



# 2007 Minerals Yearbook

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## UZBEKISTAN

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# THE MINERAL INDUSTRY OF UZBEKISTAN

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Although Uzbekistan was a significant regional producer of a number of mineral commodities, including nonferrous metals and natural gas, it was a major world producer of two mineral commodities: gold and uranium. Minerals were extracted from more than 400 mines, open pits, and oil and gas wells. The two leading mineral production enterprises in the country were the Almalyk and the Navoi mining and metallurgical complexes.

## Minerals in the National Economy

Mineral exports are a major source of revenue for Uzbekistan's Government. Gold was Uzbekistan's second ranked foreign-exchange-earning commodity and was unofficially estimated to provide about 20% of the country's export earnings. The country also exported other mineral products, which included mineral fertilizers, natural gas, nonferrous metals (copper and zinc), silver, and uranium (U.S. Department of State, 2008).

## Production

In 2007, production results were mixed; production increases were recorded for some metals, including steel and zinc, but production was estimated to have decreased for copper. Reported data was unavailable at the time this report was written for the production of industrial minerals, but production is estimated to have remained at the 2006 level of output. Production results for mineral fuels were also mixed; production decreased for oil but increased for coal, natural gas, and uranium. Data on mineral production are in table 1.

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

## Commodity Review

### Metals

**Copper.**—The Almalyk mining and metallurgical complex, which was located in a large copper porphyry region, comprised the following: two mining enterprises that mined the Kalmakyr and the Sary-Cheku copper porphyry deposits in Toshkent Province and the Uchkulach lead-zinc-barium deposit in Jizzax Province; two beneficiation plants; and two metallurgical plants (Interfax Russia & CIS Metals and Mining Weekly, 2008a). Almalyk produced all the country's copper and zinc output, 90% of its silver output, and 20% of its gold output (Interfax Russia & CIS Metals and Mining Weekly, 2008a). In 2007, Almalyk reduced its refined copper output by about 3.2% to 92,000 metric tons (t).

In more than 50 years of mining, only about 20% of Almalyk's copper reserves (calculated according to the Soviet

reserve classification system) had been depleted. The Almalyk complex was processing about 30 million metric tons per year (Mt/yr) of ore, and the metallurgical plant had the potential to increase production significantly. Besides copper, ore from Almalyk contained gold, rhenium, selenium, silver, sulfur, and tellurium. Production of these byproduct metals accounted for 40% of the value of Almalyk's output (Mavlyanov and others, 2007; Interfax Russia & CIS Metals and Mining Weekly, 2008a).

**Gold.**—The country's main reserves of gold and uranium are located in the Central Kyzylkum region between the Amu Darya and the Syr Darya rivers. The ores were mined and processed by the Navoi mining and metallurgical complex. The Navoi complex had more than 20 gold deposits in western Uzbekistan, of which the largest by far was the Muruntau deposit, which is one of the world's largest gold deposits. Gold from this deposit was mined from an open pit. Navoi's gold production had averaged between 57 and 60 metric tons per year (t/yr) in recent years.

Navoi also had shared production from the Zarafshan-Newmont joint venture, which was formed by Navoi, Newmont Gold Corp. of the United States, and the Uzbekistan State Committee for Geology and Mineral Resources (Goskomgeologia).

The Zarafshan-Newmont joint venture recycled tailings generated from the Muruntau gold lode. The processing plant was officially opened on May 25, 1995. The joint venture initially contracted to process 220 million metric tons (Mt) of ore averaging 1.23 grams per metric ton (g/t) gold and containing 5.1 million troy ounces (158.63 t) of recoverable gold. Zarafshan-Newmont employed about 900 people (Interfax Russia & CIS Metals and Mining Weekly, 2007a).

Previously, in March 2006, the Government of Uzbekistan notified the Zarafshan-Newmont joint venture that tax reforms were in process and, in June 2006, Uzbekistan's courts had ordered Zarafshan-Newmont to pay \$48 million in back taxes, froze the joint venture's assets, and seized some of its gold. Then, on August 11, 2006, the Government of Uzbekistan launched a criminal investigation against the joint venture and its employees and blocked the export of any gold. Although Newmont lost control of the day-to-day operations of the joint venture, the company continued to mine and process gold (Radio Free Europe/Radio Liberty, 2006).

In September 2006, 2 months after authorities seized gold and other assets based on two tax claims for payments due between 2002 and 2005, Newmont wrote off the value of its stake in the joint venture. An Uzbekistan court seized \$49 million for the disputed tax claims and declared the joint venture bankrupt. In 2007, Newmont reached an agreement whereby it transferred its stake in the Zarafshan-Newmont venture to the Government of Uzbekistan with none of the parties admitting liability regarding any matters in the dispute (Reuters, 2007). According to the agreement, Newmont received \$80 million for its 50% stake, which reportedly was less than its estimated book value (Interfax Russia & CIS Metals and Mining Weekly, 2007a).

**Lead and Zinc.**—In 2007, Almalyk increased zinc metal production by an estimated 60% to 71,820 t (Interfax Russia & CIS Metals and Mining Weekly, 2008a). Almalyk produced zinc metal at its zinc smelter on a tolling basis. Almalyk, however, had also started to develop a lead and zinc mining and beneficiation complex to develop the Uchkulach lead-zinc deposit where Almalyk had a mothballed mine. Almalyk was also planning to develop the Khandiza polymetallic ore deposit. The beneficiation plant at the Uchkulach Mine would be capable of processing 500,000 t/yr of ore and the beneficiation plant at the Khandiza Mine would be capable of processing 650,000 t/yr of ore. Plans called for the complex to begin operations in 2009 (Interfax Russia & CIS Metals and Mining Weekly, 2007b).

### *Mineral Fuels and Related Materials*

**Coal.**—In 2007, Uzbekistan increased coal production almost 6% to 3.302 Mt. Lignite production increased by 5.5% to about 3.2 Mt, but bituminous coal production fell by about 16% to about an estimated 102,000 t. Open Joint-Stock Company (OJSC) Apartak and OJSC Uzbekcoal mined lignite from the Angren coalfield in Toshkent Province and produced 2.955 Mt and 239,000 t, respectively, in 2007. Joint-Stock Company (JSC) Shargunugol was the country's sole bituminous coal mining company and mined the Baysunskoye and the Shargunskoye coalfields in Surxondaryo Province. Explored reserves at the Angren lignite field were reportedly 1.9 billion metric tons (Gt) and reserves at the Baysunskoye and the Shargunskoy bituminous coalfields were reportedly about 1 Gt (Interfax Russia & CIS Metals and Mining Weekly, 2008b). Coal consumption in Uzbekistan is about 4 Mt/yr and was projected to increase to 9.4 Mt/yr in 2010, of which 9.29 Mt was projected to be lignite and 110,000 t, bituminous coal (Interfax Russia & CIS Metals and Mining Weekly, 2008b).

**Natural Gas and Petroleum.**—Oil production from Uzbekistan had declined since 2003 because of the lack of new investment and technical capacity to bring new oilfields online. In 2007, Uzbekistan increased natural gas production by an estimated 12.6%. Uzbekistan has large natural gas reserves but development of these reserves was constrained by the lack of available natural gas transport infrastructure. Uzbekistan was also hampered in developing its oil and natural gas reserves by the lack of sufficient foreign investment, an inadequate export pipeline infrastructure, and perceived political risks. Recent agreements with international companies and countries could help Uzbekistan find alternative export routes that could increase its hydrocarbon exports. Although Uzbekistan consumes most of its natural gas production domestically, it does export significant quantities of natural gas to other countries in the region (U.S. Energy Information Administration, 2009).

**Uranium.**—The Navoi mining and metallurgical complex was the country's only facility for mining and enriching uranium. Navoi had three enterprises that mined uranium using in situ leaching. The company milled uranium at its No. 1 Hydrometallurgical Plant in the city of Navoi (Interfax, 2007).

Navoi was also responsible for exporting uranium. Uzbekistan's State Committee for Geology and Mineral Resources stated that uranium resources are contained mainly in 27 deposits whose total reserves were estimated to be 55,000 t. In 2007, the Navoi mining and metallurgical complex produced 2,320 t of uranium compared with 2,270 t (revised) in 2006 (Interfax, 2007).

Navoi planned to develop seven uranium deposits to increase its uranium production by 50% by 2012 and to renovate its sulfuric acid production facilities. It had been conducted exploration, development, and uranium trade agreements mainly with companies from Japan and the Republic of Korea (WISE Uranium Project, 2009).

### **Outlook**

The U.S. Department of State stated that Uzbekistan had the lowest level of foreign direct investment per capita among the members of the Commonwealth of Independent States. The action taken against Newmont could make it more difficult for Uzbekistan to attract major foreign investment to develop its mineral resources.

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

(Metric tons unless otherwise specified)

Commodity	2003	2004	2005	2006	2007
<b>METALS</b>					
Aluminum, secondary <sup>e</sup>	3,000	3,000	3,000	3,000	3,000
Copper:					
Mine output, Cu content	80,000 <sup>e</sup>	83,000 <sup>r</sup>	103,500 <sup>r</sup>	100,000 <sup>r</sup>	95,000
Metal:					
Blister <sup>e</sup>	75,000	93,770 <sup>2</sup>	103,870 <sup>2</sup>	92,300 <sup>r</sup>	89,655 <sup>2</sup>
Refined	77,000 <sup>r</sup>	103,400 <sup>r</sup>	115,000 <sup>r</sup>	95,000 <sup>r</sup>	92,000
Gold kilograms	84,610 <sup>r</sup>	88,350 <sup>r</sup>	84,210 <sup>r</sup>	84,000 <sup>r,e</sup>	85,000 <sup>e</sup>
Molybdenum, mine output, Mo content <sup>e</sup>	500	500	575	600	600
Rhenium <sup>e</sup> kilograms	NA	NA	NA	850 <sup>r</sup>	900
Silver, mine output <sup>e</sup> do.	80,000	80,000	83,000	83,000	83,000
Steel:					
Crude	472,000 <sup>e</sup>	602,166	607,253	592,450 <sup>r</sup>	740,000 <sup>e</sup>
Rolled	446,521	562,200	576,500 <sup>r</sup>	560,000 <sup>r</sup>	700,000
Zinc, metal, smelter, primary <sup>e</sup>	60,000	60,000	35,030 <sup>2</sup>	45,000 <sup>r</sup>	71,820 <sup>2</sup>
<b>INDUSTRIAL MINERALS</b>					
Cement	4,804,800	5,067,800	5,068,000	5,000,000 <sup>e</sup>	5,000,000 <sup>e</sup>
Clays:					
Bentonite <sup>e</sup>	15,000	15,000	15,000	15,000	15,000
Kaolin	169,900 <sup>r</sup>	202,300 <sup>r</sup>	216,600 <sup>r</sup>	251,000 <sup>r</sup>	250,000 <sup>e</sup>
Feldspar	80,000 <sup>r</sup>	82,000 <sup>r</sup>	84,000 <sup>r</sup>	84,300 <sup>r</sup>	84,000 <sup>e</sup>
Fluorspar	88,000	86,000	85,000	88,000	90,000 <sup>e</sup>
Graphite <sup>e</sup>	60	60	60	60	60
Gypsum <sup>e</sup>	80,000	80,000	80,000	80,000	80,000
Iodine <sup>e</sup> kilograms	2,000	2,000	2,000	2,000	2,000
Nitrogen, N content of ammonia <sup>e</sup>	815,000	875,300 <sup>2</sup>	880,000 <sup>r</sup>	940,000 <sup>r</sup>	1,000,000
Phosphate rock:					
Gross weight	433,400 <sup>r</sup>	482,000 <sup>r</sup>	468,000 <sup>r</sup>	600,000	600,000
P <sub>2</sub> O <sub>5</sub> content <sup>e</sup>	101,000 <sup>r</sup>	112,000 <sup>r</sup>	109,000 <sup>r</sup>	140,000	140,000
Sulfur:					
Byproduct: <sup>e</sup>					
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	802,400	834,300	740,500	600,000	600,000 <sup>e</sup>
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal	1,909,000	2,700,000	3,000,000	3,121,000	3,302,000
Natural gas million cubic meters	57,481	59,864	59,686	58,000	65,300
Petroleum and gas condensate	7,134,000	6,580,000	5,490,000	5,410,000	4,928,000
Petroleum refinery products	5,807,000	7,749,000	4,600,000	4,800,000 <sup>r</sup>	4,800,000 <sup>e</sup>
Uranium:					
U content	1,598	2,016	2,300	2,270 <sup>r</sup>	2,320
U <sub>3</sub> O <sub>8</sub> content	1,885	2,377	2,712	2,677 <sup>r</sup>	2,736

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. NA Not available.

<sup>1</sup>Table includes data available through February 28, 2009.

<sup>2</sup>Reported figure.

TABLE 2  
UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2007<sup>1,2</sup>

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity <sup>e</sup>
Bismuth		Ustarassay deposit (depleted)	Chotqol and Kuraminskiy Khrebet regions	NA
Cesium, lithium, rubidium		Shava-Say deposit	NA	NA
Clays:				
Bentonite		Arab-Dasht and Khau dag deposits	NA	NA
Kaolin		Angren deposit	Angren region	8,000,000
Coal:				
Lignite		OJSC Uzbekcoal and OJSC Apartak	Angren deposit, Toshkent Province	6,000,000
Bituminous		JSC Shargunugol	Baysunskoye and Shargunskoye deposits, Surxondaryo Province	1,000,000 <sup>3</sup>
Copper:				
Mine output, Cu content		Almalyk mining and metallurgical complex	Dalneye, Kalmakyr, and Sary-Cheku deposits	100,000 <sup>3</sup>
Metal		Almalyk refinery	Olmaliq	130,000
Diamond		Karashok and Kok-Say deposits	Navoiy Province	NA
Feldspar		Karichasayskoye and other deposits	Deposits in Samarqand and Toshkent Provinces; Qoraqalpog'iston Province	120,000 <sup>3</sup>
Fertilizers				
Do.		Ammophos production association	Olmaliq	NA
Do.		Azot production association	Farg'ona	NA
Do.		Elektrokhimprom production association	Chirchiq	NA
Do.		Kokand superphosphate plant	Qo'qon	NA
Do.		Naviazot production association	Navoiy Province	NA
Do.		Samarqand chemicals plant	Samarqand	NA
Fluorspar		Agata-Chibargata, Aurakhmat, Kengutan, Kyzylbaur, Naugarzan, and Nugisken deposits	East of Toshkent Province	150,000
Do.		Syrpatash deposit	Namangan Province	NA
Gold	kilograms	Adzhi-Bugutty, Amantaytau, Balpantau, Bulutkan, Donguz-Tau, Muruntau, and Taurbay deposits	Central Kyzylkum region	85,000 <sup>3</sup>
Do.		Navoi Integrated Mining and Metals complex (Uzbekistan State Committee for Geology and Mineral Resources)	Muruntau deposit	65
Do.		Kochbulak and Kyzyl-Al'ma-Say deposits	Toshkent Province	NA
Do.		Almalyk mining and metallurgical complex	Dalneye, Kalmakyr, and Sary-Cheku deposits	NA
Graphite		Tadzhi-Kazgan deposit	Navoiy Province	NA
Iron ore		Syurenata deposit	Toshkent Province	NA
Lead, mine output, Pb content		Almalyk mining and metallurgical complex; Altyn-Topkan and Uchkulach deposits	Uchkulach deposit in Toshkent Province [Altyn-Topkan deposit is located in the Kurama mountain range in Tajikistan (in 1999, Altyn-Topkan was transferred to the control of Tajikistan)]	40,000 <sup>3</sup>
Manganese		Dautashskoye deposit	Qashqadaryo Province	40,000
Molybdenum:				
Mine output, Mo content		Almalyk mining and metallurgical complex; Kalmakyr and Sary-Cheku deposits	Toshkent Province	900 <sup>3</sup>
Metal		Uzbek refinery and hard metals plant	Chirchiq	NA
Natural gas liquids	million cubic meters	Mubarek gas processing plant	Muborak	28,000
Do.		Shurtan gas-chemical complex	Shurtan-Say deposit, Qashqadaryo Province	137,000
Natural gas	million cubic meters	Gazli, Kandym, Khauzak, Kokdumalak, Pamuk, and Shurtan-Say deposits (major)	Amu-Dar'ya Basin; Mubarek area	70,000 <sup>3</sup>
Do.		Itera/Lukoil (Russia), Uzbekneftegaz JSC	Kan-Dam field	NA
Natural gas condensate		Trinity Energy (United Kingdom)	Ustyurt Plato region	NA

See footnotes at end of table.

TABLE 2—Continued  
 UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2007<sup>1,2</sup>

(Metric tons unless otherwise specified)

Commodity	Major operating companies, main facilities, or deposits	Location or deposit names	Annual capacity <sup>e</sup>
<b>Petroleum:</b>			
Crude	Kokdumalak and Mingbulak deposits (major)	NA	9,000,000 <sup>3</sup>
Refinery products	Fergana oil refinery	Farg'ona Province	8,800,000
Do.	Bukhara oil refinery	Bukhoro	2,500,000
Phosphate	Kyzylkum complex	Dzheroy-Sardarin Moroccan type; Karakhtay, Severnyy, and Dzhetyntau deposits	NA
Polyethylene	Shurtan gas-chemical complex	Shurtan-Say deposit, Qashqadaryo Province	125,000
Potash	Tyubegatan deposit	Southern Uzbekistan	NA
Rhenium	Almalyk mining and metallurgical complex	Toshkent Province	NA
Selenium	do.	do.	NA
Silver	do.	do.	NA
Do.	Kosmanachi, Okzhetpes, and Vysokovoltnoye deposits	Namangan Province	NA
Steel, crude	Bekabad steel mill	Bekabad	1,100,000
Sulfur	Almalyk mining and metallurgical complex	Dalneye, Kalmakyr, and Sary-Cheku deposits	NA
Do.	Mubarek gas processing plant complex	Muborak	2,000,000
Tellurium	Almalyk mining and metallurgical complex	Toshkent Province	NA
<b>Tungsten:</b>			
Mine output, W content	Deposits: Koytash deposit Ingichka and Lyangar deposits Ugat deposit	Locations: Northeastern Uzbekistan Zirabulak Mountains Northern Uzbekistan	1,200 <sup>3</sup>
Mine output, WO <sub>3</sub> content (0.49%)	Sautbay wolframite deposit	Kyzylkum region	NA
Metal	Uzbek refractory and hard metals plant	Chirchiq	NA
Uranium, U content	Navoi mining and metallurgical complex	Central Kyzylkum region	3,000
Vermiculite	Tebin-Bulak deposit	NA	25,000
<b>Zinc:</b>			
Mine output, Zn content	Almalyk mining and metallurgical complex	Khandiza and Uchkulach deposits	NA
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>Table includes data and information available through March 31, 2009.

<sup>2</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>3</sup>Capacity estimates are totals for all enterprises that produce that commodity.