

## THE MINERAL INDUSTRY OF

# ALBANIA

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In 1998, Albania continued to experience an economic downturn as evidenced by the bankruptcy filings by such minerals industry enterprises as Albakri (copper), Albchrome (chromite), Albpetrol (oil and gas and refining), and GeoAlba (geologic exploration and survey). The chief mineral commodities that traditionally had been produced in Albania were chromite, copper, ferrochromium, nickeliferous iron ore, and petroleum refinery products, all of which, until recently, constituted the dominant component of the country's foreign exchange earnings (Kocibelli, 1999). In 1998, the output of many minerals continued to decline but increases in output for such commodities as copper reflected a virtual restart of operations. (See table 1.) This performance may be attributable to the high level of military and political tensions in the nearby Balkan areas and to the slow transition from centrally planned to a market economy system.

From the late 1970's through 1990, Albania's chromite mining operations were among the most important components of the mineral industry. During this period, Albania was a leading world producer and exporter of chromite and often was ranked second in terms of export and third in terms of production. The export of chromite and ferrochromium also was among the country's chief sources of foreign exchange.

Although some chromite deposits and outcroppings can be found throughout Albania, the principal commercial chromite deposits are in ultrabasic massifs in the Midrita region, in the north-central and northern parts of the country. The mainly podiform ore was mined at seven mining districts, of which Batra and Bulquize, about 30 kilometers (km) northeast of Tirana, represented about two-thirds of Albania's total production capacity. Albanian ore graded from 18% to 43% chromium oxide ( $\text{Cr}_2\text{O}_3$ ). The lumpy ores, grading 38% to 42%  $\text{Cr}_2\text{O}_3$ , and the concentrates, grading from 49% to 53%  $\text{Cr}_2\text{O}_3$ , were designated for export. About 25% of the ore was suitable for direct shipment; the balance was divided equally between beneficiation and shipment as feedstock for the Burrel ferrochromium plant (Steblez, 1994).

Albania's output of copper ore, grading between 1.5% to 4% copper, had reached its greatest level at about 1 million metric tons per year in the late 1980's. All copper ore was mined underground. With the exception of the Rehove Mine and beneficiation plant in southeastern Albania, copper was mined, processed, smelted, and refined largely in the northern part of the country. The largest copper mining and beneficiation complex, at Fushe Arrez, produced more than 320,000 metric tons per year (t/yr) of ore during this period. After beneficiation, copper concentrates were smelted at the Gjegjan (Kukes), Lac, and Rubic pyrometallurgical primary smelters. The refineries

and rolling mills at Lac and Rubic produced copper wire, most of which was exported.

Albania's commercial resources of lateritic nickeliferous iron ore were estimated to be about 300 million metric tons (Mt). In the 1980's, yearly output ranged from 1 to 1.2 Mt of ore, of which about one-half was consumed at the Elbasan iron and steel works to produce pig iron, a small amount of steel, and salts of nickel and cobalt.

Deposits of commercial-grade nickeliferous iron ore were exploited in ultrabasic massifs, near Pogradec, in east-central Albania. The principal mines were at Bitinska, Guri i Kuq, and Prrenjas. Between 1963 and 1991, the largest mining operation, at Prrenjas, produced about 600,000 t/yr of ore. The majority of Albanian ores are lateritic and grade about 35% to 45% Fe, 1.4% Ni, and 0.05% Co. The Bitinska deposit was believed to contain considerable resources of lateritic and silicate ores; only the lateritic material had, however, been mined. Production of ore in 1994 had ceased because of depressed international and domestic demands.

Albania's bauxite deposits are mainly in the central part of the country, just east of Tirana, the country's capital, as well as in the northern Alpine region near the border with the former Yugoslavia. Bauxite reserves were estimated to be about 12 Mt. The largest deposit, at Daijti, contained approximately 8 to 9 Mt of resources with an average grade of 39% to 40% aluminum oxide, 13% silica, 6% sulfur, 4% to 5% calcium oxide, and 18.3% iron oxide.

In past years, the production of lignite, hydroelectric power, natural gas, and petroleum and the low consumption of fuel made Albania a net exporter of energy. Because of reduced hydroelectric power output resulting from several years of drought, a general downturn in petroleum production, and increasing indigenous energy requirements, the status of Albania as net energy exporter has become less certain. The country's exploitable coal resources amounted to about 158 Mt of low-calorie lignite. Lignite was mined for domestic consumption, mainly at thermal electric power stations.

Albania had about 17,300 km of highways, railroads, and waterways. The railroad system consisted of 509 km of 1,435-meter standard gauge track and 34 km of narrow gauge single track. The road system consisted of 6,700 km of highways and main roads and 10,000 km of forest and rural roads. About 60% of all domestic cargo was transported by truck; 35%, by rail; and 2% by coastal shipping along the Adriatic Sea and sections of Lakes Ohrid, Prespa, and Scutari. Nickeliferous iron ore mining areas at Guri i Kuq and were linked by rail to processing centers at Elbasan. The copper mining district at Shkoder also was linked by rail to the copper smelter and refinery at Lac. Albania

had a 1,630-megawatt generating capacity, mostly from hydroelectric sources. The country's petroleum and natural gas sector had about 145 km of crude oil pipeline, 55 km of refinery products pipeline, and 64 km of pipeline for natural gas. Seaports were at Durres, Sarande, and Vlore; most bulk mineral cargoes were handled at Durres.

### **References Cited**

- Kocibelli, Rushan, 1999, Albania: Mining Journal Mining Annual Review, June 25, v. 332, no. 8537, p. 51.  
Stblez, Walter, 1994, The chromium resources of Albania: International Geology Review, August, v. 36, no. 8, p. 785-795.

TABLE 1  
ALBANIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/ METALS	1994	1995	1996	1997	1998 e/	
Bauxite e/	2,000	1,000	1,000	500	--	
Chromium:						
Chromite, gross weight e/	thousand tons	223	243	236	157	124 3/
Marketable ore	do.	107	129	113	84	72 3/
Concentrate	do.	11	31	30	22	14 3/
Ferrochromium	do.	33	43	31	31	29 3/
Copper:						
Ore:						
Gross weight	do.	277	258	188	25	89 3/
Concentrate		9,000	17,000	11,000	1,000	14,000 3/
Cu content e/		2,000	3,800	2,500	220	3,200
Metal, primary:						
Smelter		2,000	2,900	1,424 r/	--	800 3/
Refined e/		1,000	1,000	1,000	--	--
Iron and steel:						
Pig iron		10,000	10,000	10,000	10,000	10,000
Crude steel		5,000	5,000	5,000	5,000	5,000
Rolled steel		1,000	1,000	1,000	1,000	1,000
Nickel: e/						
Mine output, Ni content		75	--	--	--	--
Plant production, Ni content		50	--	--	--	--
Metal, Ni cathode		20	--	--	--	--
INDUSTRIAL MINERALS						
Cement, hydraulic e/	thousand tons	100 r/	200	200	150 r/	150
Clay, kaolin e/		500	500	500	500	500
Dolomite e/		50,000	50,000	50,000	50,000	50,000
Fertilizer, manufactured: e/						
Phosphatic		10,000	10,000	5,000	5,000	3,000
Urea		4,000	4,000	3,000	3,000	3,000
Nitrogen, N content of ammonia e/		15,000	15,000	15,000	10,000	10,000
Olivinite e/		300	300	300	300	300
Phosphate rock (12% to 15% P <sub>2</sub> O <sub>5</sub> ) e/		1,500	1,000	1,000	1,000	1,000
Pyrite, roasted e/		7,000	5,000	-- r/	--	--
Salt e/		10,000	10,000	10,000	10,000	10,000
Sodium compounds, n.e.s., soda ash, calcined e/		150	100	100	100	--
Sulfuric acid e/		1,000	1,000	1,000	500	500
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bitumen, natural 4/	thousand tons	34	33	20	17	10
Coal, lignite	do.	120	81	69	40	33 3/
Gas, natural, gross production 5/	million cubic meters	52	28	23	18	16 3/
Petroleum:						
Crude:						
Gross weight	thousand tons	535	521	488	360	309 3/
Converted	thousand 42-gallon barrels	3,500	3,500	3,300	2,400 e/	2,000
Refinery products e/	do.	1,000	1,000	1,000	500	200

e/ Estimated. r/ Revised.

1/ Table includes data available through May 2000.

2/ In addition to commodities listed, a variety of industrial minerals and construction materials (common clay, quartz, titanomagnetite, stone, and sand and gravel) are produced, but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

3/ Reported figure.

4/ Includes asphalt and bitumen produced at petroleum refineries.

5/ Separate data on marketable production are not available, but gross and marketed output are regarded as being nearly equal.

TABLE 2  
ALBANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1998 1/

(Thousand metric tons unless otherwise specified)

Commodity	Location of main facilities (all state-owned)	Annual capacity
Cement	Elbasan, 32 kilometers southeast of Tirana; Kruje, 20 kilometers northwest of Tirana; Shkoder, 85 kilometers northwest of Tirana; and Vlore, southwest of Tirana	1,200
Chromite	Bater (including Bater I and II and Martanesh), 40 kilometers northwest of Tirana	450
Do.	Bulquize (including Bulquize south, Fush, Termove, and Todo Maco), 35 kilometers northwest of Tirana	450
Do.	Kalimash, 60 kilometers north of Tirana	250
Do.	Kam, 70 kilometers north of Tirana	100
Do.	Klos, 20 kilometers northeast of Tirana	50
Do.	Pogradec (including Katjiel, Memelisht, Pojske, Pishkash, and Prenjas), 50 kilometers east of Tirana	100
Ferrochromium	Burrel, 35 kilometers northeast of Tirana	40
Do.	Elbasan, 32 kilometers southeast of Tirana	36
Copper:		
Ore	Fushe-Arrez, 80 kilometers north of Tirana	350
Do.	Gjejan, 100 kilometers northeast of Tirana	150
Do.	Golaj (including Nikoliq and Pus), 120 kilometers northeast of Tirana	150
Do.	Kurbnesh-Perlat, 55 kilometers northeast of Tirana	100
Do.	Rehove, 110 kilometers southeast of Tirana	100
Do.	Reps (including Gurch, Lajo, Spac, and Thurr), 55 kilometers north of tirana	350
Do.	Rreshen, 50 kilometers north of Tirana	50
Do.	Shkoder (including Palaj, Karma I and II), 85 kilometers northwest of Tirana	100
Smelter	Kukes, 110 kilometers northeast of Tirana	6
Do.	Lac, 35 kilometers northwest of Tirana	7
Do.	Rubik, 50 kilometers north of Tirana	4
Iron ore	Prenjas (Bushtrica, Prenjas, Skorska I and II), 70 kilometers southeast of Tirana	650
Do.	Guri i Kuq (including Cervenake, Grasishta, Guri i Kuq, Hudenisht, and Guri i Pergjrgjur), 25 kilometers east of Tirana	500
Steel	"Steel of the Party" Metallurgical Combine at Elbasan	150
Nickel, smelter	Elbasan	6
Coal, lignite	Maneze, Mezes, and Valias Mines in Tirana Durres area; Krabe Mine, 20 kilometers southeast of Tirana; Alarup and Cervnake Mines, in Pogradec area, 80 kilometers southeast of Tirana; Mborje-Drenove Mine in Korce area, 85 kilometers southwest of Tirana; and Memaliaj Mine in Tepelene area, 110 kilometers south of Tirana	2,500
Natural gas	million cubic feet Gasfields on southwest Albania between Ballsh and Fier	16,000
Petroleum:		
Crude	42-gallon barrels per day Oilfields at Marineze, Ballsh, Shqisht, Patos, Kucova, Gorrisht, and others	35,000
Refined	do. Refineries: Ballsh, Cerrik, Fier, and Stalin	33,000

1/ The operational status of the facilities tabulated for 1998 is uncertain.