



2007 Minerals Yearbook

AFGHANISTAN

THE MINERAL INDUSTRY OF AFGHANISTAN

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Afghanistan has abundant metallic and industrial mineral resources in addition to extensive deposits of natural gas, but the majority of these resources and deposits are not developed. According to a report prepared by the Afghanistan Geological Survey and the U.S. Geological Survey, Afghanistan was estimated to have a number of nonfuel mineral resources that included asbestos, barite, bauxite, beryllium, chromium, copper, fluorspar, gemstones, gold, iron ore, lead, lithium, magnesium, marble, mercury, mica, nickel, salt, silver, sulfur, talc, and zinc. Fuel mineral resources and related materials included coal, natural gas, petroleum, and uranium (U.S. Geological Survey, 2007).

Production

Only limited mining activities appear to have taken place in 2007, although mineral production data were not readily available. Mineral output is estimated to have included about 50,000 metric tons (t) of cement, 6,800 t of chromite, 140,000 t of coal, 20,000 barrels of crude oil, and 50 million cubic meters of natural gas.

Structure of the Mineral Industry

The Ministry of Mines is responsible for a number of functions related to mineral exploration, licensing, development, and mining. It works closely with the Afghanistan Geological Survey. The Afghanistan Geological Survey is the national custodian of geoscientific information. It assists and advises the Ministry of Mines on policies related to coal, geotechnical and environmental geology, hydrocarbons, metalliferous and industrial minerals, precious and semiprecious stones, and water resources. In 2007, the Afghanistan Geological Survey was active in mineral exploration in cooperation with the British Geological Survey and the U.S. Geological Survey.

Commodity Review

Metals

Bauxite resources in Afghanistan were estimated to be about 4.5 million metric tons (Mt) containing 50% alumina and 12% silica. Chromite resources were found in the Provinces of Khost and Logar and contained 200,000 t of ore at a grade of 43% chromium oxide. Copper resources were estimated to total approximately 60 Mt, of which 30 Mt was contained in sediment-hosted deposits; 28.5 Mt, in porphyry deposits; and 70,000 t, in deposits related to plutonic rocks. The Aynak sediment-hosted copper deposits contained resources of 12.3 Mt of copper. Gold resources were contained in lode deposits [1,780 kilograms (kg)] and placer deposits (918 kg). Iron ore resources were estimated to be nearly 2,400 Mt, of which sedimentary deposits accounted for 2,260 Mt and igneous-related deposits, 178 Mt. The Haji Gak sedimentary

iron ore deposit, with 2,100 Mt, was of world-class size. Lead and zinc resources of 244,000 t were from deposits of both igneous-related and sediment-hosted types (U.S. Geological Survey, 2007).

China Metallurgical Group Corp. and Jiangxi Copper Co. planned to jointly invest \$3.7 billion to develop the Aynak copper deposit, which is located 30 kilometers south-southeast of Kabul in east-central Afghanistan. The project would be the first significant investment in the mining sector in 2007. The main ore body was 210 meters thick and had an estimated resource of 240 Mt at a grade of 2.3% copper. The companies planned to establish a joint venture to operate the mine, which was expected to produce 220,000 metric tons per year of copper. Jiangxi Copper would provide 20% of the capital cost of the project and would buy at least one-half of the copper produced (Mineweb.com, 2007). After the international tender for the copper project, the iron ore deposits were most likely to be put up for bidding for development.

Industrial Minerals

Afghanistan's industrial minerals included asbestos, barite, celestite, clays, dolomite, fluorite, graphite, gypsum, limestone, magnesite, marble, potash-bearing bedded halite, rare-earth elements, sandstone, sulfur, and talc. Of particular interest were gemstones present in pegmatite deposits that included aquamarine, garnet, kunzite, ruby, and tourmaline. Nonpegmatite gemstone deposits contained emerald, lapis lazuli, sapphire, and spinel. Old gemstone mines were found at Badakhshan and Nurista in the north. The annual gemstone trade was valued at between \$10 million and \$20 million (U.S. Geological Survey, 2007).

Marble in Afghanistan was produced by 21 small mining companies, shipped to Pakistan for processing, and then transported back to Afghanistan. The marble industry suffered from a lack of adequate equipment, had little technical knowledge, and used old extraction methods. Various types of marble were extracted from quarries in the country. Granular white marble and fine-grained black marble were quarried in Kabul Province. Brown marble and black and white marble were produced in Logar Province. Grey marble and dark grey marble were quarried in Wardak Province. Medium and coarse crystalline marble were quarried in Badakhshan Province. Fine crystalline marble ranging in color from pure white to light green was produced in Heart Province. White marble was produced in Nangarhar Province. Onyx (banded chalcedony) marble, valued as a high-quality variety, was produced in several Provinces, including Bamyan, Faryab, and Helmand, and the color of its bands ranged from white to yellow, green, or brown (Ministry of Mines, 2007).

Mineral Fuels

Afghanistan hosts substantive reserves of hydrocarbons and coal. The U.S. Geological Survey estimates reserves of as much as 444 billion cubic meters of natural gas and 1.6 billion barrels of oil. The only oil production was in the northern part of the country. The oil was reported to be under the control of the local warlords. The Ministry of Mines plans to move forward with oil and gas tenders and the Government is expected to pass a hydrocarbon law to regulate future exploration and development of gasfields and oilfields (U.S. Geological Survey, 2006).

References Cited

- Mineweb.com, 2007, Chinese to build large Afghan copper project: Mineweb.com. (Accessed November 26, 2007, at <http://www.mineweb.com/mineweb/view/mineweb/en/page36>.)
- Ministry of Mines, 2007, Marbles of Afghanistan: Afghanistan Project of Afghanistan Geological Survey and British Geological Survey brochure, 2 p.
- U.S. Geological Survey, 2006, Assessment of undiscovered petroleum resources of northern Afghanistan: U.S. Geological Survey Fact Sheet 2006-3031, March, 2 p.
- U.S. Geological Survey, 2007, Preliminary assessment of non-fuel mineral resources of Afghanistan: U.S. Geological Survey Fact Sheet 2007-3063, October, 4 p.