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The Mineral Industry of Uzbekistan

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Uzbekistan has substantial resources, which include more than 1,800 known mineral deposits. The most notable minerals are gold and uranium. In addition, Uzbekistan was one of the leading producers of iodine, kaolin, molybdenum, nitrogen, oil and natural gas, and sulfur. Other significant minerals produced included copper, fluorspar, gypsum, silver, and zinc. There are identified resources of many mineral commodities, such as potash and lithium, that were not being mined. In previous decades, mineral production was limited by the country's inefficient infrastructure, remote location with respect to the world markets, and tight regulatory environment that did not attract sufficient foreign investment. In 2011, many efforts were made to increase the country's mineral production (Angulo, 2012; Apodaca, 2012a, b; George, 2012; Polyak, 2012; U.S. Central Intelligence Agency, 2012; U.S. Department of State, 2012; U.S. Energy Information Administration, 2012; Virta, 2012).

Minerals in the National Economy

In 2011, Uzbekistan's real gross domestic product (GDP) increased by 8.3% to 77,750.6 billion soums ($45.36 billion).[1] The value of exports increased by 15.4% compared with that of 2010, and exports were reported to be valued at $15 billion. The main export commodities were automobiles, cotton, ferrous and nonferrous metals, gold, mineral fertilizers, oil and gas, and textiles. The country's main export partners were Russia, which received 20.9% of Uzbekistan's exports, Turkey (17.1%), China (14.7%), Kazakhstan (10.3%), and Bangladesh (8.8%). The value of imports increased by 14.5% compared with that of 2010 to $10.5 billion. The main import commodities were chemicals, ferrous and nonferrous metals, food products, and machinery and equipment. The major import partners were Russia, which supplied 21.4% of Uzbekistan's imports, the Republic of Korea (19.1%), China (15.1%), Germany (7.4%), and Kazakhstan (5.6%) (State Committee of the Republic of Uzbekistan on Statistics, 2012).

In 2011, the share of industrial production in the GDP was 53.6%. The main industries were (as a percentage of the value produced by all industries) the fuel industry (17.5%), machine building and metal processing (16.1%), food processing (14.0%), textile manufacturing (13.5%), nonferrous mining and metallurgy (10.4%), electric power production (8.0%), the chemical sector (5.5%), and construction material manufacturing (5.3%) (State Committee of the Republic of Uzbekistan on Statistics, 2012; U.S. Central Intelligence Agency, 2012; U.S. Department of State, 2012).

[1]Where necessary, Uzbekistani soums (UZS) were converted to U.S. dollars (US$) at the average annual rate 1,714.1UZS=US$1.00 for 2011.

Production

Reported data on the production of most minerals were not available. The estimated production volumes in table 1 were constructed based on a combination of news reports, producer data, and past production levels.

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Copper.—The only producer of copper in Uzbekistan was the Almalyk mining and metallurgical complex (Almalyk GMK), which was located in Toshkent Province (Toshkent Viloyati). Two large copper porphyry deposits, the Kalmakyr and the Sary-Cheku deposits, were the main resources for the mining of copper. An additional copper deposit, Dal'nee, was on reserve. 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 (Almalyk Mining-Metallurgical Complex, 2012).

In November 2011, the Almalyk GMK completed the first stage of reconstruction and expansion of its Kalmakyr Mine. The works started in 2009 and included the purchase of mining and transportation equipment and reconstruction of railroad tracks at the mine. The cost of the first stage was $78.6 million. The second stage of reconstruction was to be completed by the end of 2013 and was to include overburden removal at some sections of the mine. The cost of the second stage was expected to be $43.8 million. Once the reconstruction is completed, the mine capacity will increase to 30 million metric tons per year (Mt/yr) of ore from 27 Mt/yr (12.uz, 2012).

In January 2011, the Almalyk GMK opened a new polymetallic beneficiation plant in Qashqadaryo Viloyati that would process ores from the Khandiza Mine. The plant would produce 60,000 metric tons per year (t/yr) of zinc concentrate, 20 t/yr of lead concentrate, and 5 t/yr of copper concentrate. The total cost of the beneficiation plant was $147 million; it was expected to reach its projected capacity by 2013 (Caspionet.kz, 2011).

In July 2011, Rio Tinto Ltd. of the United Kingdom announced its plans to start copper exploration of the Gava property in the Namangan Viloyati. The company had applied for an exploration license with the State Geology and Mineral Resources Committee (Goskomgeo). Rio Tinto planned to spend about $1 million on exploration activities and, if positive results were received, was prepared to invest up to $100 million in the project. The exploration license would have a 5-year duration (Interfax.com, 2011).

Gold.—Uzbekistan's significant reserves of gold were estimated to total 5,300 metric tons (t). According to Goskomgeo, the country had 33 primary gold deposits. The main gold producers of the country were two Government-owned mining and metallurgical complexes—the Almalyk GMK and the Navoi mining and metallurgical complex (Navoi GMK). The Muruntau deposit in the Central Qizilqum region was thought to be unique in the world because of the high quality of its ores and the relatively low extraction costs. Another prospective gold deposit, the Tamdybulak, is located 25 kilometers north of Muruntau (Almalyk Mining-Metallurgical Complex, 2012; Navoi Mining and Metallurgical Combinat, 2012).

The Navoi GMK's share in 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. Starting in February 2011, the Navoi GMK introduced a new ultra-steep conveyer and ore-transporting complex, which was believed to be the largest such system in the world. The conveyer was 270 meters high and had a grade of 37 degrees; its annual capacity was 14 Mt/yr. The use of the ultra-steep conveyer allowed for an increase in the depth of the mine and reduced other transportation costs at the mine. The total cost savings from the new conveyer system was expected to be $1.4 million per year (MinerJob.ru, 2011; RosInvest.com, 2011).

In December 2011, the Almalyk GMK obtained a $15 million credit from the Fund for Reconstruction and Development of Uzbekistan (FRRU) for building a new underground mine at the Kairagach deposit in Toshkent Viloyati. The total project cost was $48.4 million, and the mine was expected to be completed in 2 years. The total capacity of the new mine was expected to be 80,000 t/yr of ore. Another gold project underway at the Almalyk GMK was the construction of an underground mine at the Samarchuk deposit; the mine's capacity upon completion was projected to be 200,000 t/yr of ore. Once those two projects are completed, the Almalyk GMK would likely be able to increase its annual gold production by between 25% and 30% (Tetralab.ru, 2011).

Industrial Minerals

Cement.—In 2011, Uzbekistan's production of cement decreased by 1.5% compared with that of 2010 to 6.698 million metric tons (Mt). As of 2011, Uzbekistan had six cement plants with a combined annual capacity of about 7 Mt/yr. The three largest of them were OAO Qyzylkumcement, which had a capacity of 3.15 Mt/yr, OAO Ahangarancement (1.74 Mt/yr), and OAO Kuvasaycement (1.1 Mt/yr) (Azizov, 2012).

In 2012, the Almalyk GMK and Dal Teknik Makina Ticaret Ve Sanayi A.S. of Turkey signed an agreement to build a new cement plant in Jizzax Viloyati. The plant would have the capacity to produce 350,000 t/yr of white cement and 760,000 t/yr of regular portland cement and would cost $114.2 million to build. The project was to be financed by a $74.2 million loan from the FRRU, and the rest of the financing would come from the Almalyk GMK's own funds. The Government of Uzbekistan offered customs and tax benefits to both partners of the project. When completed, the plant was expected to completely satisfy the Almalyk GMK's needs for cement, and about 200,000 t/yr of cement would be sold. The project was expected to be completed in 2012 (Azizov, 2012; Vestikavkaza.ru, 2012).

Mineral Fuels and Related Materials

Coal.—In 2011, coal production in Uzbekistan increased by 16.5% compared with that of 2010 to 3.844 Mt. Uzbekistan's resources of coal were estimated to be 1,833 Mt, including 46.3 Mt of bituminous coal. In addition, undiscovered resources of coal in Uzbekistan amounted to an additional 323 Mt. As of 2011, coal mining was conducted at three main deposits—the Angren lignite deposit and the Shargun and the Baisun bituminous coal deposits. In 2011, four companies, in the order of production volume, produced coal in Uzbekistan—OAO Uzbekugol, OAO Apartak, OAO Shargunkumir, and OAO Erostigaz (MinerJob.ru, 2012).

As of 2011, coal made up only about 3% of the energy balance of the country. In recent years, the Government had been trying to increase coal production with the goal of exporting some of the domestically produced hydrocarbons that were previously used for domestic needs. In particular, by 2014, the Government planned to increase lignite production to 6.4 Mt/yr. The main investment projects underway were a modernization and capacity expansion of the mine owned by OAO Shargunkumir to 900,000 t/yr and the second stage of reconstruction of the Angren Mine, which would increase coal production at the mine to 5.1 Mt/yr (Gazeta.uz, 2012).

Natural Gas and Petroleum.—Uzbekistan had significant hydrocarbon resources and was one of only a few countries in the region that were not dependent on a foreign supply of energy. The country had 171 discovered oil and natural gas fields, 51 of which produced oil and 17 of which produced gas condensate. Because of aging production equipment, however, oil production at existing facilities had been decreasing since 2003, and the currently producing fields were being rapidly depleted. The Bukhara-Khiva region in southwestern Uzbekistan accounted for about 70% of the country's oil production. The second largest was the Fergana region, which contains about 20% of Uzbekistan's oilfields. Uzbekistan signed several production-sharing agreements with foreign oil companies to refurbish existing fields and develop new basins. Two of these major foreign companies were Chinese National Petroleum Corp. (CNPC) of China and OAO Lukoil of Russia (U.S. Energy Information Administration, 2012).

In 2011, the country continued its efforts to improve its hydrocarbon processing capabilities. National Holding Company Uzbekneftegaz was planning to invest $385 million in construction of new facilities for converting natural gas to oil products using gas-to-liquids (GTL) technology. The projects were to include increased GTL capacity at the Mubarek gas processing plant in Qashqadaryo Viloyati and modernization of gasification systems at the Bukhara and the Fergana refineries. Production of liquefied gas in Uzbekistan was expected to increase 2.3 times to 857,000 t from the production level in 2011 (Regnum.ru, 2012a, b).

Uranium.—The Navoi GMK had monopoly rights for the mining, beneficiation, and export of uranium as

uranium oxide (U_3O_8). The Navoi GMK had three mining units and Hydrometallurgical Plant #1 (GMZ–1) that serviced the uranium line of business. Navoi GMK's uranium resources consisted of 20 deposits and 10 additional prospective areas. According to Goskomgeo, explored and evaluated resources of uranium in Uzbekistan amounted to 185,800 t, out of which 138,800 t was of sandstone type, and the other 47,000 t was of black shale type (Atominfo.ru, 2011; Navoi Mining and Metallurgical Combinat, 2012).

In August 2009, China Guangdong Nuclear Power Group (CGNPC) Uranium Resources Co. of China and Goskomgeo formed a joint venture named Uz-China Uran with charter capital of $4.6 million to conduct exploration of the Boztaus plateau in the Central Qizilqum region. In 2010 and 2011, the venture discovered several uranium deposits; more detailed information had not been disclosed. According to Goskomgeo, the undiscovered resources of uranium in the Boztaus Plateau were estimated to be 5,500 t; all deposits at the plateau were of the black shale type. Following the exploration, three new uranium deposits of black shale type—Jantuar, Koscheka, and Rudnoye—were added to the resource base of the joint venture (Atominfo.ru, 2011).

Outlook

In the past several years, Uzbekistan has intensified its efforts to grow the country's industry, including manufacturing and, especially, automobile production, chemical production, and machine building. In 2011, the share of the country's GDP produced by industrial enterprises was greater than 50%. Increased industrial production and higher living standards in the country are expected eventually to increase the demand for energy goods. Uzbekistan will likely seek to increase its production and export of hydrocarbons during the next decade by expanding its pipelines and modernizing its production facilities and infrastructure. The Government is also likely to continue to form partnerships with Asian and Russian firms to help achieve this objective. It also plans to mine coal for domestic heating and electricity production.

The country is also expected to increase its production of copper, gold, and uranium. In the past several years, Uzbekistan has made concerted efforts to modernize its Almalyk and Navoi GMKs and to ramp up their production. Barring unforeseen events in the world economy, therefore, Uzbekistan's mineral production is expected to increase during this decade.

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TABLE 1
UZBEKISTAN: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2007	2008	2009	2010	2011
METALS						
Aluminum, secondary[e]		3,000	3,000	3,000	3,000	3,000
Copper:						
Mine output, Cu content		95,000	95,000	95,000	90,000	91,500 [3]
Metal:[e]						
Blister		92,000	92,000	92,000	92,000	92,000
Refined		89,655	71,000	80,000	90,000	91,500 [3]
Gold[e]	kilograms	85,000	85,000	90,000	90,000	91,000
Molybdenum, mine output, Mo content[e]		600	500	500	500	550 [e]
Rhenium[e]	kilograms	4,800	4,800 [r]	4,800	4,800	5,400
Silver, mine output	do.	77,759	74,648 [r]	52,876	59,097	60,000
Steel:						
Crude		740,000	685,700 [r]	716,400	731,373 [r]	746,000 [3]
Rolled		700,000	640,000	670,000	691,910 [r]	709,900 [3]
Zinc, metal, smelter, primary		71,800	70,445	40,000	40,000 [e]	50,000 [e]
INDUSTRIAL MINERALS						
Cement[e]		6,500,000	6,600,000	6,850,000	6,800,000 [r]	6,698,000 [3]
Clays:[e]						
Bentonite		15,000	15,000	15,000	15,000	15,000
Kaolin		5,500,000	5,500,000 [r]	5,500,000	5,500,000	7,000,000
Feldspar[e]		4,300	4,300	4,300	4,300	4,300
Fluorspar[e]		90,000	90,000	90,000	90,000	90,000
Graphite[e]		60	60	60	60	60
Gypsum[e]		80,000	80,000	80,000	80,000	90,000
Iodine[e]	kilograms	2,000	2,000	2,000	2,000	2,000
Nitrogen, N content of ammonia[e]		1,000,000	1,000,000	1,000,000	1,344,029 [r]	1,294,300 [3]
Phosphate rock:[e]						
Gross weight		600,000	600,000	600,000	800,000	800,000
P_2O_5 content		140,000	140,000	140,000	187,000	187,000
Sulfur:[e]						
Byproduct:						
Metallurgy		170,000	170,000	170,000	170,000	170,000
Natural gas and petroleum		350,000	350,000	350,000	350,000	350,000
Total		520,000	520,000	520,000	520,000	520,000
Sulfuric acid		600,000	600,000	1,023,800	1,192,600 [r]	1,200,000 [e]
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous		160,000	198,000	101,000	198,000	244,000
Lignite		3,282,000	3,092,000	3,553,000	3,102,000	3,600,000
Total		3,442,000	3,290,000	3,654,000	3,300,000	3,844,000 [3]
Natural gas, dry	million cubic meters	65,186	67,593	65,000	65,937	63,036
Petroleum:						
Crude:						
In gravimetric units		3,017,000	2,533,000	2,331,000	1,866,000	3,600,000
In volumetric units[e]	42-gallon barrels	21,900,000	18,400,000	16,900,000	13,600,000	26,236,800
Petroleum refinery products:						
In gravimetric units		6,079,000	4,117,000	4,117,000	3,296,000	5,000,000 [e]
In volumetric units	42-gallon barrels	48,873,000	33,100,000	33,100,000	26,480,000	40,165,000
Uranium:						
U content		2,320	2,338	2,429	2,400	2,500 [e]
U_3O_8 content		2,736	2,757	2,865	2,830	2,950

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto.

[1]Table includes data available through October 16, 2012.

[2]In addition to the commodities listed, Uzbekistan is thought to produce a number of other mineral commodities, including cesium, iron ore, lead, lithium, manganese, potash, rubidium, selenium, tellurium, tungsten, and vermiculite, but available information is not adequate to estimate production.

[3]Reported figure.

TABLE 2
UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2011[1, 2]

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity[e]
Bismuth	Ustarassay deposit (depleted)	Chotqol and Kuraminskiy Khrebet regions	NA
Cement	OAO Kyzylkumcement	Navoi City	3,150,000
Do.	OAO Akhangarcement	Sirdaryo Viloyati	1,740,000
Do.	OAO Kuvasaycement	Farg'ona Viloyati	1,100,000
Cesium, lithium, rubidium	Shava-Say deposit	NA	NA
Clays:			
Bentonite	Arab-Dasht and Khaudag deposits	NA	NA
Kaolin	Angren deposit	Angren region	8,000,000
Coal:			
Lignite	OAO Uzbekugol and OAO Apartak	Angren deposit, Toshkent Viloyati	4,500,000
Bituminous	OAO Shargunkumir and OAO Erostigaz	Baysun and Shargun deposits, Surxondaryo Viloyati	700,000 [3]
Copper:			
Mine output, Cu content	Almalyk mining and metallurgical complex	Dal'neye, Kalmakyr, and Sary-Cheku deposits	100,000 [3]
Concentrate	Almalyk polymetallic beneficiation plant	Qashqadaryo Viloyati	5
Metal	Almalyk refinery	Olmaliq	130,000
Diamond	Karashok and Kok-Say deposits	Navoiy Vilolyati	NA
Feldspar	Karichasayskoye and other deposits	Deposits in Samarqand Viloyati, Toshkent Viloyati, and Qoraqalpog'iston Respublikasi	120,000 [3]
Fertilizers	Ammophos production association	Olmaliq	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.	Samarkand chemicals plant	Samarqand	NA
Fluorspar	Agata-Chibargata, Aurakhmat, Kengutan, Kyzylbaur, Naugarzan, and Nugisken deposits	East of Toshkent Viloyati	150,000
Do.	Syrpatash deposit	Namangan Viloyati	NA
Gold kilograms	Adzhi-Bugutty, Amantaytau, Balpantau, Bulutkan, Donguz-Tau, Muruntau, and Taurbay deposits	Central Qizilqum region	85,000 [3]
Do.	Navoi mining and metallurgical complex (Uzbekistan State Committee for Geology and Mineral Resources)	Muruntau deposit	65
Do.	Kochbulak and Kyzyl-Al'ma-Say deposits	Toshkent Viloyati	NA
Do.	Almalyk mining and metallurgical complex	Dalneye, Kalmakyr, and Sary-Cheku deposits	NA
Graphite	Tadzhi-Kazgan deposit	Navoiy Viloyati	NA
Iron ore	Syurenata deposit	Toshkent Viloyati	NA
Lead, mine output, Pb content	Almalyk mining and metallurgical complex	Uch-Kulach deposit in Jizzax Viloyati	40,000 [3]
Manganese	Dautashskoye deposit	Qashqadaryo Viloyati	40,000
Molybdenum:			
Mine output, Mo content	Almalyk mining and metallurgical complex; Kalmakyr and Sary-Cheku deposits	Toshkent Viloyati	900 [3]
Metal	Uzbek refinery and hard metals plant	Chirchiq	NA
Natural gas million cubic meters	Gazli, Kandym, Khauzak, Kokdumalak, Pamuk, and Shurtan-Say deposits (major)	Amu-Dar'ya Basin; Muborak region	70,000 [3]
Do.	Itera/Lukoil (Russia), Uzbekneftegaz JSC	Kan-Dam field	NA
Natural gas condensate	Trinity Energy (United Kingdom)	Ustyurt Platosi region	NA
Natural gas liquids million cubic meters	Mubarek gas processing plant	Muborak region	28,000
Do.	Shurtan gas-chemical complex	Shurtan-Say deposit, Qashqadaryo Viloyati	137,000

See footnotes at end of table.

TABLE 2—Continued
UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2011[1, 2]

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity[e]
Petroleum:			
Crude	Kokdumalak and Mingbulak deposits (major)	NA	9,000,000 [3]
Refinery products	Fergana oil refinery	Farg'ona area	8,800,000
Do.	Bukhara oil refinery	Buxoro area	2,500,000
Phosphate	Kyzyl Kum complex	Dzheroy-Sardarin Moroccan type; Karaktay, Severnyy, and Dzhetymtau deposits	NA
Polyethylene	Shurtan gas-chemical complex	Shurtan-Say deposit, Qashqadaryo Viloyati	125,000
Potash	Tyubegatan deposit	Southern Uzbekistan	NA
Rhenium	Almalyk mining and metallurgical complex	Toshkent Viloyati	NA
Selenium	do.	do.	NA
Silver	do.	do.	NA
Do.	Kosmanachi, Okzhetpes, and Vysokovoltnoye deposits	Namangan Viloyati	NA
Steel, crude	Bekabad steel mill	Bekobod area	1,100,000
Sulfur	Almalyk mining and metallurgical complex	Dalneye, Kalmakyr, and Sary-Cheku deposits	NA
Do.	Mubarek gas processing plant complex	Muborak area	2,000,000
Tellurium	Almalyk mining and metallurgical complex	Toshkent Viloyati	NA
Tungsten:	Deposits:	Locations:	1,200 [3]
Mine output, W content	Koytash deposit	Northeastern Uzbekistan	
	Ingichka and Lyangar deposits	Zirabulak Mountains	
	Ugat deposit	Northern Uzbekistan	
Mine output, WO_3 content (0.49%)	Sautbay wolframite deposit	Qizilqum Region	NA
Metal	Uzbek refractory and hard metals plant	Chirchiq	NA
Uranium, U content	Navoi mining and metallurgical complex	Central Qizilqum Region	3,000
Vermiculite cubic meters	Tebin-Bulak deposit	NA	25,000
Zinc:			
Mine output, Zn content	Almalyk mining and metallurgical complex	Khandiza and Uch-Kulach deposits	NA
Concentrate	Almalyk polymetallic beneficiation plant	Qashqadaryo Viloyati	60,000
Metal	do.	do.	80,000

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

[1]Table includes data and information available through October 15, 2012.

[2]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.

[3]Capacity estimates are totals for all enterprises that produce that commodity.