

THE MINERAL INDUSTRY OF

CROATIA

By Walter G. Steblez

Prior to the dissolution of the Socialist Federal Republic of Yugoslavia, Croatia was the Federation's chief producer of natural gas and petroleum, a leading producer of iron and steel, and produced 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 former Yugoslavia. Reportedly, in 1995, 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 Government activities 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 1994. The major portion of the country's production statistics, however, was obtained from "Statisticki Ljetopis 1994" published by the Central Bureau of Statistics in Zagreb, Croatia, for a limited number of commodities through 1993. (See table 1.) 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 Bosnia and Herzegovina during 1992-95. 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. 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.)

Energoinvest operated bauxite mines in Bosnia and Herzegovina and Croatia. Jadranski Aluminium's 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 at Sisak in the central part of the country and at the Jadranska Zelezara 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, a producer of ferrochromium near Split in Croatia, also reported disruptions of production during the period of military conflict. 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.

Reportedly, the major foreign supplier of petroleum to Croatia in recent years was Iran. Croatia's pipelines for crude petroleum were 670 km in length, while those for refinery products and natural gas were 310 km and 20 km, respectively.

TABLE 1
CROATIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1991	1992	1993	1994	1995e/
METALS					
Aluminum:					
Bauxite	112,000	6,878 r/	1,690	1,400 r/e/	1,500
Metal, ingot; primary and secondary	54,500	20,406 r/	25,956 r/	30,000 r/e/	30,000
Iron and steel:					
Metal:					
Ferrochromium	72,800	56,500	27,300	31,700	31,000
Ferromanganese	22,000 e/	10,000 e/	10,000	10,000	10,000
Ferrosilicomanganese	60,000 e/	15,000 e/	40,000	30,000	30,000
Steel, crude:					
From Siemens Martin furnaces	94,400	--	--	--	--
From electric furnaces	120,000	101,942 r/	73,815 r/	73,000	75,000
Total	214,000	102,000	73,800	73,000	75,000
Silver e/ kilograms	1,600	800	500	500	--
INDUSTRIAL MINERALS					
Barite concentrate e/	2,200	1,500	1,500	1,500	1,500
Cement thousand tons	1,710	1,768 r/	1,683 r/	1,700	1,700
Clays: e/					
Bentonite	15,000	10,000	10,000	10,000	10,000
Ceramic clay	15,000	10,000	10,000	10,000	10,000
Fire clay, crude	50,000	30,000	30,000	30,000	30,000
Gypsum: e/					
Crude	80,000	50,000	50,000	50,000	50,000
Calcined	11,000	7,000	7,000	6,000	6,000
Lime thousand tons	261	144	156	150	150
Nitrogen, N content of ammonia do.	348	426	345	300	300
Pumice and related materials, volcanic tuff e/	650	600	500	500	500
Quartz, quartzite, glass sand	159,000	39,592 r/	23,344 r/	25,000	15,000
Salt, all sources	18,300	28,585 r/	29,643 r/	30,000	28,000
Sand and gravel, excluding glass sand e/ thousand cubic meters	2,000	2,000	2,000	2,000	2,000
Stone, excluding quartz and quartzite:					
Dimension: Crude:					
Ornamental square meters	1,510,000	1,178,622 r/	1,133,873 r/	1,100,000	1,100,000
Crushed and brown, n.e.s. thousand cubic meters	4,450	3,280	4,160	4,000	4,000
Other e/ cubic meters	30,000	25,000	20,000	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	18,800	13,479 r/	17,123 r/	15,000	20,000
Coal:					
Bituminous thousand tons	146	120	105	100	100
Brown do.					
Lignite do.					
Coke do.	442	409	421 r/	400	350
Natural gas, gross production million cubic meters	1,840	1,820	2,068 r/	2,000	2,000
Petroleum: e/					
Crude:					
As reported thousand tons	1,900	1,743 r/	1,729 r/	1,700	1,600
Converted thousand 42 gallon barrels	14,100	14,100	12,800	12,000	12,000

e/ Estimated.

1/ Table includes data available through May, 1996.

2/ 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 1995

(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	1525
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	do.	Natural gasfields in Bogsic Lug, Molve, and others	70,000
Petroleum:			Oilfields in Croatia and Slovenia:	
Crude	thousand barrels per day	Industrija Nafte (INA)	Benicanci, Zutica, Struzec, Ivanic Grad, Lendava, and others	70
Do.	do.	do.	Refineries at Urinj and Rijeka	160
Do.	do.	do.	Refinery at Sisak	150
Pig iron		Metalurski Kombinat "Zeljezara 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 Zeljezare Sisak	Plant at Sisak	401
Do.		Jadranska Zelejezara Split	Plant at Split	120