THE MINERAL INDUSTRY OF

AZERBAIJAN

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Azerbaijan, for more than one century, has been an oil and natural gas producer and has had a petroleum refining industry. Azerbaijan is also a producer of alunite, alumina and aluminum, copper, iron ore, lead and zinc ore, molybdenum ore, and industrial minerals including boron and iodine, clays, decorative building stone, gypsum, limestone, marble, and sand and gravel, as well as precious and semiprecious stones.

The country’s most significant reserves in terms of value are its oil reserves; a number of foreign firms are involved in negotiations and projects to develop these reserves. Azerbaijan also has numerous other mineral resources, including such metals and metal ore as alunite used for alumina production, arsenic, chromite, cobalt, copper, iron ore, lead and zinc, manganese, mercury, molybdenum, and tungsten; industrial minerals and nonmetallic minerals, such as barite, clays, refractory-grade dolomite, gypsum, kaolin, limestone, pyrite, salt, and zeolites; and semiprecious stones, including amethyst, andalusite, and garnet, as well as a range of building materials. In 1996, Azerbaijan’s gross domestic product increased for the first time since the breakup of the Soviet Union, registering a 1% increase compared with that of 1995; industrial output, however, registered a 6.7% decline. The country’s chief export was mineral products which in 1995 comprised over 50% of the total value of exports (Interfax Statistical Report, 1997). Although Azerbaijan in 1996 was receiving more than 65% of its total value of imports from countries outside the former Soviet Union (FSU), Russia still supplied over 70% of Azerbaijan’s needs for minerals, timber, and other types of raw materials (Rossiyskaya Gazeta, 1996).

Azerbaijan’s mining and metallurgical industry is controlled by the state company Metallurgia, which comprised 18 enterprises including mining companies, the Gyandzha alumina refinery, the Sumgait aluminum smelter, aluminum rolling and wire drawing enterprises, powder metallurgy production facilities, and scrap metal units for ferrous and nonferrous metals (United States- Azerbaijan Chamber of Commerce, 1997, p. 47).

Practically all major activity in the mineral industry was in the oil and gas sector; and little information or data were available on the other mineral-producing sectors, probably reflecting their low level of activity. In the fuel sector in 1996, Azerbaijan produced 9.1 million metric tons (Mt) of oil and 6.3 billion cubic meters of natural gas compared with 9.2 Mt and 6.6 billion cubic meters in 1995. It was reported in 1996 for the nonfuel mineral sectors that cement production remained at its 1995 level of 200,000 metric tons (t) and rolled steel output decreased to 2,000 t compared with 10,000 t in 1995 (Interfax Statistical Report, 1997). The Gyandzha alumina refinery in the city of Ganca (formerly Gyandzha), which processes bauxite as well as locally mined alunite, was at a standstill throughout much of 1996. It produced 26,100 t of alumina in 1995 (Interfax Mining Report, 1997). For the first 9 months of 1996, the Sumgait aluminum smelter in Azerbaijan produced 732 t of alumina and a total of 3,464 t in 1995 (United Nations Industrial Development Organization, 1996).

Peak output at the Gyandzha alumina refinery was 410,000 t in 1988. When the refinery began operations in the 1960’s, it imported bauxite from Brazil, but in the 1970’s began importing bauxite from Sierra Leone under a 25-year agreement. In 1996 there were stocks of about 200,000 t of bauxite at Gyandzha which has storage capacity for 1 Mt (United Nations Industrial Development Organization, 1996).

Gyandzha was also supplied with alunite mined from an open pit at Dashkesan, about 30 kilometers (km) southwest of Gyandzha. The deposit reportedly contains about 300 Mt of proven alunite reserves, making it one of the world’s largest alunite deposits. It requires 6 t of alunite to produce 1 t of alumina which generates 2.5 t of byproduct sulfuric acid, 0.5 t of potassium sulfate, and 2 t of quartz and iron oxide. The potassium sulfate is used as a fertilizer (United Nations Industrial Development Organization, 1996).

The Gyandzha refinery, besides supplying the 50,000 ton-per-year capacity Sumgait smelter, also supplied aluminum smelters in Russia and Tajikistan. Approximately 350 people are employed in alumina mining, more than 1,300 at the Sumgait refinery, and over 2,100 at the Sumgait smelter (United Industrial Nations Development Organization, 1996).

The Azerbaijan steel pipe and tube works in Sumgait (ATZ) is the country’s only ferrous metals plant. It produces a range of seamless pipes and is an integrated complex that starts with steelmaking. For feedstock ATZ uses a charge of pig iron and steel scrap, with the scrap provided by a Metallurgia company Vtorchetmet and the pig iron imported from the Urals in Russia (United Nations Industrial Development Organization, 1996).

The city of Sumgait, which is Azerbaijan’s major manufacturing center, is considered one of the most polluted cities in the FSU (Financial Times, 1996). Sumgait is a city of about 300,000 inhabitants less than 60 miles from Baku. It is the center of Azerbaijan’s petrochemical and oil equipment manufacturing industries and the site of Azerbaijan’s aluminum smelter, the management of which has been entrusted to the Trans-World Group of the United Kingdom. The Trans-World Group also took control of the Gyandzha alumina refinery (United States-Azerbaijan Chamber of Commerce, 1997, p. 51).
The metallurgical industry in Sumgait is a major polluter. Both the aluminum smelter and steel plant release untreated emissions into the atmosphere. Neither plants are equipped with scrubbers. The steel plant discharges untreated water from steel skinning into the Caspian Sea while the aluminum smelter discharges waste water into an inadequate municipal treatment plant. Other major sources of pollution in Sumgait are the chemical and petrochemical industries (United Nations Industrial Development Organization, 1996).

The Sumgait smelter supplies five other aluminum fabricating plants in Azerbaijan including the Kradach nonferrous metals rolling plant, the Bakut metal sheet plant, the Baku aluminum rolling plant, the Azer nonferrous metals plant in Ganca, and the Baku powder metallurgy plant. Caustic soda, one of the main inputs for the refinery at Gyandzha, is produced in Sumgait as a byproduct of the chlorine industry (United Nations Industrial Development Organization, 1996).

A United Nations Development Programme plan was formed to resurrect the economy of Sumgait and correct its pollution problems. The plan calls for declaring Sumgait a special economic zone, which will offer large tax incentives and subsidies to investors while at the same time engaging in a major infrastructure overhaul. Investors will be expected to introduce environmentally cleaner technology and to contribute to an environmental cleanup fund (Financial Times, 1996).

In Soviet times, Azerbaijan supplied 70% of the FSU’s oilfield equipment, but this industry lost most of its traditional markets with the collapse of the Soviet Union (Nezavisimaya Gazeta, 1996; United States-Azerbaijan Chamber of Commerce, p. 16-19). Although exploration and development of the Caspian will spur the need for oilfield development equipment, Azerbaijan must convert its oilfield equipment manufacturing sector to produce products in accordance with western standards. In 1993, the Aznefteximmash (AZNX) association was formed that integrated 19 major oilfield and petrochemical equipment producers. AZNX was seeking foreign investment to help convert its oilfield equipment production to meet American Petroleum Institute (API) accepted standards, and has established a comprehensive program to certify that its oilfield equipment matches or exceeds western standards. A number of foreign firms have engaged in are negotiating joint ventures or supply agreements with AZNX, but the volume of business and investment is still low (Business Information Service for the Newly Independent States, 1997).

Azerbaijan’s major industry is oil production. In 1996, oil was being produced at 50 fields, of which 36 were onshore and 14 offshore in the Caspian Sea (United States-Azerbaijan Chamber of Commerce, 1997, p. 16-19). Despite its large oil resources, oil production in Azerbaijan has declined in the last 2 years, falling by 1% in 1996 compared with 1995 and 4% in 1995 compared with 1994 (Interfax Statistical Report, 1997). The oil-production sector has suffered from the general economic disruption following the breakup of the Soviet Union, which was greatly compounded by the warfare within the country in and around Nagorno Karabakh and the resulting refugee problem (United States-Azerbaijan Chamber of Commerce, 1997, p. 16-19).

Some of the main reasons cited for the fall in oil production, are a shortage of funds to replace worn out equipment and obsolete technology and the loss of traditional Russian markets for the country’s refinery products (Nezavisimaya Gazeta, 1996).

Azerbaijan mainly exports refinery products. Azerbaijan has been forced to seek new markets. Its new customers are primarily Georgia and Iran, which, however, have proven problematic trading partners. Iran resumed the purchase of petroleum products from Azerbaijan in significant volume in May only after it had been included among the companies participating in the development of Azerbaijan’s Lenkoran Deniz and Shakh Deniz oilfields. The other consumer of Azerbaijan petroleum products, Georgia, is unable to make timely payments (Nezavisimaya Gazeta, 1996).

Despite the fall in output, the future for oil production appears bright as a number of foreign firms have entered into agreements to develop the country’s oil resources. In 1996, there were four major consortia of foreign companies active in Azerbaijan. In 1994, the Azerbaijan State Oil Company (SOCAR) entered into a 30-year production-sharing agreement with a consortium of western countries called the Azerbaijan International Oil Consortium (AIOC) to develop the offshore Azeri, Chirag, and Gunesheli fields, with early oil production scheduled in the fall of 1997 and full development about 4 years later. The leading companies in the consortium are the Amoco Corp. of the United States and the British Petroleum Company, PLC. AIOC’s contract calls for initial oil production of 80,000 barrels per day (bbl/d) to 100,000 bbl/d. Development is to be in three stages, with final output from all three fields expected to reach about 800,000 bbl/d (Business Information Service for the Newly Independent States, 1997; U.S. Department of Energy, 1997). In August, the Dada-Dordug rig was launched and drilling began to extract oil from the Chirag 1 platform. Initial oil production from Chirag of about 80,000 bbl/d is scheduled to begin in 1997 (United States-Azerbaijan Chamber of Commerce, 1997, p. 16-19).

The Caspian International Oil Consortium, (CIIOC), the second major consortium, was formed to develop the Karabakh Oilfield in the Azerbaijan sector of the Caspian Sea. In February 1996, the contract was ratified by the Azerbaijan parliament. Reserves at the Karabakh Oilfield are estimated between 60 and 150 Mt of crude oil. In accordance with the contract that extends for a 25-year term, the participants in the project will share the investment as follows: Russia’s LUKOil Company, 32.5%; the Pennzoil Co. of the United States, 30%; Italy’s Agip S.P.A., 30%; and the Azerbaijan SOCAR, 7.5%. SOCAR is to receive approximately 60% to 70% of profits from the sale of oil being pumped from the field (Baku Sharag, 1997).

Test drilling in Karabakh is scheduled to begin in the middle of 1997 (Rossiyskaya Gazeta, 1996). It is planned for Karabakh to be producing 200,000 bbl/d by the years 2001-2002 (Interfax Oil, Gas & Coal Report, 1997a).

The third major consortium will develop two offshore fields in the Caspian Sea in a roughly 420-square-kilometer (km²) area, known as the Lenkoran Deniz and Talysh Deniz fields,
some 200 km south from Baku. Estimates are that the two fields on the Caspian Shelf reportedly have combined reserves of 50 to 80 Mt of crude oil (Haslani, 1997).

At yearend 1996, the major partners in the consortium were France’s Societe Nationale Elf-Aquitaine, SOCAR, and France’s Total Compagnie Francoise Des Petroles (IFAR TASS, 1997). In May 1997, the president of SOCAR signed an agreement with representatives of the Iranian National Oil Co. (NIOC), finalizing NIOC’s acquisition of a 10% stake in the consortium. Also, the German company Deminex GMBH and Belgium’s Petrofina SA successfully negotiated for 10% and 5%, respectively, of the remaining undistributed shares (Radio Free Europe-Radio Liberty, 1997a).

Azerbaijan’s deal on the Lenkoran Deniz and Talysh Deniz Caspian oilfields with France’s Elf Aquitaine and Total marked a new stage in Azerbaijan’s work with foreign companies, the President of Azerbaijan SOCAR told the Petroleum Information Agency, as these fields are in a new prospective region, about which Azerbaijan had no exploration data. He said that if positive results were obtained during the exploration period, it would raise the commercial value of more than 10 prospective structures that geologists have discovered in this region. The head of SOCAR also praised the new deal because SOCAR has got a 25% stake, its biggest so far (Interfax Oil, Gas & Coal Report, 1997b).

A fourth agreement for the Ashrafi and Dan Ulduzu fields was signed in December 1996 and ratified by the Azerbaijan parliament in February 1997 (Interfax Petroleum Report, 1997b). The deposits, reportedly, are estimated to contain 150 Mt of oil and up to 50 billion cubic meters of gas. The agreement calls for SOCAR having a 20% stake in the project, the Amoco Corp. of the United States, 30%; the Unocal Corp. Of the United States, 25.5%; Japan’s Itochu, 20%; and Saudi Arabia’s Delta, 4.5%. Russia’s LUKoil is not a direct participant in the consortium but could acquire an interest, since SOCAR plans to link the development of Dan Ulduzu and Ashrafi with that of the nearby Karabakh deposit (Interfax Petroleum Report, 1996).

At the start of 1997, a fifth consortium was formed led by France’s Elf Aquitaine and Total to develop the Lenkoran Talysh Field (Interfax Petroleum Report, 1997c).

The existing oil pipeline capacity is not adequate to transport initial oil from the AIOC’s project. Two routes, a northern and western, will be used to transport the initial oil. The northern route goes from Baku via Chechnya to Novorossiyansk on the Black Sea where the oil would be loaded on to tankers for passage through the Bosphorus and Dardanelles. The northern route requires constructing a 30-kilometer pipeline from the landfall of the offshore oil at Sangachel to Sumgait north of Baku where it will link to an existing pipeline. The schedule for oil exports to commence via the northern route had been encountering a number of delays, with the starting date set for the fall of 1997 (United States-Azerbaijan Chamber of Commerce, 1997, p. 16-19).

The western route involves building a new pipeline from Sangachel in Azerbaijan west to the Georgian border where it will link with a Georgian pipeline to the Black Sea port of Supsa. The Georgian section of the pipeline requires significant repairs. Completion of construction of the western route is scheduled for the end of 1998. The two routes have a combined capacity of about 210,000 bbl/d, with potential for expansion (United States-Azerbaijan Chamber of Commerce, 1997, p. 16-19).

Most oil exports from Azerbaijan have been of refinery products processed in two refineries near Baku with a combined throughput capacity of more than 20 million metric tons per year. This is more than double the country’s current oil production. A small amount of crude oil was being imported from Kazakhstan for refining. The refinery products produced include aviation fuel, fuel oil, gasoline, lubricants, and liquefied petroleum gases. The offshore oil that is under development, however, will be exported as crude oil.

A debate was taking place among Caspian region states over how the Caspian Sea should be treated under international law. Russia cites a 1940 treaty between Iran and the Soviet Union, which says that the Caspian is a sea, and therefore should be developed in common by all five coastal states. Azerbaijan takes the position that the Caspian should be considered a lake and divided between the five bordering states (Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan) into sectors. Russia opposes dividing the Caspian into national sectors and wants it declared a sea so that all five Caspian nations can have joint access to its resources. Azerbaijan’s President said that the positions of Azerbaijan and Kazakhstan coincide on the issue of determining the legal status of the Caspian. He stressed that the principles of sectoral division are fully in line with international norms (Interfax Petroleum Report, 1997a). Iran, another of the states bordering the Caspian, has taken a position more closely mirroring that of Russia in opposition to that of Azerbaijan, while Turkmenistan, another Caspian littoral state, first took a position close to Russia’s, but has seemed to switch to one that favors full national sectoral division of the Caspian (Radio Free Europe-Radio Liberty, 1997b).

Representatives from four of the five Caspian Sea coastal states signed an agreement in Ashgabat, Turkmenistan, in November on the status of the Caspian Sea. The agreement, granting each state an exclusive economic zone of 45 miles offshore, was recognized by all parties except Azerbaijan. Each country came into the meeting with its own proposal for the zone: Iran favored a 10-mile zone; Russia, 20 mile; Turkmenistan, 60 mile; Kazakhstan, 80 mile; and Azerbaijan wanted the entire sea divided into sectors. The signatories regard the resources beyond the 45-mile zone as subject to “joint ownership.” Portions of Azerbaijan’s Oilfields lie beyond the 45-mile zone and its representative did not sign the agreement (OMRI, 1996).

Azerbaijan has acted upon the proposition that each state should have rights to oil and gas resources developed in its own offshore areas. In 1996, Turkmenistan specifically raised the issue that the ownership of the Azerci Oilfield and part of the Chirag Oilfields in the Caspian belong to it, not Azerbaijan, as they are located in Turkmenistan’s territorial waters. Turkmenistan makes these claims based on agreements Iran and the Soviet Union signed in 1921 and 1940 and its interpretation
of the division of the Soviet part of the Caspian Sea among the Soviet republics. Azerbaijan has rejected Turkmenistan’s claims (Interfax Oil, Gas & Coal Report, 1997b).

Until 1985, Azerbaijan was self-sufficient in natural gas, with the country producing up to 16 billion cubic meters per year of natural gas. Since that time natural gas production has been declining by 1 one billion cubic meters per year. Natural gas is the country’s main domestic fuel. In 1990, Azerbaijan began importing gas from Iran and Russia and in 1992 began importing gas from Turkmenistan. Azerbaijan is in debt to Turkmenistan for natural gas and reached an agreement on a 4-year repayment schedule. Gas from Iran has become too expensive to purchase. Gas shortages in the country have caused restrictions on gas usage in a number of cities including Ali-Bayramli, Gyandzha, Mangachevir, and Sumgait and in 21 other areas. Associated gas production from the new oilfields under development will augment Azerbaijan’s gas supplies.

In September, the World Bank approved a $20.2 million equivalent credit to Azerbaijan to help finance a Gas System Rehabilitation Project. The project, financed by funds from the International Development Association (IDA), will assist in the Government’s efforts to rehabilitate Azerbaijan’s natural gas distribution network and improve the efficiency of gas delivery and use. Because natural gas is the main fuel used in Azerbaijan, its availability is crucial to all aspects of economic activity. Therefore, the Government has placed a high priority on upgrading the country’s natural gas infrastructure and improving the efficiency of gas use. Azerbaijan’s gas transmission/distribution network extends to over 80% of the population, and comprises 4,500 km of high-pressure transmission lines, seven compressor stations, and over 31,000 km of medium- and low-pressure distribution lines. As in many countries of the FSU, the gas transmission and distribution subsectors in Azerbaijan are in need of substantial investment for modernization and rehabilitation. Many commercial and industrial customers do not have meters, household metering is nonexistent, and installed meters have questionable accuracy. At least 15% of the gas supply is not being accounted for or billed to customers. Parts of the system suffer from severe corrosion, and it is estimated that substantial volumes, as much as 5%, are lost through leaky pipes, with adverse impacts on the environment and public safety (World Bank, 1996).

The World Bank-assisted project is intended to reduce expenditure on pipeline replacement through the restoration of cathodic protection systems. In addition, the World Bank project is intended to increase efficiency of gas use through incentives created by the introduction of effective metering and reduction of gas leakage due to replacement of corroded or damaged pipe.

The project will also facilitate the transition of the state gas company Azergiz to a commercially based operation and will support the development of a legal and regulatory framework in the sector. These are considered by the World Bank to be first steps in creating a market-based-gas-distribution sector organization, as well as attracting future private sector participation (World Bank, 1996).

Azerbaijan is poised to acquire great additional wealth with the development of its offshore oilfields through international consortia. However, the country is concerned that it achieve balanced development, and for that reason is making efforts to revive its other industries, including its mining and metallurgical industries. The creation of a free economic zone in Sumgait, a major industrial center, will be one test as to how well Azerbaijan is currently positioned to attract foreign investment outside of its oil sector.

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