

THE MINERAL INDUSTRY OF

CROATIA

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Prior to the dissolution of Yugoslavia, Croatia was the country's chief producer of natural gas and petroleum, a leading producer of iron and steel, and a variety of industrial minerals that included bentonite, cement, and gypsum. However, from mid-1991 to early 1992, Croatia was actively involved in a civil war, mainly within the country's own borders. The largely Serbian population in Croatia's Kraina region declared independence from Croatia when certain issues concerning Serbian autonomy within this region apparently were not resolved. By mid-1992, the United Nations supervised a cessation of hostilities within Croatia on the basis of status quo. However, the economy of Croatia reportedly was severely damaged by the conflict. The country's minerals industry reportedly suffered extensive damage at facilities in the aluminum, petroleum and steel sectors, in addition to shortages of raw materials that were obtained in the past from other Republics of the former Yugoslavia. Reportedly, in 1994, the economic situation had not been significantly rectified and there was little activity in the country's minerals producing sectors.

In view of the civil war that was fought within Croatia for nearly 1 year, the country's Government presumably focused most of its attention on maintaining Croatia's integrity and independence. Some activities by the Government apparently were directed at maintaining mineral industry operations, when possible, to support the country's war effort and to help maintain socially acceptable levels of employment. However, few details were available during the year concerning specific Government policies that addressed both economic reform or long-term plans to rationalize the major enterprises in Croatia's mineral industry.

The production table for Croatia was compiled from data presented in a variety of statistical publications of the former Yugoslavia through 1992. The major portion of the country's production statistics, however, was obtained from "Statisticki Ljetopis 1992" published by the Central Bureau of statistics in Zagreb, Croatia, for a limited number of commodities through 1992. In addition, statistical production data was obtained from "Industrijska Proizvodnja," an annual statistical compendium published in Belgrade through 1990 that presented production data by constituent federal republics, and by total output for the former Yugoslavia. Although stoppages and dislocations in Croatia's mineral industry were reported from mid-1991 through 1992 by a variety of sources published outside of the former Yugoslavia, some production was believed to have

occurred at most of the country's mineral industry facilities, although at perhaps significantly reduced levels of output in 1992 and 1993. (See table 1.) Table 2 lists the apparent administrative bodies and subordinate production units for the main branches of the country's mineral industry in 1992. (See table 2.)

The former domestic Yugoslav market was an important element in Croatia's mineral trade. With the dissolution of Yugoslavia, commerce with the country's former domestic trading partners became classified as foreign trade. Moreover, trade with Croatia's former trading partners in the former constituent republics of Yugoslavia largely had become untenable because of the civil war in Croatia during 1991-92 and in the Republic of Bosnia and Herzegovina during 1991-93. Additionally, international trade embargoes were levied against several republics of the former Yugoslav federation that were Croatia's traditional commercial partners. Consequently, Croatia sought to orient its trade to a greater degree toward markets in Europe.

Energoinvest operated bauxite mines in the Republics of Bosnia and Herzegovina and Croatia. Jadranski Aluminium's (Jadral) operations were entirely in Croatia. The country's monohydrate (boehmitic) bauxite deposits were suitable for metallurgical end use.

At yearend 1991, Croatia reported extensive damage to the Boris Kidric aluminum smelter at Sibenik as a result of the fighting. The smelter reportedly remained closed through 1994 and Croatian authorities have not indicated when the operation would be restarted. Before the conflict damaged the Sibenik aluminum smelter, Croatia's primary aluminum smelting capacity was approximately 25% of the total for the former Yugoslavia.

Reportedly, Croatia's steel industry facilities were severely damaged in the fighting at the SP MK Zeljezare Sisak in the central part of the country and at the Jadranska Zelelzara at Split on the Dalmatian coast. Because of the damage sustained by the country's steel plants during the 1991-92 fighting and the loss of traditional markets in the former Yugoslavia, industry officials indicated that steel production at these facilities had declined by more than 50% compared with that of 1990. Dalmacija Dugi Rat Carbide and Ferro Alloy Works (Dalmacija), a producer of ferrochromium near Split in Croatia, also reported disruptions of production during the period of military conflict.

From December 1992 to November 1993, shortages of electric power forced the cessation of operations at

Dalmacija. Similarly, operations at the Pef Sibenik ferromanganese plant were interrupted for 6 months in 1993 because of power shortages in the Dalmatian provinces of Croatia.

Croatia has produced sufficient quantities of cement, clays, lime, nitrogen, pumice, stone, and other industrial minerals to meet most of the needs of the country's construction and construction materials industries, as well as some of the requirements of the domestic chemical industry. The importance of industrial minerals will grow because of post-war reconstruction requirements and rationalization of Croatia's economy and infrastructure.

Croatia's natural gas and petroleum industry apparently did not suffer sustained damage during the fighting from 1991 to 1992. The production of both natural gas and petroleum reportedly continued, but at somewhat lower levels of output. In 1993, industry spokespersons indicated that domestic production of natural gas and petroleum was sufficient to meet one-half of the country's needs for these fuels. The major foreign supplier of petroleum to Croatia during the year was Iran.

The transition of Croatia's economy to a market-based system will require a reevaluation of the country's mineral resources from a market perspective. Mineral resources in Croatia were assessed according to the Soviet classification system, which is not comparable to the system used in the United States. The economic criteria used in this system were designed for a centrally planned economic system that did not account for production costs in the same way as a market economy system. For a full explanation of the Soviet reserve classification system, refer to the reserve section in the report on Russia.

Croatia's inland system of transportation included 35,554 kilometers (km) of railroads, highways, and inland waterways. The railroad system consisted of 2,698 km of 1.435-gauge track, of which about 930 km was electrified. The highway and road system amounted to a total of 32,071 km of surface, of which paved surfaces amounted to 23,305 km; 8,439 km was gravel and 327 km was earth surfaced. The country's merchant marine fleet consisted of 11 ships totaling 131,880 deadweight tons. Pipelines for crude petroleum were 670 km in length, while those for refinery products and natural gas were 310 km and 20 km, respectively.

The future composition of Croatia's mineral industries will depend on the final resolution of the political and territorial dispute between the Government of Croatia and the leadership of the predominantly Serbian population in the Kraina region, and on the extent to which policies of the Government of Croatia will effect a transition of the country's economy to a market-based economic system.

¹ Text Prepared Mar. 1995.

Major Sources of Information

Central Bureau of Statistics
Zagreb, Croatia

Major Publications

Statisticki Ljetopis 1992 (Statistical Yearbook for 1992)
Zagreb, Croatia.

TABLE 1
CROATIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993	1994 /e
METALS					
Aluminum:					
Bauxite	309,000	112,000	6,880	1,690	1,600
Metal, ingot; primary and secondary	74,000	54,500	20,400	26,000	25,000
Iron and steel:					
Metal:					
Ferrochromium	37,500	72,800	56,500	27,300	31,700
Ferromanganese	31,800 e/	22,000 e/	10,000 e/	10,000	10,000
Ferrosilicomanganese	60,600 e/	60,000 e/	15,000 e/	40,000	30,000
Crude steel:					
From Siemens Martin furnaces	253,000	94,400	--	--	--
From electric furnaces	170,000	120,000	102,000	73,800	73,000
Total	423,000	214,000	102,000	73,800	73,000
Silver e/ kilograms	2,000	1,600	800	500	500
INDUSTRIAL MINERALS					
Barite concentrate e/	2,500	2,200	1,500	1,500	1,500
Cement thousand tons	2,650	1,710	1,770	1,680	1,700
Clays: e/					
Bentonite	30,000	15,000	10,000	10,000	10,000
Ceramic clay	10,000	15,000	10,000	10,000	10,000
Fire clay, crude	43,000	50,000	30,000	30,000	30,000
Gypsum: e/					
Crude	99,000	80,000	50,000	50,000	50,000
Calcined	11,000	11,000	7,000	7,000	6,000
Lime thousand tons	436	261	144	156	150
Nitrogen: N content of ammonia do.	345	348	426	345	300
Pumice and related materials, volcanic tuff e/	700	650	600	500	500
Quartz, quartzite, glass sand	234,000	159,000	39,600	23,300	25,000
Salt, all sources	24,000	18,300	28,600	29,600	30,000
Sand and gravel, excluding glass sand e/ thousand cubic meters	3,000	2,000	2,000	2,000	2,000
Stone, excluding quartz and quartzite:					
Dimension: Crude:					
Ornamental cubic meters	1,710,000	1,510,000	1,180,000	1,130,000	1,100,000
Crushed and brown, n.e.s. thousand cubic meters	6,250	4,450	3,280	4,160	4,000
Other e/ cubic meters	45,000	30,000	25,000	20,000	20,000
Sulfur, byproduct of petroleum e/	2,000	2,000	2,000	2,000	2,000
MINERAL FUELS AND RELATED MATERIALS					
Carbon black	30,600	18,800	13,500	17,100	15,000
Coal:					
Bituminous thousand tons	155	146	120	105	100
Brown do.					
Lignite do.					
Coke do.	556	442	409	420	400
Natural gas, gross production million cubic meters	1,990	1,840	1,820	2,070	2,000
Petroleum: e/					
Crude:					
As reported thousand tons	2,080	1,900	1,740	1,730	1,700
Converted thousand 42 gallon barrels	15,400	14,100	14,100	12,800	12,000

e/ Estimated.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits.

2/ Table includes data available through Mar. 1995.

3/ In addition to commodities listed, common clay also was produced, but available information was inadequate to make reliable estimates of output levels.

TABLE 2
CROATIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Aluminum		Boris Kidric, Tvornica Lasih Metala	Smelter at Sibenik, Croatia	75
Bauxite		Jadral, Jadranski Aluminijum	Mines in at Obrovac, Drnis and other locations	450
Coal:				
Bituminous		Istarski Ugljenokopi Rasa	Mines at Labin and Potpican.	500
Cement		Dalmacija Cement	Partizan plant at Kasel Sucurac	1,525
Do.		do.	Prvoborac plant at Solin	884
			"10 Kolovoz" plant at Solin Majdan,	440
Do.		do.	Renko Spèrac plant at Omis	140
Natural gas	million cubic feet	Industrija Nafte (INA)	Natural gasfields in Bogsic Lug, Molve, and others	70,000
Petroleum, crude:	thousand barrels per day	do.	Oilfields in Croatia and Slovenia: Benicanci, Zutica, Struzec, Ivanic Grad, Lendava, and others	70
		do.	Industrija Nafte (INA): Refineries at Urinj and Rijeka	160
		do.	Refinery at Sisak	150
Pig iron		Metalurški Kombinat "Željezara Sisak"	2 blast furnaces at Sisak	235
Salt	cubic meters per year	Solana "Pag," Solana "Ante Festin"	Marine Salt: Pag Island	13
Steel, crude		SP MK Željezare Sisak	Plant at Sisak	401
Do.		Jadranska Zeležezara Split	Plant at Split	120