), and Lithuania (2.1%) (State Committee of the Republic of Uzbekistan on Statistics, 2021a).

### Commodity Review

#### Metals

**Copper.**—The only producer of copper in Uzbekistan was the Almalyk GMK, which was located in Toshkent Viloyati [Tashkent Province]. Two large copper porphyry deposits, the Kalmakyr and the Sary-Cheku deposits, were the complex's sources of copper. Kalmakyr and Sary-Cheku had initial total resources of 17 million metric tons (Mt) of contained copper, about 20% of which were depleted. As of the beginning of 2016 (the latest year for which data were available), Kalmakyr's capacity was 31.5 million metric tons per year (Mt/yr) of ore. The mineral deposits of Toshkent Viloyati are highly complex and contain more than 170 types of minerals. In addition to copper, the Almalyk GMK mined and processed lead-zinc-barite ores from the Uch-Kulach deposit located in Jizzax Viloyati and the Khandiza polymetallic deposit located in Qashqadaryo Viloyati. The Almalyk GMK's facilities included eight mines, five mining and beneficiation plants, two metallurgical plants, a cement plant, a sulfuric acid plant, a mechanical plant, and a lime plant. The value of the annual output of the Almalyk GMK was estimated to be \$300 million. Since 2018, the Almalyk GMK was managed by SFI Management Group. In 2018, the Almalyk GMK adopted a new \$3.34 billion investment program that would include expansion of mining areas and construction

of new processing plants (table 2; Gazeta.uz, 2019j; Almalyk mining and metallurgical complex, 2020).

In 2017, the Almalyk GMK announced that it had begun its most ambitious investment project to date, the development of the Dal'nee copper-molybdenum deposit, also known as Eshlik I. The deposit is located within 1 kilometer of the city of Almalyk and is adjacent to the Kalmakyr deposit. Initially, the annual design capacity at Eshlik I was planned to be 23 Mt/yr of ore, but later it was increased to 74 Mt/yr. In 2019, the development of the deposit created 1,330 new jobs, and the first ore was expected to be produced in 2021. The new mine was expected to produce 65 Mt/yr of ore by 2023 and gradually to reach its design capacity of 74 Mt/yr by 2035; by that time, the new mining complex was projected to employ 6,000 people. In addition to the mine, the new complex would have its own processing facilities, including a beneficiation plant, a copper smelter, and oxygen and sulfuric acid production facilities. The beneficiation plant would be constructed by 2023 and would have the capacity to process 60 Mt/yr of ore; its cost was estimated to be \$1.48 billion. The total cost of the project was estimated to be \$1.7 billion (Podrobno.uz, 2019a, b; Sputniknews.ru, 2020).

In 2019, the Almalyk GMK produced 147,250 t of refined copper, which was a 26% increase compared with that in 2018. By 2023, the Almalyk GMK planned to increase its refined copper production to 250,000 metric tons per year (t/yr). As of 2019, the Almalyk GMK had six different projects to modernize its copper smelter, which, in addition to copper cathodes, produced precious metals (gold and silver) and rare metals (molybdenum, rhenium, selenium, and tellurium) as well as sulfuric acid and copper sulfate. The projects were to include building a new smelter furnace with a capacity of 120,000 t/yr of copper cathodes, modernization of the oxygen station, construction of the fifth sulfuric acid plant, and construction of the fifth converter furnace for copper cathodes. All those projects were projected to create 1,000 new jobs by 2023 (Podrobno.uz, 2019a; Sputniknews.ru, 2020).

**Gold.**—In 2019, Uzbekistan produced 88,500 kilograms of gold, which was a 4.6% decrease from that of 2018. The two gold producers in the country were the Almalyk GMK and the Navoi GMK. The Muruntau deposit in the Central Kyzylkum region had been mined by the Navoi GMK by open pit since 1967 and had relatively low extraction costs. The Navoi GMK was the leading producer of gold and the only uranium producer in Uzbekistan. Its share of total gold production in Uzbekistan was about 80%; it had control of 13 gold deposits, most of which were either already being mined or were planned to be developed in the near future. Refinery production at the Navoi GMK was conducted at four plants located in Navoi (GMZ-1), Uchkuduk (GMZ-3), Zarafshan (GMZ-2), and Zarmitan (GMZ-4) (tables 1, 2; Mineral.ru, 2015; Regnum.ru, 2017; Uzdaily.uz, 2019f, g; Almalyk mining and metallurgical complex, 2020; Navoi Mining and Metallurgical Combinat, 2020).

In August 2019, the Navoi GMK opened a new complex for processing refractory gold ores at the GMZ-3 refinery. The company was planning to improve the processing technology for ores from the Kokpatas and the Daugyztau gold mines in the Central Kyzylkum desert. The new complex would increase

the efficiency of raw materials processing by 8% and increase production by 11% (Gazeta.uz, 2019f).

In January 2019, the Government announced that the Navoi GMK would be restructured and converted into a publicly traded company and would no longer be owned by the Government. Specifically, uranium production and processing would be organized within a new Government-owned uranium mining company, and production and processing of precious metals would be conducted by one or more publicly traded companies. Management of the Government's share of the new company or companies would be done by professional management companies that would be selected on a competitive basis. Accordingly, the new companies would publish financial reports in compliance with international standards, and they would be subject to external audit conducted by internationally recognized auditors. The Government noted that the new structure would allow companies to attract external (including foreign) investors, improve the effectiveness of company management and oversight, and allow workers to become owners by purchasing shares in their company (Navoi Mining and Metallurgical Combinat, 2019; Uzdaily.uz, 2019b, c).

In February 2019, GosComGeology and the Geological Survey of Turkey (MTA) signed an agreement for exploration and experimental production at the Aydym-Jetyntau, Khurob, and Sarytau areas, which are located in Jizzax Viloyati and Navoiy Viloyati. The deposits were prospective for gold and tungsten. The signatories agreed to form the project operator—MTA Tashkent Mining Co.—which would be responsible for the project. The agreement specified that the MTA would expend \$2 million in direct foreign investment on the exploration in the area before the end of 2019. The work would include remote sensing, geophysical work, drilling, geochemical testing, and geologic mapping. If positive results are obtained, the two parties of the agreement would decide on the next steps (Gazeta.uz, 2019h; Uzdaily.uz, 2019d).

In March 2019, the Government signed an agreement with B2Gold Corp. of Canada for exploration of three prospective gold deposits in Navoiy Viloyati. The company committed to initially invest \$2 million in exploration work and could increase the investment if the early results turn out positive (Gazeta.uz, 2019d; Uzdaily.uz, 2019a).

**Iron Ore and Iron and Steel.**—In 2019, construction of a mining and metallurgical complex began at the Tebinbulak iron ore deposit, which is located in the Qoraqalpog'iston Respublikasi [Karakalpakstan Autonomous Republic]. In April 2017, the Government and UGMK Holding of Russia signed a memorandum of understanding for the iron ore mining project at Tebinbulak. The total investment was expected to be \$1.5 billion and was to include an open pit mine with a capacity of 33 Mt/yr of ore, a mining and beneficiation plant to produce iron ore concentrate with 65% Fe content, and a metallurgical plant capable of producing 1.5 Mt/yr of pig iron and 1.0 Mt/yr of steel. The Tebinbulak deposit was first discovered in 1937 but was not mined because of the high development costs. The reserves of the Tebinbulak deposit were 450 Mt of ore, and the total resources of the deposit were estimated to be 3.0 billion metric tons of mineralized material. In addition to iron, the ores contain chromium, manganese, vanadium, and zinc.

The President of Uzbekistan had approved construction of the new complex at the Tebinbulak deposit in January 2018. The complex was expected to be completed by 2024 and to create 2,000 new jobs; about 35% of the output was to be exported (RBC.ru, 2017; Stroyka.uz, 2017; Chernogayev, 2018; Metalinfo.ru, 2018; Sputniknews.ru, 2018; Gazeta.uz, 2019e).

The metallurgical plant at Tebinbulak would have the capacity to produce 900,000 t/yr of rebar, 225,000 t/yr of steel wire, and 375,000 t/yr of corner-shaped, channel-shaped, and other steel products. The blueprints of the plant that were approved in March 2017 showed that the plant would employ the direct-reduced iron (DRI) technology for production of pig iron and raw steel. The state company Uzbekiston Temir Yullari was tasked with identifying financing sources for the new facility. As of 2019, the total cost of the plant was projected to be about \$1.3 billion, part of which would be financed through Chinese banks (Metalinfo.ru, 2018; Uzdaily.uz, 2019j; Xs.uz, 2019).

In 2019, Uzbekistan continued construction of the Tashkent Metallurgical Plant; the beginning of construction had been announced in 2017. As of 2019, the cost of construction was estimated to be EUR326.7 million (about \$366 million) and, originally, construction was expected to be completed within 24 months. The plant would produce cold-rolled steel (primarily for use in automobiles), have the capacity to produce 500,000 t/yr of rolled products, and create approximately 700 jobs. It was projected that, within several years of opening, the plant's capacity could be increased to 750,000 t/yr. The plant was originally expected to be commissioned in 2019 but the opening was postponed until the end of 2020. About 20% of the plant's output was planned to be exported to countries in Asia and Europe (Metalinfo.ru, 2017a–c; Uzdaily.uz, 2019b, e, h).

**Lead and Zinc.**—In August 2019, an international consortium that consisted of four companies—Alliance Capital of Denmark, HPO Service of Germany, Intertech Process Technology of the United States, and SERPO Mineral Systems of Canada—announced an intention to build a new mining and beneficiation complex (GOK) at the Uch-Kulach polymetallic deposit located in Jizzax Viloyati. The total cost of the project was estimated to be \$450 million, and the complex would take about 5 years to complete. HPO Service was named the project operator. When completed, the GOK would process 5 Mt/yr of ore and produce cadmium concentrate, lead concentrate, and zinc concentrate; a part of the output would be shipped to the Jizzakh battery plant. As the immediate next steps, the consortium planned to obtain a mining license for Uch-Kulach, complete a JORC-compliant resource estimation, and prepare a feasibility study for the project. The consortium expected to be able to obtain all required permits from the Government by the middle of 2020 (Gazeta.uz, 2019c).

### *Industrial Minerals*

**Cement.**—In 2019, Uzbekistan produced about 11 Mt of cement, which was a 19.5% increase compared with production in 2018. At the beginning of 2019, Uzbekistan had six leading cement producers and another 19 smaller cement companies. The leading producers were OAO Kyzylkumcement (which had the capacity to produce 3.1 Mt/yr of cement), OAO Akhangarancement (about 2.2 Mt/yr), OAO Bekabadcement



(about 1.3 Mt/yr), OAO Kuvasaycement (about 1.1 Mt/yr), Sherabad Cement Plant (1.5 Mt), and Jizzakh Cement Plant (1.0 Mt/yr); both the Sherabad and the Jizzakh plants were subsidiaries of the Almalyk GMK (tables 1, 2; Jcement.ru, 2020).

In October 2019, OOO Surkhantsementinvest commissioned a new cement plant in Surkhandar'o Viloyati with a capacity to produce 1.1 Mt/yr of cement. The company invested a total of \$144 million into this plant; it planned to export about 750,000 t/yr of cement and to sell the rest of the output locally. In 2017, Eurocement Group of Russia, which was the owner of OAO Akhangarancement, signed a contract to construct a new cement plant in the Angren free economic zone. The plant would use the dry cement production method and would have the capacity to produce 2.4 Mt/yr of cement. The project was expected to cost about \$162 million and to be completed in 2020 (Jcement.ru, 2019).

### *Mineral Fuels and Related Materials*

**Uranium.**—In 2019, Uzbekistan produced 3,500 t of uranium, which was a 5.1% increase compared with production in 2018. The sole producer of uranium in Uzbekistan was the Navoi GMK. In January 2019, Uzbekistan signed a new long-term agreement regarding shipment of uranium to India, but the amount to be shipped and the timeframe of the agreement were not disclosed. Previously, between 2014 and 2018, Uzbekistan had shipped 2,000 t of uranium to India. In December 2019, Uzbekistan signed long-term contracts with Marubeni Corp. of Japan for about \$510 million and Itochu Corp. of Japan for about \$636 million. Overall, Uzbekistan agreed to supply more than \$1 billion worth of uranium to Japanese companies in the period from 2023 to 2030. Earlier, in September 2017, Uzbekistan agreed to supply \$300 million worth of uranium concentrate over a 7-year period to Nukem Inc. of the United States (tables 1, 2; Gazeta.uz, 2017, 2019i, 2020).

In September 2019, Uzbekistan's GosComGeology and Orano Mining of France signed an agreement for the creation of a joint venture aimed at conducting exploration for uranium in Navoiy Viloyati, preparing feasibility studies for mine development, mining uranium, and selling finished products. The joint venture, which was named Nurlikum Mining, would be able to produce about 1,500 t of uranium nitrous oxide and was expected to create 300 new jobs. The enterprise would conduct exploration in the three prospective areas of sandstone type uranium—North Jengeldy, South Jengeldy, and Yangikuduk. According to the agreement, Orano's share in the joint venture would amount to 51%, which would be contributed as capital, technology, and equipment, and the share of GosComGeology would be 49%, represented by geologic and other information related to the prospective areas. During the first stage, Orano committed to invest up to \$20 million in exploration and, if a commercially viable deposit is discovered, up to \$150 million for development and consequent production. The joint venture planned to start work in early 2020 (Gazeta.uz, 2019b; Uzdaily.uz, 2019i).

### **Outlook**

In the past several years, Uzbekistan has intensified its efforts to grow the country's industry, specifically the manufacturing sector, including automobile production, chemical production, construction products, and machine building. Increased industrial production and higher living standards in the country are expected eventually to increase energy consumption. Facing competition for its hydrocarbon resources between domestic demand and export needs, Uzbekistan will likely seek to increase its production and export of hydrocarbons during the next decade by expanding the pipelines and modernizing the country's production facilities and infrastructure. The Government is also likely to continue to form partnerships with Asian and Russian firms to help achieve this objective. For more information, see previous editions the U.S. Geological Survey Minerals Yearbook, volume III, Area Reports—International—Europe and Central Eurasia.

In the past several years, Uzbekistan has made concerted efforts to modernize its Almalyk and Navoi GMK complexes and to ramp up their production. Barring unforeseen events in the world economy, Uzbekistan's production of metals, such as copper, gold, iron and steel, lead, uranium, and zinc, is expected to increase in the next several years. It remains to be seen if major investment projects, such as Eshlik I and Eshlik II, and privatization of the Navoi GMK are completed in the next several years.

### **References Cited**

- Almalyk mining and metallurgical complex, 2020, Home page: Almalyk mining and metallurgical complex. (Accessed November 28, 2020, at <http://www.agmk.uz/index.php/en/>.)
- Apodaca, L.E., 2021, Nitrogen (fixed)—Ammonia: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 116–117.
- Chernogayev, Yuri, 2018, Tebinbulak: konets legendy i nachalo raboty [Tebinbulak—The end of the legend and the beginning of work]: Anhor.uz, January 14. (Accessed November 28, 2020, at <https://anhor.uz/columnists/tebinbulak-konec-legendy-i-nachalo-raboty/>) [In Russian.]
- Gazeta.uz, 2017, Uzbekistan postavit Nukem (SShA) uran na \$300 mln [Uzbekistan will sell to Nukem (USA) \$300 million worth of uranium]: Gazeta.uz, September 27. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2017/09/27/uranus/>.) [In Russian.]
- Gazeta.uz, 2019a, Dobychu zolota i serebra dovedut do 300 tonn v 2021 godu [Gold and silver production will be increased to 300 tons in 2021]: Gazeta.uz, July 25. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/07/25/mining/>.) [In Russian.]
- Gazeta.uz, 2019b, Frantsuzskoy Orano opredelili orientiry [Goals are determined for French Orano]: Gazeta.uz, December 4. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/12/04/orano/>.) [In Russian.]
- Gazeta.uz, 2019c, Gorno-obogatitel'nyi kompleks za \$450 mln postroyat v Dzhizakskoy oblasti [A \$450-million mining and beneficiation complex will be built in Jizzax Viloyati]: Gazeta.uz, August 30. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/08/30/complex/>.) [In Russian.]
- Gazeta.uz, 2019d, Kanada izuchit tri mestorozhdeniya zolota v Uzbekistane [Canada will explore three gold deposits in Uzbekistan]: Gazeta.uz, March 12. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/03/12/gold/>.) [In Russian.]
- Gazeta.uz, 2019e, Na Tebinbulke budut dobyvat' 33 milliona ton rudy v god [33 million tons per year of ore will be produced at Tebinbulak]: Gazeta.uz, August 21. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/08/21/tebinbulak/>.) [In Russian.]
- Gazeta.uz, 2019f, NGMK postroil novyi kompleks pererabotki zolotykh rud [NGMK built a new complex for processing of gold ores]: Gazeta.uz, August 28. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/08/28/ngmk/>.) [In Russian.]

- Gazeta.uz, 2019g, S informatsii o zolote snimut rezhim secretnosti [The secrecy regime will be removed from gold]: Gazeta.uz, January 19. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/01/19/gold/>.) [In Russian.]
- Gazeta.uz, 2019h, Turtsiya izuchit mestorozhdeniya zolota i vol'frama v Uzbekistane [Turkey will explore deposits of gold and tungsten in Uzbekistan]: Gazeta.uz, February 14. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/02/14/geo/>.) [In Russian.]
- Gazeta.uz, 2019i, Uzbekistan budet postavl'yat' Indii uran [Uzbekistan will export uranium to India]: Gazeta.uz, January 18. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/01/18/uranus/>.) [In Russian.]
- Gazeta.uz, 2019j, V Almal'yke voshitilis' kar'erami Yuzhnoy Ameriki [Almalyk was amazed by South American open pit mines]: Gazeta.uz, October 16. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2019/10/16/agmk/>.) [In Russian.]
- Gazeta.uz, 2020, Uzbekistan postavit Yaponii uran na \$1 mlrd [Uzbekistan will sell to Japan \$1 billion worth of uranium]: Gazeta.uz, January 7. (Accessed January 14, 2021, at <https://www.gazeta.uz/ru/2020/01/07/uranus/>.) [In Russian.]
- George, M.W., 2021, Gold: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 70–71.
- International Energy Agency, 2020, Uzbekistan energy profile: International Energy Agency, March. (Accessed March 26, 2021, at <https://www.iea.org/reports/uzbekistan-energy-profile>.)
- Jasinski, S.M., 2021, Phosphate rock: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 122–123.
- Jcement.ru, 2019, V Uzbekistane zapustili novyi tsementnyi zavod stoimost'yu 144 mln dollarov [Uzbekistan opened a new \$144 million cement plant]: Jcement.ru, October 18. (Accessed March 28, 2021, at <https://jcement.ru/content/news/v-uzbekistane-zapustili-novyy-tsementnyy-zavod-stoimostyu-144-mln-dollarov/>.) [In Russian.]
- Jcement.ru, 2020, V Uzbekistane v fevrale proizvodstvo tsementa vyroslo na 16.4% [Uzbekistan increased cement production in February by 16.4%]: Jcement.ru, March 25. (Accessed January 14, 2021, at <https://jcement.ru/content/news/v-uzbekistane-sokrashchaetsya-proizvodstvo-portlandtsementa/>.) [In Russian.]
- Metalinfo.ru, 2017a, UGMK planiruyet postroit' v Uzbekistane staleliteynyi zavod [UGMK plans to build a steel plant in Uzbekistan]: Metalinfo.ru, May 4. (Accessed November 28, 2020, at <https://www.metalinfo.ru/ru/news/93430/>.) [In Russian.]
- Metalinfo.ru, 2017b, V 2019 g. v Uzbekistane postroyat zavod po vypusku kholodnokatanogo prokata [In 2019, Uzbekistan will build a plant for cold-rolled steel]: Metalinfo.ru, June 4. (Accessed November 28, 2020, at <https://www.metalinfo.ru/ru/news/93431/>.) [In Russian.]
- Metalinfo.ru, 2017c, V Uzbekistane planiruyetsya stroitel'stvo metalurgicheskogo zavoda [Uzbekistan is planning construction of a metallurgical plant]: Metalinfo.ru, June 2. (Accessed November 28, 2020, at <https://www.metalinfo.ru/ru/news/91983/>.) [In Russian.]
- Metalinfo.ru, 2018, Uzbekistan nachnet stroitel'stvo novogo GOK'a v Karakalpakstane [Uzbekistan will begin construction of a new GOK in Karakalpakstan]: Metalinfo.ru, January 31. (Accessed November 20, 2020, at <https://metalinfo.ru/ru/news/100061/>.) [In Russian.]
- Mineral.ru, 2015, Uzbekskiy NGMK v 2015 godu napravil na modernizatsiyu 158 mln dollarov [In 2015, Uzbekistan's NGMK invested \$158 million in modernization]: Mineral.ru, December 14. (Accessed January 15, 2021, at <http://www.mineral.ru/News/80419.html>.) [In Russian.]
- Navoi Mining and Metallurgical Combinat, 2019, O preobrazovanii GP Navoiyskiy GMK v aktsionernoye obshchestvo [On conversion of state enterprise Navoi GMK into a joint stock company]: Navoi Mining and Metallurgical Combinat February 8. (Accessed January 14, 2021, at <http://pressangmk.uz/ru/news/292/>.) [In Russian.]
- Navoi Mining and Metallurgical Combinat, 2020, Home Page: Navoi Mining and Metallurgical Combinat. (Accessed November 20, 2020, at <http://www.ngmk.uz/en>.)
- Podrobno.uz, 2019a, AGMK nameren k 2023 godu znachitel'no uvelichit' proizvodstvo medi i tsvetnykh metallov [AGMK intends to increase copper and nonferrous metals production by 2023]: Podrobno.uz, November 29. (Accessed January 14, 2021, at <https://podrobno.uz/cat/economic/agmk-nameren-k-2023-godu-znachitelno-uvelichit-proizvodstvo-medi-i-tsvetnykh-metallov/>.) [In Russian.]
- Podrobno.uz, 2019b, AGMK planiruyet dobyvat' na novom mestorozhdenii Eshlik I do 74 millionov ton mednoy rudy v god [AGMK plans to produce up to 74 million tons of copper ore at the new Eshlik I Mine]: Podrobno.uz, September 16. (Accessed January 14, 2021, at <https://podrobno.uz/cat/obchestvo/agmk-planiruet-dobyvat-na-novom-mestorozhdenii/>.) [In Russian.]
- Polyak, D.E., 2021a, Molybdenum: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 110–111.
- Polyak, D.E., 2021b, Rhenium: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 134–135.
- RBC.ru, 2017, UGMK voz'metsya za Tebinbulak [UGMK will tackle Tebinbulak]: RBC.ru, April 4. (Accessed November 28, 2020, at <https://www.rbc.ru/newspaper/2017/04/05/58e3ad5c9a79475df7a127ac>.) [In Russian.]
- Regnum.ru, 2017, Tri rossiyskiye kompanii privlecheny k zoloodobyvayushim proektam v Uzbekistan [Three Russian companies are invited to work on gold mining projects in Uzbekistan]: Regnum.ru, May 12. (Accessed November 28, 2020, at <https://regnum.ru/news/2274247.html>.) [In Russian.]
- Simmons, K.J., 2021, Clays: U.S. Geological Survey Mineral Commodity Summaries 2021, p. 48–49.
- Sputniknews.ru, 2018, V Uzbekistane postroyat gorno-metallurgicheskii kompleks za \$1,75 milliarda [Uzbekistan will build a new mining and metallurgical complex for \$1.75 billion]: Sputniknews.ru, January 15. (Accessed November 28, 2020, at <https://tj.sputniknews.ru/asia/20180115/1024416433/uzbekistane-postroyat-gorno-metallurgicheskii-kompleks-175-milliarda.html>.) [In Russian.]
- Sputniknews.ru, 2020, AGMK v 2019 godu uvelichil proizvodstvo medi na 25.4% [In 2019, AGMK increased copper production by 25.4%]: Sputniknews.ru, January 28. (Accessed January 14, 2021, at <https://sputniknews.ru/economy/20200128/13319744/AGMK-v-2019-godu-uvelichil-proizvodstvo-medi-na-254.html>.) [In Russian.]
- State Committee of the Republic of Uzbekistan on Statistics, 2021a, Foreign economic activity: State Committee of the Republic of Uzbekistan on Statistics. (Accessed January 14, 2021, via <https://www.stat.uz/en/official-statistics/merchandise-trade>.)
- State Committee of the Republic of Uzbekistan on Statistics, 2021b, Industry: State Committee of the Republic of Uzbekistan on Statistics. (Accessed January 14, 2021, via <https://www.stat.uz/en/official-statistics/industry>.)
- State Committee of the Republic of Uzbekistan on Statistics, 2021c, National accounts: State Committee of the Republic of Uzbekistan on Statistics. (Accessed January 14, 2021, via <https://www.stat.uz/en/official-statistics/national-accounts>.)
- Stroyka.uz, 2017, Nachinayetsya osvoeniye krupnogo mestorozhdeniya zheleznoy rudy Tebinbulak [Development of a large iron ore Tebinbulak deposit begins]: Stroyka.uz, December 15. (Accessed November 28, 2018, at [https://stroyka.uz/arch/publish/doc/text/137736\\_nachinaetsya\\_osvoenie\\_krupnogo\\_mestorojdeniya\\_jeleznoy\\_rudy\\_tebinbulak](https://stroyka.uz/arch/publish/doc/text/137736_nachinaetsya_osvoenie_krupnogo_mestorojdeniya_jeleznoy_rudy_tebinbulak).) [In Russian.]
- U.S. Energy Information Administration, 2019, Uzbekistan: U.S. Energy Information Administration, July. (Accessed November 28, 2020, at <https://www.eia.gov/international/overview/country/UZB>.)
- Uzdaily.com, 2019a, Odobrena Gosudarstvennaya programma razvitiya i vosproizvodstva mineral'no-syryevoy bazy na 2020–2021 gody [A Government program for development and replenishment of mineral reserves for 2020–2021 is approved]: Uzdaily.com, July 24. (Accessed January 14, 2021, at <http://www.uzdaily.com/ru/post/45111>.) [In Russian.]
- Uzdaily.com, 2019b, Strategiya razvitiya. Tashkentskiy metallurgicheskii zavod nameren stat' odnim iz promyshlennykh liderov regiona [Development strategy. Tashkent metallurgical plant intends to become one of the industry leaders in the region]: Uzdaily.com, December 4. (Accessed January 14, 2021, at <http://www.uzdaily.com/ru/post/48016>.) [In Russian.]
- Uzdaily.uz, 2019a, B2Gold izuchit tri perspektivnyye ploshadi v Navoiyskoy oblasti [B2Gold will explore three perspective areas in Navoiy Viloyati]: Uzdaily.uz, March 11. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/42322>.) [In Russian.]
- Uzdaily.uz, 2019b, Budut prinyaty меры po povysheniyu effektivnosti NGMK [NGMK will take measures to increase its effectiveness]: Uzdaily.uz, January 11. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/41064>.) [In Russian.]
- Uzdaily.uz, 2019c, NGMK budet reorganizovan [NGMK will be reorganized]: Uzdaily.uz, January 19. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/41196>.) [In Russian.]
- Uzdaily.uz, 2019d, Podpisano soglasheniye o provedenii geologicheskogo izucheniya perspektivnykh ploshadey na zoloto i vol'fram [An agreement about geologic exploration of areas prospective for gold and tungsten is signed]: Uzdaily.uz, February 14. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/41716>.) [In Russian.]
- Uzdaily.uz, 2019e, TMZ budet odnim iz samykh zelenykh predpriyatiy respubliky-eksperty [TMZ will be one of the greenest plants in the republic—Experts]: Uzdaily.uz, July 4. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/44719>.) [In Russian.]

- Uzdaily.uz, 2019f, Uzbekistan eksportiroval zolota na \$3,94 mlrd [Uzbekistan exported \$3.94 billion worth of gold]: Uzdaily.uz, September 18. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/46194>.) [In Russian.]
- Uzdaily.uz, 2019g, Uzbekistan v 2019 godu planiruyet eksportirovat' 80 tonn zolota [In 2019, Uzbekistan plans to export 80 tons of gold]: Uzdailt.uz, April 2. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/42795>.) [In Russian.]
- Uzdaily.uz, 2019h, V Tashkente gotovyat k zapusku novyi metallurgicheskiy zavod [A new metallurgical plant in Tashkent prepares for opening]: Uzdaily.uz, February 18. (Accessed January 14, 2021, at <http://www.uzdaily.com/ru/post/41819>.) [In Russian.]
- Uzdaily.uz, 2019i, V Uzbekistane budet sozdano SP s kompaniyey Orano Mining [Uzbekistan will create a JV with Orano Mining]: Uzdaily.uz, September 5. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/45888>.) [In Russian.]
- Uzdaily.uz, 2019j, V Uzbekistane planiruyetsya postroit' gorno-metallurgicheskiy complex za \$1,3 mlrd [Uzbekistan plans to build a new \$1.3 billion mining and metallurgical complex]: Uzdaily.uz, September 10. (Accessed January 14, 2021, at <https://www.uzdaily.uz/ru/post/45995>.) [In Russian.]
- Uzsm.uz, 2019, Opredeley zadachi po razvitiyu sfery geologii na urovne mezhdunarodnykh standartov [Tasks for developing geology at the level of international standards are determined]: Uzsm.uz, July 1. (Accessed January 14, 2021, at [https://uzsm.uz/ru/press\\_center/uzb\\_news/opredeleny-zadachi-po-razvitiyu-sfery-geologii-na-urovne-mezhdunarodnykh-standartov/](https://uzsm.uz/ru/press_center/uzb_news/opredeleny-zadachi-po-razvitiyu-sfery-geologii-na-urovne-mezhdunarodnykh-standartov/).) [In Russian.]
- World Nuclear Association, 2020, Uranium production figures, 2010–2019: World Nuclear Association. (Accessed November 19, 2020, at <https://www.world-nuclear.org/information-library/facts-and-figures/uranium-production-figures.aspx>.)
- Xs.uz, 2019, Na baze Tebinbulaka budet realizovan krupnyi projekt otechestvennoy promyshlennosti [A large domestic industrial project will be realized at Tebinbulak]: Xs.uz, August 21. (Accessed January 14, 2021, at <https://xs.uz/ru/post/na-baze-tebinbulaka-budet-realizovan-krupnyj-proekt-otechestvennoj-promyshlennosti>.) [In Russian.]

TABLE 1  
UZBEKISTAN: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

| Commodity <sup>2</sup>                     | 2015  | 2016                   | 2017                   | 2018                   | 2019                   |
|--|---|------------------------|------------------------|------------------------|------------------------|
| <b>METALS</b>                              |   |                        |                        |                        |                        |
| Cadmium, refinery, primary                 | 220 <sup>e</sup>                              | 300 <sup>e</sup>       | 470                    | 375                    | 400 <sup>e</sup>       |
| Copper:                                    |   |                        |                        |                        |                        |
| Mine, concentrates, Cu content             | 101,000 <sup>e</sup>                          | 120,000 <sup>r,e</sup> | 140,100 <sup>r</sup>   | 141,200 <sup>r</sup>   | 140,000 <sup>e</sup>   |
| Smelter, primary <sup>e</sup>              | 101,000                                       | 101,000                | 101,000                | 115,000 <sup>r</sup>   | 145,000                |
| Refinery, metal, primary                   | 101,000 <sup>e</sup>                          | 101,000 <sup>e</sup>   | 101,000 <sup>e</sup>   | 117,000 <sup>r</sup>   | 147,250                |
| Gold, mine, Au content                     | kilograms 88,000 <sup>e</sup>                 | 89,000 <sup>e</sup>    | 89,900                 | 92,716                 | 88,500                 |
| Iron and steel, steel:                     |   |                        |                        |                        |                        |
| Raw steel                                  | 643,000                                       | 654,000                | 657,000                | 646,000 <sup>r</sup>   | 625,000                |
| Products, rolled                           | 680,000                                       | 715,000 <sup>e</sup>   | 731,000                | 730,000 <sup>e</sup>   | 730,000                |
| Lead, mine, Pb content <sup>e</sup>        | 3,000   | 5,000                  | 5,000                  | 30,000                 | 35,000                 |
| Molybdenum, mine, Mo content               | 450 <sup>e</sup>                              | 205                    | 203                    | 200 <sup>e</sup>       | 200 <sup>e</sup>       |
| Rhenium, Re content                        | kilograms 1,000 <sup>e</sup>                  | 466                    | 460                    | 460 <sup>e</sup>       | 460 <sup>e</sup>       |
| Silicon, metal <sup>e</sup>                | 5,000   | 3,000                  | 3,000                  | -- <sup>r</sup>        | --                     |
| Silver, mine, Ag content                   | kilograms 230,000 <sup>e</sup>                | 230,000 <sup>e</sup>   | 232,300                | 223,900                | 189,000                |
| Tungsten, metal                            | 80 <sup>e</sup>                               | 129                    | --                     | --                     | --                     |
| Zinc:                                      |   |                        |                        |                        |                        |
| Mine, Zn content <sup>e</sup>              | 25,000 <sup>r</sup>                           | 30,000                 | 30,000                 | 30,000                 | 30,000                 |
| Smelter, primary                           | 73,000 <sup>e</sup>                           | 85,000 <sup>e</sup>    | 47,180 <sup>r</sup>    | 38,400 <sup>r</sup>    | 40,000 <sup>e</sup>    |
| <b>INDUSTRIAL MINERALS</b>                 |   |                        |                        |                        |                        |
| Cement, hydraulic                          | thousand metric tons 8,350 <sup>r</sup>       | 8,470 <sup>r</sup>     | 8,930 <sup>r</sup>     | 9,200 <sup>r</sup>     | 10,990                 |
| Clay:                                      |   |                        |                        |                        |                        |
| Bentonite <sup>e</sup>                     | 26,000  | 26,000                 | 26,000                 | 26,000                 | 25,000                 |
| Kaolin                                     | 3,200,000 <sup>e</sup>                        | 3,200,000 <sup>e</sup> | 3,519,000              | 4,688,700              | 4,500,000 <sup>e</sup> |
| Graphite, crystalline flake <sup>e</sup>   | 100   | 100                    | 100                    | 100                    | 100                    |
| Gypsum, mine                               | 1,100,000 <sup>e</sup>                        | 1,100,000 <sup>e</sup> | 1,117,200              | 1,292,000              | 1,300,000 <sup>e</sup> |
| Nitrogen, ammonia, N content               | 1,100,000                                     | 1,100,000              | 1,100,000 <sup>r</sup> | 1,100,000 <sup>r</sup> | 1,100,000              |
| Phosphate rock: <sup>e</sup>               |   |                        |                        |                        |                        |
| Gross weight                               | 800,000                                       | 800,000                | 900,000                | 900,000                | 900,000                |
| P <sub>2</sub> O <sub>5</sub> content      | 136,000                                       | 136,000                | 150,000                | 150,000                | 150,000                |
| Potash, K <sub>2</sub> O content           | 158,000                                       | 138,000                | 189,500 <sup>r</sup>   | 215,900 <sup>r</sup>   | 220,000 <sup>e</sup>   |
| Soda ash, synthetic <sup>e</sup>           | 90,000  | 90,000                 | 90,000                 | 90,000                 | 95,000                 |
| Sulfur: <sup>e</sup>                       |   |                        |                        |                        |                        |
| Byproduct, S content:                      |   |                        |                        |                        |                        |
| Metallurgy                                 | 125,000                                       | 130,000                | 130,000                | 130,000                | 130,000                |
| Natural gas and petroleum                  | 340,000                                       | 350,000                | 340,000                | 340,000                | 330,000                |
| Compounds, sulfuric acid                   | 900,000                                       | 900,000                | 850,000                | 850,000                | 800,000                |
| Vermiculite                                | 1,000 <sup>e</sup>                            | 1,855                  | 1,534                  | 2,756                  | 2,800 <sup>e</sup>     |
| <b>MINERAL FUELS AND RELATED MATERIALS</b> |   |                        |                        |                        |                        |
| Coal:                                      |   |                        |                        |                        |                        |
| Bituminous                                 | 100,000 <sup>r,e</sup>                        | 100,000 <sup>r,e</sup> | 123,500 <sup>r</sup>   | 283,100 <sup>r</sup>   | 280,000 <sup>e</sup>   |
| Lignite                                    | 3,700,000                                     | 3,900,000              | 3,343,700 <sup>r</sup> | 2,316,900 <sup>r</sup> | 2,300,000 <sup>e</sup> |
| Natural gas, dry basis                     | million cubic meters 57,700                   | 56,100                 | 56,417                 | 60,400 <sup>r</sup>    | 59,460                 |
| Petroleum:                                 |   |                        |                        |                        |                        |
| Crude <sup>3</sup>                         | thousand 42-gallon barrels 6,300 <sup>e</sup> | 5,500                  | 5,880                  | 5,450                  | 5,110                  |
| Refinery <sup>e</sup>                      | do. 38,400                                    | 38,400                 | 38,000                 | 39,500                 | 40,000                 |
| Uranium, mine, U content                   | 3,450   | 3,450 <sup>e</sup>     | 3,577 <sup>r</sup>     | 3,331                  | 3,500                  |

<sup>e</sup>Estimated. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through January 6, 2021. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

<sup>2</sup>In addition to the commodities listed, aluminum, cesium, caustic soda, feldspar, ferroalloys, fluorspar, iodine, iron ore, lime, lithium, manganese, mined tungsten, natural gas liquids, rubidium, selenium, and tellurium may have been produced, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Includes gas condensate.



TABLE 2  
 UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2019<sup>1</sup>

(Metric tons unless otherwise specified)

| Commodity                                 | Major operating companies, main facilities, or deposits                            | Location or deposit names  | Annual capacity <sup>e</sup>  |        |
|---|--|--|---|--------|
| Cement                                    | OAQ Kyzylkumcement   | Navoiy City  | 3,100,000   |        |
| Do.                                       | OAQ Akhangarancement (Eurocement Group)  | Akhangaran City, Sirdaryo Viloyati   | 2,200,000   |        |
| Do.                                       | OAQ Bekabadcement  | Bekabad City, Toshkent Viloyati  | 1,300,000   |        |
| Do.                                       | Sherabad Cement Plant (Almalyk GMK <sup>2</sup> )                                  | Surxondaryo Viloyati   | 1,500,000   |        |
| Do.                                       | OOO Surkhantsementinvest Plant   | Surkhandar'o Viloyati  | 1,100,000   |        |
| Do.                                       | OAQ Kuvasaycement  | Kuvasay City, Farg'ona Viloyati  | 1,080,000   |        |
| Do.                                       | Jizzakh Cement Plant (Almalyk GMK <sup>2</sup> )                                   | Jizzax Viloyati  | 1,000,000 <sup>3</sup>  |        |
| Cesium, lithium, rubidium                 | Shava-Say deposit  | NA   | NA  |        |
| Clay:                                     |  |  |   |        |
| Bentonite                                 | Arab-Dasht and Khau dag deposits   | NA   | NA  |        |
| Kaolin                                    | Angren deposit   | Toshkent Viloyati  | NA  |        |
| Coal:                                     |  |  |   |        |
| Bituminous                                | OAQ Shargun'kumir and OAQ Ero stigaz   | Baysun and Shargun deposits, Surxondaryo Viloyati  | NA  |        |
| Lignite                                   | OAQ Uzbekugol and OAQ Apartak  | Angren deposit, Toshkent Viloyati  | 4,500,000   |        |
| Copper:                                   |  |  |   |        |
| Mine output, Cu content                   | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)          | Dal'neye (Eshlik), Kalmakyr, and Sary-Cheku deposits, Toshkent Viloyati  | 150,000   |        |
| Concentrate                               | Almalyk polymetallic beneficiation plant (Almalyk GMK <sup>2</sup> )               | Qashqadaryo Viloyati   | NA  |        |
| Metal                                     | Almalyk integrated smelter and refinery (Almalyk GMK <sup>2</sup> )                | Olmalik  | 130,000   |        |
| Feldspar                                  | Karichasayskoye and other deposits   | Deposits in Samarqand Viloyati, Toshkent Viloyati, and Qoraqalpog'iston Respublikasi   | 120,000 <sup>4</sup>  |        |
| Fertilizers (nitrogen, phosphate, potash) | Ammophos production association  | Olmalik  | NA  |        |
| Do.                                       | Azot production association  | Farg'ona area  | NA  |        |
| Do.                                       | Elektrokhimprom production association   | Chirchiq   | NA  |        |
| Do.                                       | Kokand superphosphate plant  | Qo'qon   | NA  |        |
| Do.                                       | Naviazot production association  | Navoiy Viloyati  | NA  |        |
| Do.                                       | Samarqand chemicals plant  | Samarqand Viloyati   | NA  |        |
| Fluorspar                                 | Agata-Chibargata, Aurakhmat, Kengutan, Kyzylbaur, Naugarzan, and Nugisken deposits | East of Toshkent Viloyati  | 150,000   |        |
| Do.                                       | Syrpatash deposit  | Namangan Viloyati  | NA  |        |
| Gold                                      |  |  |   |        |
| Mine, Au content                          | kilograms  | Various facilities and deposits, which include: Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)  | Of which: Dal'neye (Eshlik), Kalmakyr, and Sary-Cheku deposits, Toshkent Viloyati | 20,000 |
| Do.                                       | do.  | Navoi mining and metallurgical complex (Navoi GMK) (Government, 100%)<br>Adzhi-Bugutty, Amantaytau, Balpantau, Bulutkan, Daugyztau, Donguz-Tau, Kokpatas, Muruntau, and Taurbay deposits<br>Kochbulak and Kyzyl-Al'ma-Say deposits | Central Qizilqum region<br>Toshkent Viloyati                                      | 80,000 |
| Refined                                   |  | Navoi, Uchkuduk, Zarmitan, and Zarafshan gold refineries   | Navoiy Viloyati   | NA     |
| Graphite                                  |  | Tadzhi-Kazgan deposit  | do.   | NA     |
| Iron ore                                  |  | Syurenata deposit  | Toshkent Viloyati   | NA     |
| Lead, mine output, Pb content             |  | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)  | Uch-Kulach deposit in Jizzax Viloyati, Khandiza deposit in Qashqadaryo Viloyati   | 40,000 |
| Lime                                      |  | do.  | Toshkent Viloyati   | NA     |
| Manganese                                 |  | Dautashskoye deposit   | Qashqadaryo Viloyati  | 40,000 |
| Molybdenum:                               |  |  |   |        |
| Mine output, Mo content                   |  | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)  | Kalmakyr and Sary-Cheku deposits, Toshkent Viloyati                               | 500    |
| Metal                                     |  | Uzbek refractory and hard metals plant (UzKTZhM) (Almalyk GMK <sup>2</sup> ) (Government, 100%)  | City of Chirchiq  | NA     |

See footnotes at end of table.

TABLE 2—Continued  
 UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2019<sup>1</sup>

(Metric tons unless otherwise specified)

| Commodity               | Major operating companies, main facilities, or deposits | Location or deposit names   | Annual capacity <sup>e</sup>   |                     |
|-------------------------|---|---|--|---------------------|
| Natural gas             | million cubic meters                                    | Gazli, Kandym, Khauzak, Kokdumalak, Pamuk, and Shurtan-Say deposits (major)                                 | Amu-Dar'ya Basin, Muborak region   | 70,000 <sup>4</sup> |
| Do.                     |   | Itera/PAO Lukoil (Russia), OAO Uzbekneftegaz  | Kandym field   | NA                  |
| Natural gas condensate  |   | Trinity Energy group  | Ustyurt Platosi region   | NA                  |
| Natural gas liquids     |   | Shurtan gas-chemical complex  | Shurtan-Say deposit, Qashqadaryo Viloyati  | 137,000             |
| Natural gas processing  | million cubic meters                                    | Mubarek gas processing plant  | Muborak region   | 40,000              |
| <b>Petroleum:</b>       |   |   |  |                     |
| Crude                   |   | Kokdumalak and Mingbulak deposits (major)   | Qashqadaryo and Namangan Viloyati  | NA <sup>4</sup>     |
| Refinery products       |   | Fergana oil refinery  | Farg'ona area  | 8,800,000           |
| Do.                     |   | Bukhara oil refinery  | Buxoro area  | 2,500,000           |
| Do.                     |   | Alty-Aryk oil refinery  | Alty-Aryk area   | NA                  |
| Phosphate rock          |   | Kyzyl Kum complex   | Dzheroy-Sardarin Moroccan type; Karaktay, Severnyy, and Dzhetyntau deposits                            | NA                  |
| Potash                  |   | Dekhkanabad potash fertilizer plant   | Tubegetan Mine, Qashqadaryo Viloyati   | 200,000             |
| Rhenium                 |   | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)                                   | Toshkent Viloyati  | NA                  |
| Selenium                |   | do.   | do.  | NA                  |
| Silver                  |   | do.   | do.  | NA                  |
| Do.                     |   | Kosmanachi, Okzhetpes, and Vysokovoltnoye deposits  | Namangan Viloyati  | NA                  |
| <b>Steel:</b>           |   |   |  |                     |
| Raw                     |   | AO Uzmetkombinat  | Bekobod region   | 1,100,000           |
| Rolled                  |   | do  | do   | NA                  |
| Sulfur                  |   | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)                                   | Sulfuric acid plant, Toshkent Viloyati   | NA                  |
| Do.                     |   | Mubarek gas processing plant complex  | Muborak region   | 400,000             |
| Tellurium               |   | Almalyk mining and metallurgical complex (Almalyk GMK) (Government, 100%)                                   | Toshkent Viloyati  | NA                  |
| <b>Tungsten:</b>        |   |   |  |                     |
| Mine output, W content  |   | Deposits:<br>Koytash deposit<br>Ingichka and Lyangar deposits<br>Sautbay wolframite deposit<br>Ugat deposit | Locations:<br>Northeastern Uzbekistan<br>Zirabulak Mountains<br>Qizilqum region<br>Northern Uzbekistan | 1,200 <sup>4</sup>  |
| Metal                   |   | Uzbek refractory and hard metals complex (UzKTZhM) (Almalyk GMK <sup>2</sup> ) (Government, 100%)           | Chirchiq, Toshkent Viloyati  | NA                  |
| Uranium, U content      |   | Navoi mining and metallurgical complex (Navoi GMK) (Government, 100%)                                       | Navoiy (GMZ-1), Uchkuduk (GMZ-3)<br>Zarafshan (GMZ-2), Zarmitan (GMZ-4)                                | 3,600               |
| Vermiculite             | cubic meters  | Tebin-Bulak deposit   | NA   | 25,000              |
| <b>Zinc:</b>            |   |   |  |                     |
| Mine output, Zn content |   | Almalyk mining and metallurgical complex (Almalyk GMK)  | Khandiza deposit, Qashqadaryo Viloyati and Uch-Kulach deposit, Jizzax Viloyati                         | NA                  |
| Concentrate, Zn content |   | Almalyk polymetallic beneficiation plant (Almalyk GMK <sup>2</sup> )  | Qashqadaryo Viloyati   | 60,000              |
| Metal                   |   | do.   | do.  | 80,000              |

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.

<sup>1</sup>Many 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.

<sup>2</sup>Mining and metallurgical complex.

<sup>3</sup>Capacity includes both gray and white cement.

<sup>4</sup>Capacity estimates are totals for all enterprises that produce that commodity.