

## THE MINERAL INDUSTRY OF

# ARMENIA

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Armenia's mineral industry in recent years was primarily involved in mining nonferrous and industrial minerals. Armenia has large molybdenum reserves and was mining one-third of the former Soviet Union's (FSU) output of molybdenum. The molybdenum was associated with copper. Armenia also mined copper-zinc deposits. It had a native gold mining industry and its nonferrous ore byproducts include barite, gold, lead, rhenium, selenium, silver, tellurium, and zinc.

The Nation had a large industrial minerals industry and was the largest producer of perlite in the FSU. It also produced a number of other industrial minerals, including clays, diatomite, dimension stones, limestone, salt, and semiprecious stones. Armenia reportedly also has significant high quality iron ore reserves, which have not yet been exploited. However, Armenia had practically no mineral fuel production in 1994 and was dependent on imported coal, gas, and oil, resulting in significant economic difficulties.

Armenia's formerly large metallurgical industry was mostly shut down in the late 1980's for environmental reasons. The country had been the second largest producer of copper sulfate and third largest producer of refined copper among the republics of the FSU. Armenia also had been producing primary aluminum and aluminum products and foil, but production of primary aluminum had ceased. In 1994, Armenia's gross domestic product (GDP) declined by 2% compared with 1993, while industrial output reportedly increased 6.9%. These economic indicators were among the most positive for the countries of the Commonwealth of Independent States (CIS) and a great improvement from the preceding 2 years.<sup>2</sup>

The war in Chechnya in the nearby North Caucasus region of Russia was further exacerbating Armenia's energy shortage because a main road used to transport fuel to Armenia passed through the Chechen capital of Grozny, and the fighting cut off Armenia from certain overland transport links to Russia. Also, Armenia was receiving gas piped from Turkmenistan, but those gas shipments were reduced because of pipeline breakdowns, the reported siphoning off of gas by Georgia, and disagreements over transit fees for the gas.<sup>3</sup> In May 1995, it was announced that Armenia's state gas company, Armgazprom, and Iran's National Oil Company signed an agreement to construct a gas pipeline from Iran to Armenia through which Armenia would receive one billion cubic meters (m<sup>3</sup>) of gas per year from Iran. Construction was

to begin in the second half of 1995 with completion planned in 2 years.

In March 1994, Armenia signed an accord with Russia for assistance in restarting its Medzamor nuclear powerplant that had been closed because of safety concerns following the 1986 Chernobyl accident in the Ukraine and the 1988 earthquake in Armenia. However, due to Armenia's acute energy shortage, a study was conducted regarding the feasibility of restarting the plant, which concluded that it was safe to do so. Russia would supply nuclear fuel to the plant and assist Armenia in setting up controls over nuclear materials and the nuclear power facilities. Armenia reportedly pledged not to use the nuclear materials received from Russia to produce weapons or to attain any military objective. The restart up of this plant remained controversial because of concerns about safety issues raised by a number of countries and international organizations.

Armenia was planning a major effort to increase exploration to increase its shrinking mineral base, according to the country's Commission for Mineral Reserves. Molybdenum was the number one exploration priority, according to the Chairperson of the Commission. The Commission also stated that Armenia has good prospects to develop its iron and steel industry, including unique iron ore deposits that reportedly could attract foreign investors. Armenia was interested in developing local iron ore deposits, in part, to develop a domestic steel industry. Steel must now be imported through the blockade imposed by Azerbaijan because of the warfare in Nagorno Karabakh, the predominately Armenian enclave in Azerbaijan that was striving to separate from Azerbaijan.<sup>4</sup>

Mineral products accounted for a significant portion of Armenia's exports in 1994. Among these, cut and uncut diamonds, precious metal scrap, and jewelry reportedly accounted for 39.9% of total exports; nonprecious metals and products made from these metals, 6.1%; and other mineral products, 10.8%.<sup>5</sup>

Reportedly, Armenia planned to privatize about 1,000 medium- and large-scale enterprises by yearend 1994.<sup>6</sup> In October 1994, Armenia launched the first phase of its program to privatize industry that involved the distribution of vouchers to the population for the purchase of about 2,000 small state-owned catering, retail, and service businesses. The vouchers could be freely bought or sold or invested in investment funds.<sup>7</sup>

In 1995, Armenia planned a large privatization campaign, which it intended to launch in March. The Armenian Government reportedly planned to sell 47% of its assets by the end of the year for both privatization vouchers and money. The plan entailed assigning shares to employees and holding auctions for shares open to both Armenians and foreigners. A number of major enterprises were slated for privatization.<sup>8</sup>

Regarding mineral production, the first output was reported at the Jajur coalfield. The field, 15 kilometers (km) northwest of the town of Gumri, reportedly contains 250,000 metric tons (mt) of reserves and was being developed by open pit mining. The development was being conducted by a specially formed mining and exploration enterprise, Jajurugol, financed by both the Armenian Government and the U.S. Agency for International Development (USAID). The coal from this field would help provide energy to northern Armenia, and would somewhat alleviate the effects of the energy blockade by Azerbaijan. Armenia formerly consumed 8 million metric tons per year (Mmt/a) of coal it had imported from other republics of the FSU.<sup>9</sup>

Armenia has an estimated capacity to produce 2 mt of gold annually and was seeking to increase gold output. Reportedly, Armenia's State Department for Underground Resources was planning to develop by means of an open tender the Karaber gold deposit in the Gugar district.<sup>10</sup>

Armenia possesses at least 10 iron ore deposits with combined reserves estimated at about 500 Mmt. Armenia was formulating plans to begin development of the Razdan iron ore deposit, which reportedly contained an estimated 70 Mmt of iron ore. Armenia reportedly was planning to hold an open competition for the best development plan for Razdan.<sup>11</sup>

In September, it was announced that a new gas pipeline was completed that links Armenia and Georgia directly with Russia, bypassing other countries. Russia reportedly will now be able to increase its gas shipments to Armenia.<sup>12</sup> Also in September, it was announced that Turkmenistan signed an accord with Armenia to supply Armenia with 5 million m<sup>3</sup> of gas per day in the fourth quarter of 1994. Armenia was to pay for the gas in both hard currency and goods.<sup>13</sup>

Armenia's severely strained economic conditions and fuel and minerals supply situation were in large measure due to its being landlocked and surrounded by either hostile or unstable countries or, those with which Armenia had not adequately developed political and economic relations. Armenia has 1,254 km of borders with Azerbaijan to the east, 566 km of borders with Azerbaijan to the south, 268 km of borders with Turkey and 35 km of borders with Iran to the south, and 164 km of borders with Georgia to the north. None of these bordering states were secure as either stable or friendly routes of transshipment of supplies to Armenia because of the warfare in Nagorno Karabakh that affected relations with Azerbaijan and Turkey, problems of civil

unrest in Georgia and the North Caucasus that affected shipments to Armenia, and the lack of traditional economic and transport ties with Turkey and Iran. More than 85% of Armenia's raw materials supplies from the countries of the FSU had been shipped by rail through Azerbaijan and 15% by rail through Georgia. Formerly, a large percentage of Armenia's oil and natural gas supply was piped via Azerbaijan and the remainder was piped via Georgia. To export its raw materials and manufactures, Armenia must contend with the same political and economic factors that affect imports.

The future development of Armenia's mineral industry as well as its general economic development depend, in part, on the resolution of the conflict in Nagorno Karabakh with Azerbaijan, the resolution of issues of civil unrest in Georgia and the North Caucasus, and the development of political ties with Turkey and Iran in a manner that will permit Armenia to have normal economic and transport relationships with its bordering states. Armenia has considerable potential to further develop its mineral industry and to supply both the countries of the FSU and world markets with nonferrous metals, but the development of these industries will depend on adequate fuel supplies and secure means for exporting this output. Although suffering from political problems outside its borders, Armenia could also be viewed as one of the potentially most stable of the new countries of the FSU. Its population, being more than 90% of Armenian ethnic origin and having a long historical tradition, a strong sense of unity brought about by historical oppression, and a large Armenian diaspora in western countries, has a stronger cohesiveness and sense of nationhood than many other countries of the FSU.

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<sup>1</sup>Text prepared June 1995.

<sup>2</sup>Interfax Business Report, Feb. 7, 1995, p. 3.

<sup>3</sup>Foreign Broadcast Information Service, U.S. Government publication, Washington, DC. SOV-95-010, Jan. 17, 1995, p. 76, Moscow Russian Television Network in Russian, 2000 gmt, Jan. 15, 1995. Interfax Business Report, Denver, Colorado, May 18, 1995, p. 3.

<sup>4</sup>Interfax Mining and Metals Report, Denver, Colorado, August 26-Sept. 2, 1994, p. 9.

<sup>5</sup>Foreign Broadcast Information Service, U.S. Government publication, Washington, D.C. SOV-95045-S, March 8, 1995, p. 45, Respublika Armeniya, in Russian, Yerevan, Feb. 22, 1995, pp. 2, 3.

<sup>6</sup>Summary of World Broadcasts, British Broadcasting Corp., Reading England, SUW/0354, p.WA/1, Oct. 14, 1994, Respublika Armeniya, Yerevan, Sept. 24, 1994, p. 1.

<sup>7</sup>Interfax Business Report, Denver, Colorado. Oct. 10, 1994, p. 3.

<sup>8</sup>\_\_\_\_\_. Feb. 1, 1995, p. 2.

<sup>9</sup>Interfax Mining and Metals Report, Denver, Colorado, Dec. 30, 1994-Jan. 6, 1995, p. 9.

<sup>10</sup>\_\_\_\_\_. March 3-10, 1995, pp. 5, 6.

<sup>11</sup>Work cited in footnote 9, p. 8.

<sup>12</sup>Summary of World Broadcasts, British Broadcasting Corp., Reading England, Sept. 9, 1994, p. WD/2, Radio Russia, Moscow, 0900 gmt, Aug. 31, 1994.

<sup>13</sup>\_\_\_\_\_. SUW/0352, p. WD/2, Sept. 30, 1994.

TABLE 1  
ARMENIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994
Bentonite	200,000	100,000	100,000
Cement	500,000	200,000	200,000
Copper Ore:			
Gross weight, 1% Cu	200,000	50,000	50,000
Cu content, recoverable	2,000	500	500
Gold kilograms	500	500	500
Limestone	1,000,000	500,000	500,000
Molybdenum, mine output, Mo content	1,000	500	500
Perlite	50,000	10,000	10,000
Salt	100,000	50,000	50,000

e/ Estimated.

1/ Table includes estimates based on information available through June 23, 1995.

TABLE 2  
ARMENIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Metric tons unless otherwise specified)

Commodity	Major operating facilities	Location of main facilities	Annual capacity e/
Copper, Cu content of ore	Kafan copper mining directorate	Kafan	10,000,000 1/
Do.	Shamlug mining directorate	Shamlug	
Do.	Akhtala mining directorate	Akhtala	
Do.	Zangezur copper-molybdenum complex mining Kadzharan deposit	Kadzharan	
Do.	Agarak copper-molybdenum mining and processing complex	Agarak	
Gold	Zod mining complex	Zod	2 2/
Do.	Megradozor deposit	Megradozor	
Molybdenum (Mo content of ore)	Zangezur copper-molybdenum complex mines Kadzharan deposit	Kadzharan	5,000 2/
Do.	Agarak copper-molybdenum mining complex	Agarak	
Perlite	Aragats mining and beneficiation complex	Aragats	200,000

e/ Estimated

1/ Copper content of ore total from all enterprises.

2/ Total for both enterprises.