THE MINERAL INDUSTRY OF

UZBEKISTAN

By Richard M. Levine

Uzbekistan was the third most populous state created from the FSU and the fourth largest in land area. Well endowed with mineral wealth, it was among the world's largest producers of gold, which was a significant source of foreign currency earnings. Besides gold, Uzbekistan was a significant producer of nonferrous metals and natural gas. The nonferrous metals industry included the mining of bismuth, cadmium, copper, lead, molybdenum, palladium, silver, tin, tungsten, and zinc, and the production of bismuth, cadmium, copper, gold, indium, molybdenum, rhenium, tungsten, silver, and zinc metals. Uzbekistan also produced steel and mineral fuels, including coal, gas, oil, and uranium, and had one of the FSU's largest gas-processing facilities at Mubarek. Uzbekistan also produced significant quantities of industrial minerals, including feldspar and fluorspar, as well as a range of minerals for the construction industry.

In 1995, GDP in Uzbekistan was estimated to have fallen by 2% compared with 1994 which was comparable to the previous 2 years when GDP fell by under 5%. In 1995, mining enterprises were still Government controlled. The Government was considering a program for denationalization of mining enterprises in 1996 and 1997.

The Almalyk mining and metallurgical complex, which mines copper-molybdenum ores and lead-zinc ores, has a copper smelter and refinery and a zinc refinery, and produces refined copper, metallic zinc, lead and molybdenum concentrates, sulfuric acid, metallic bismuth, cadmium, gold, indium, silver, and other metals and sulfuric acid. Almalyk consisted of five mining enterprises, two beneficiation plants, and two metallurgical plants.

At Almalyk, lead-zinc ores are mined from three underground mines, the large Altyn Topkan Mine with a capacity of over 1.5 Mt/yr, the Uch Kulach Mine with a capacity of about 1 Mt/yr, and the Uch Pay Mine with a capacity of about 100,000 t/yr. At existing mines, the leadzinc ores reportedly grade between 1% to 2% for both lead and zinc. Copper-molybdenum ores were mined from tw o open pits, the Kalmakyr and Sary-Cheku. At existing mines, the copper ores reportedly grade between 0.4% and 0.5% copper and the molybdenum ores between 0.004% and 0.005% molybdenum. Uzbekistan was interested in bot h developing new higher grade deposits and acquiring processing technologies to extract minerals from lower grade ores.

Production at Uch Kulach which is over 300 km from the

Almalyk concentrator had fallen sharply because of high transport costs. Mine output of both lead and zinc in Uzbekistan in 1995 had decreased by about two-thirds compared with 1990. Almalyk's production of lead concentrates had fallen from over 35,000 t/yr of lead in concentrate in 1990 to an estimated 10,000 t/yr of lead in concentrate in 1995. The Almalyk complex at the beginning of 1995 stopped sending its lead concentrates to the Chimkent plant in Kazakstan for processing. It does no t appear that Almalyk's lead concentrate production in 1995 was shipped for processing and could be stockpiled a t Almalyk. Slab zinc production at Almalyk in 1995 was maintained at the 1994 level of about 70,000 t as about 50% of this output was from toll smelted material from China. Iran, Mexico, and Poland.

Copper production in 1995 at Almalyk at both open pits had fallen sharply compared with 1990; production at Kalmakyr which produced over 20 Mt of ore in 1990 and Sary-Cheku which produced about 3 Mt/yr of ore in 1990 had fallen by more than one-third, in large measure because of a lack of needed investment funds. Blister copper and copper cathode production in 1995 rose despite the fall i n domestic mine output as Almalyk began toll smelting and refining foreign material, mainly from Latin America.

Almalyk was in need of investment funds to increase copper ore production and to modernize its metallurgical facilities. In particular, Almalyk needed to upgrade its wire rod production facility and to replace one of its two furnaces, a reverberatory furnace, with an oxygen enriched furnace. The other furnace was a Russian made oxygen enriched furnace.

Uzbekistan reportedly was the world's eighth largest gold producer with output in 1995 estimated at about 80 t. The Zarafshan-Newmont joint venture reported shipping its first gold to London in 1995. The Uzbek partners of the United States Newmont Corp. are the Navoi mining and metallurgical complex and the Uzbekistan State Committee for Geology and Mineral Resources. The joint venture processes ore piles from the open pit with heap leaching . The joint venture reportedly would have a 17-year life-span, during which 156 t of gold would be extracted; annual output reportedly was to begin at 14 t/yr and decrease to 7 t/yr.

In 1995, the United Kingdom's Lonrho Plc reached a n agreement with Uzbekistan officials to develop the Amantaytau goldfields near Zarafashan containing difficult to process gold-arsenic ores. The fields reportedly grad e slightly more than 3 grams per metric ton (g/t) of gold. A recently completed Lonrho study put reserves at 60 Mmt of ore. Plans call for mining the deposit at the rate of 3.5 Mt/yr of ore for a 17-year period with gold output beginning at 300,000 ounces per year and reaching 450,000 ounces per year in the fifth year. The life of the project could be extended beyond the planned 17 years if further exploration yields additional reserves.

In 1995, Uzbekistan reportedly produced 5 Mt of oil and 47 billion m³ of natural gas. Priority projects in the petroleum sector included constructing an oil refinery in Bukhara and investing to increase oil production at the Kokdumalak oil and gas condensate field from 2 Mt/yr to eventually 6.5 Mt/yr. Uzbekistan was gaining oil independence from Russia as it had reduced its imports of Russian oil from over 4 Mt/yr to 350,000 t in 1995 with projections for no imports in 1996.

Uzbekistan planned to significantly increase coal output to 10 Mt/yr to 12 Mt/yr by developing new capacity to mine an additional 5 Mt/yr and by upgrading existing open pits. Uzbekistan reportedly has exploitable coal resources totaling 3 billion t, of which 1 billion t are anthracite. The Angre n coal mining complex that produces the majority of the country's coal reportedly has 1.9 billion t of proven reserves.

In 1995, Uzbekistan began to build the Uzbeksod a enterprise to produce 570,000 t/yr of soda ash near the Barsa Kelmes salt mine in the north of the country. Plans called for the enterprise to produce 20 types of sodas and to have a glass plant to supply the Asak automobile plant in easter n Uzbekistan. Reportedly Uzbekistan was seeking foreig n investors to participate in this project.

Uranium production in Uzbekistan has increased by about 50% since the breakup of the Soviet Union, increasing from about 2,000 t of uranium (U) in 1991 to over an estimated 3,000 t U in 1995. Mining is conducted at the Navoi mining and metallurgical complex which is colocated with the major

gold producing enterprise of the country.

According to the Uzbekistan State Committee for Geology and Mineral Resources. Uzbekistan has adequate reserves to increase production of a large number of minerals including copper, feldspar, fluorspar, gold, lead, lithium, phosphat e rock, potash, tin, tungsten, silver, and zinc. The country i s interested in soliciting foreign investment to develop it s mineral resources and is particularly interested in developing those needed by the economy such as potash, soda ash, and phosphate fertilizers. Besides these minerals, Uzbekistan is preparing to solicit investment for development of copper molybdenum, gold-silver, lead-zinc, lithium, silver, strontium, titanium, tungsten, and vanadium reserves. The country also has a number of copper deposits at existin g enterprises where the remaining ore is too low grade for conventional mining, but reportedly would be suitable for heap leaching with recovery of byproduct gold, molybdenum, and silver. Furthermore, the country has wastes at goldprocessing plants with a gold content reportedly of 0.5 to 0.9 g/t that it seeks to process. Uzbekistan appears to b e positioned to gain considerable revenue from increased gold production, but like the other countries of the FSU, is stil l awaiting major investment in its other nonfuel mineral industries.

OTHER SOURCES OF INFORMATION

Ministry of Foreign Economic Relations 75, Buyuk Turon Yoli St. 700077, Tashkent, Uzbekistan Telephone: 011-7-3712-34-44-80 Fax: 011-7-3712-39-84-63 The State Committee of Geology and Mineral Resources 11 Ulitsa Shevchenko

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TABLE 1 UZBEKISTAN: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995

(Metric tons unless otherwise specified)

| | | | Annual |
|----------------------------------|--|--|----------------|
| Commodity | Major operating facilities | Location | capacity e/ |
| Bismuth | Ustarasayskoye deposit | Chatkalo-Kuraminskiy region | 20. |
| Coal | Central Asian Coal Association (mining) | | |
| | Angren brown coal deposit | Angren region | 6,000,000. |
| | Baysunskoye deposit | Surkhondaryo region | 1,000,000. |
| Copper: | _ | | |
| Mine output, Cu content | Almalyk mining-metallurgical | Kalmakyrskoye, Sarychekinskoye | 100,000. |
| Metal | Almalyk refinery | Olmalia (Almalyk) 1/ | 130.000 |
| Feldenar | Karichasayskove and other deposits | Deposits in Samargand (Samarkand) and | 120,000. |
| reuspar | Kanchasayskoye and oner deposits | Toshkent (Tashkent) regions and Karakal- pakstan (Karakalpakskaya ASSR) | 120,000. |
| Fluorspar | Agata-Chibargatinskoye, Naugiskenskoye | | |
| | deposits | East of Toshkent (Tashkent) | 150,000. |
| Gold | Muruntau deposit | Nawoiy (Navoi) region | 85. |
| Kaolin | Central Asian coal association | Angren deposit | 8,000,000. |
| Lead-zinc | | | |
| Mine output, metal content | Almalyk mining and metallurgical complex | Uchkulachskoye deposit | 40,000 (lead). |
| Do. | do. | do. | 80,000 (zinc). |
| Zinc, metal | Almalyk refinery | Olmaliq (Almalyk) | 120,000. |
| Molybdenum | Almalyk mining and metallurgical | Kalmakyrskoye, Koytashskoye, | 900. |
| | complex, Koytash tungsten- | Sarychekinskoye deposits | |
| | molybdenum mine | | |
| Natural gas liquids | Mubarek gas processing plant | Mubarek | 1,200,000. |
| Petroleum and natural gas | More than 40 oil and gas deposits and | Oil deposits in Farghona and | 50 billion |
| | more than 15 gas deposits under | Surkhondaryo regions, major | cubic meters |
| | exploitation | gas deposits: | (natural gas). |
| | | Dzharkakskoye, Gazlinskoye, | |
| | | Mubarekskoye, and Shurtanskoye | |
| Do. | do. | Oil deposits: | 5,000,000. |
| | | Khaudagskoye, Uchkyzylskoye, | (petroleum). |
| | | Kokaytinskoye in Surkhondaryo | |
| | | region; Palvantashskoye, Yashiy | |
| | | Alamyshikskoye, Sharikhan- | |
| | | Khodzhiabadskoye in Farghona region | |
| Steel, crude | Bekabad steel mill | Bekabad | 1,100,000. |
| Tin | Karnabskoye, Lapasskoye deposits | Karnab region | NA. |
| Tungsten, mine output, W content | Koytashskoye, Ingichkinskoye | Ingichka, Koytash, Lyangar regions | 1,200. |
| | Lyangarskoye, Karatyubinskoye | | |
| | Y akhtonskoye deposits | | 27.4 |
| Tungsten, metal | Chirchik metals plant | Chirchiq (Chirchik) | NA. |
| Sultur | Mubarek gas processing plant complex | Mubarek | 2,000,000. |
| Uranium | Navoi mining complex | Nawoiy (Navoi) region | NA. |

e/ Estimated. NA Not available.

1/New names and spellings for locations will be used whenever available; old names will appear in parentheses.