

THE MINERAL INDUSTRY OF

SLOVENIA

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In 1996, Slovenia continued to produce modest amounts of mineral commodities that included aluminum, ferroalloys, and steel and fossil fuels that included, coal and petroleum and natural gas. Within the framework of the minerals industry of the former Yugoslavia, Slovenia also had been an important producer of lead, mercury, uranium, and zinc. Although industrial minerals and fossil fuels were produced to meet Slovenia's industrial requirements, the country was a net importer of many of these commodities. Slovenia had the most modern and technologically advanced fabricating industry among the republics of the former Yugoslavia and a per capita national income equal to about twice the average of the former Yugoslavia.

Following the dissolution of Yugoslavia in 1991, the Government of Slovenia focused its efforts to limit economic dislocations in terms of employment, industrial production, and foreign commerce. Concurrently, the Government sought to limit the rate of inflation and to bring the country's economy in line with Western European market practices. Enterprises in the country's mineral industries no longer were required to produce at all costs, as many of them did under central economic planning in the former Yugoslavia. The policy of closing unprofitable operations, as had been the case with mercury and uranium mining, reportedly would be continued. Also, the Government reportedly attempted to create financial incentives for foreign investors relative to the country's steel industry.

Major concern over environmental issues in Slovenia had warranted the inclusion of provisions for protecting the environment in the country's new constitution (Republic of Slovenia). The constitution stressed the importance of protecting the environment and defined the Government's role in controlling the quality of the country's environment. In 1993, a draft of the Environmental Protection Law outlined the Government's general policies for protecting the environment and specified regulations for the commercial use of natural resource, the establishment of an inspection directorate, and the establishment of provisions for monitoring, environmental impact assessments, and research. The Slovenian Ministry of Environmental Protection and Physical Planning was established to undertake this work. Major sources of pollution included the use of lignite and brown coal, nonferrous metals processing, and the petrochemical sectors.

The production table for Slovenia was compiled from data presented in *Statistični Letopis Republike Slovenije* (The Statistical Abstract of the Republic of Slovenia) for 1993 (latest available data) and in a variety of earlier statistical publication of the former Yugoslavia through 1991. (See table 1.)

The former domestic Yugoslav market was an important element in Slovenia's mineral trade. With the dissolution of Yugoslavia, commerce with the country's former domestic trading partners became classified as foreign trade. Moreover, most trade with Slovenia's former trading partners in the former republics of Yugoslavia had become untenable because of the civil wars in the Republics of Bosnia and Herzegovina and Croatia in 1991-93. Additionally, international trade embargoes were levied against Serbia and Montenegro of the former Yugoslav federation, which also were Slovenia's traditional commercial partners. Consequently, Slovenia oriented its trade to a greater degree toward markets in the European Union.

Table 2 lists the apparent administrative bodies as well as subordinate production units of the main branches of the country's mineral industry in 1996.

Aluminum and steel were the major metal commodities produced in Slovenia. Slovenia produced alumina and aluminum at the refinery and smelter operated by Talum d.o.o., formerly Unial, Tvoronica Glinice i Aluminija Boris Kidric in Kidricevo. Lacking a domestic bauxite mining industry, Slovenia, in past years, relied on other republics of the former Yugoslavia as suppliers of bauxite and other major minerals. In 1996, the need to obtain new sources of bauxite continued to be a concern for the country's aluminum industry. Also, in 1996, following a cooperative agreement with Hydro Aluminium A.S. of Norway, a new aluminum extrusion facility was added to Talum d.o.o.'s casthouse. Aluminum extrusion began in March on a trial basis. According to Hydro Aluminium sources, the new extrusion facility would consume about 35,000 metric tons of aluminum ingot annually at Talum, or more than one-half of total output of primary aluminum in Croatia. A large share of the extruded metal is to be exported nearby countries, such as Italy (Sunnana, 1996).

Slovenia's steel industry consisted of three steel mills operated by Zdruzeno Podjetje Slovenske Zeljezare at Jesenice, Ravna na Kuroskem, and Štore. The combined capacity at the facilities was about 800,000 metric tons per year of steel. Although open-hearth steel capacity at the Jesenice steel mill amounted to about 300,000 t/yr, only a small portion of this capacity had been utilized in recent years. More than 90% of the steel produced in the country was at electric furnaces at the three steel mills that used steel scrap as a feedstock.

Ferroalloys were produced at the Tovarna Dusika Ruse ferroalloys plant. In recent years, the production of ferrosilicon was reported to have been reduced by 75% to about 4,000 t/yr; that of ferrochromium was reduced by about 50% to about 8,000 t/yr, one-half of which was designated for export. The

company reportedly also produced very small quantities of low-carbon ferrochromium and ferrosilicomanganese. Most of the company's ferrochromium production has been sold directly to the country's stainless steel producer at Jesenice; the rest was exported. On the other hand, the country's entire output of ferrosilicon has been consumed by its domestic steel producers. In 1996, owing mainly to high electric power cost and unfavorable import prices for chromium ore, Tovarna Dusika Ruse's management reported plans to suspend the production of high carbon ferrochromium from the end of November 1996 until the end of March 1997 (Metals Bulletin 1996). The company planned to continue to produce lesser quantities of low carbon ferrochromium during this period.

Apart from being a substantial producer of glass sand (about 400,000 t/yr), Slovenia produced relatively small quantities of clays, gypsum, ornamental stone, and other industrial minerals, mostly for domestic uses.

Slovenia was the only republic in the former Yugoslav federation to have produced all forms of commercial energy: coal, lignite, natural gas, petroleum, and uranium. The production of uranium, however, was discontinued in 1991.

The country generated electricity by means of hydroelectric power stations and conventional as well as nuclear thermal electric power stations. The nuclear powerplant at Krsko, with an installed electric power generating capacity of 632

megawatts, has been under joint ownership with Croatia and is expected to continue operation until the year 2010.

The transformation of Slovenia's economy to a market-based system will involve a reevaluation of the country's mineral resources from a market perspective.

For a detailed description of the system that was used to measure reserves in the former Yugoslavia, see the USGS 1996 Minerals Yearbook Volume III (International) chapter on the Mineral Industry of Russia.

Slovenia had not been severely affected by the civil war that occurred in the former Yugoslavia, and the country's industries and infrastructure remained mostly intact. Because of Slovenia's relatively advanced industry and infrastructure, the country has been adapting more easily to Western European economic practices than most other former centrally planned economy countries in Central Europe.

References Cited

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- Republic of Slovenia, 1993, The Constitution of the Republic of Slovenia: Ljubljana, Slovenia, Casopisni Zavod Uradni List Republike Slovenije, 35 p. (Accessed on June 17, 1996, on the World Wide Web at URL <http://www.sigov.si/us/eus-usta.html>.)
- Sunnana, Dag, 1996, Extrusion ingot partnership in Slovenia: Profile[Norsk Hydro], Bulletin 3, March 28, p. 3.

TABLE 1
SLOVENIA: APPARENT PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
METALS					
Aluminum:					
Alumina	4,000 r/	2,000 r/	3,000 r/	40,000 e/	40,000
Metal, ingot, primary and secondary	84,809 r/	82,682 r/	76,741 r/	80,000 e/	80,000
Iron and steel: Metal:					
Ferroalloys:					
Ferrochromium	17,623 r/	8,812 r/	13,412 r/	15,130 r/	18,583
Ferrosilicocalcium	400	200	200	200	200
Ferrosilicon	14,000	12,000	12,000	12,000	10,000
Crude steel from electric furnaces	392,000 r/	355,000 r/	424,000 r/	450,000 r/	450,000
Semimanufactures	158,800 r/	126,596 r/	189,071 r/	175,000 r/	175,000
Lead:					
Mine and concentrator output:					
Ore, gross weight (Pb-Zn ore)	152,000	62,000 r/	25,000 r/	20,000 r/	20,000
Pb content of ores e/	2,000	820 r/	350 r/	270 r/	270
Concentrate, gross weight	1,770	--	--	--	--
Metal:					
Smelter, primary and secondary e/	8,000 r/	7,000 r/	8,000 e/	8,000 r/	8,000
Refined, primary and secondary	7,768 r/	6,424 r/	7,425 r/	7,000 r/	7,000
Mercury kilograms	12,000 r/	--	6,000 r/	6,000 r/	6,000
Silver do.	400	--	--	--	--
Zinc:					
Zinc content of PbZn ore	1,550	--	--	--	--
Concentrate output, gross weight	5,570	--	--	--	--
Zn alloys from smelter e/	2,500	2,500	2,500	2,500	2,500
INDUSTRIAL MINERALS					
Cement thousand tons	801 r/	707 r/	898 r/	900 r/	900
Clays:					
Ceramic clay, crude	2,500	2,500 r/	2,500 r/	2,500 r/	2,500
Fire clay, crude	-- r/	857 r/	589 r/	600 r/	600
Kaolin:					
Crude	15,000	10,000	10,000	10,000	10,000
Washed e/	5,000	4,000	4,000	4,000	4,000
Gypsum, crude e/	10,000	10,000	10,000	10,000	10,000
Lime thousand tons	137 r/	135 r/	160 r/	150 r/	150
Pumice and related materials, volcanic tuff e/	50,000	40,000	40,000	40,000	40,000
Quartz, quartzite, glass sand:					
Quartz and quartzite	10,000	10,000	10,000	10,000	10,000
Glass sand	300,000	200,000	200,000	200,000	200,000
Total	310,000	210,000	210,000	210,000	210,000
Salt, all sources	7,000 r/	12,300 r/	11,230 r/	11,000 r/	11,000
Sand and gravel, excluding glass sand thousand cubic meters	2,000	2,000	2,000	2,000	2,000
Stone, excluding quartz and quartzite, dimension, crude: e/					
Ornamental cubic meters	326,000 r/	324,000 r/	254,000 r/	300,000 e/	300,000
Other do.	3,000	3,000	3,000	3,000	3,000
Crushed and brown, n.e.s. thousand cubic meters	1,000	1,000	1,000	1,000	1,000
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Brown coal thousand tons	1,323 r/	1,200 r/	1,079 r/	1,000 e/	1,100
Lignite do.	4,233 r/	3,921 r/	3,775 r/	4,000 e/	4,000
Natural gas, gross producing thousand cubic meters	16,518 r/	13,392 r/	12,595 r/	13,000 r/ e/	13,000
Petroleum:					
Crude:					
As reported thousand tons	2,079 r/	1,925 r/	1,716 r/	1,900 r/	1,900
Converted thousand 42-gallon barrels	16,000 r/	14,000 r/	13,000 r/	14,000 r/	14,000
Refinery products e/ do.	3,800	3,500	3,500	3,500	3,500

e/ Estimated. r/ Revised.

1/Table includes data available through May 1997.

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

TABLE 2
SLOVENIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Unial, Tvrnica Glinice in Aluminija Boris Kidric	Plant at Kidricevo, Slovenia	120
Aluminum	do.	Smelter at Kidricevo, Slovenia	72
Coal:			
Brown	SOZC, Rudarsko Energetski Kombinat E. Kardelj, Trobovlje, Slovenia	Mines: Sasovski Rudnici at Trbovlje, Hrastnik, Ojstro, Senovo, and Kanizarnica	1,300
Lignite	Rudarsko Energetski Kombinat Velenje, RO Rudnik Lignita-Velenje	Mine at Velenje, Slovenia	5,000
Cement	Salonit Anhovo	Plant at Anhovo, Slovenia	1,120
Lead metal	Rudnik Svinca in Topilnica, Mezica	Smelter at Mezica, Slovenia	35
Do.	do.	Refinery at Mezica, Slovenia	30
Mercury	Rudnik Zivega Srebra, Idrija	Mine and smelter in Idrija, Slovenia	15,000 1/
Petroleum, refined	Industrija Nafta (INA) Rafinerija Nafta Lendava	Refinery at Lendava, Slovenia	16 2/
Pig iron	Združeno Podjetje Slovenske Železarne	two blast furnaces at Zelazara Jesenice, Slovenia	300
Do.	Železara Store	Electric reduction furnaces at Store pri Celju, Slovenia	290
Steel, crude	Združeno Podjetje Slovenske Železarne	Plant at Jesenica, Slovenia	500
Do.	do.	Plant at Ravne, Slovenia	162
Do.	do.	Plant at Store, Slovenia	140

1/ Flasks per year.

2/ Thousand barrels per day.