

## THE MINERAL INDUSTRY OF

# SLOVAKIA

By Walter G. Steblez

By European standards, Slovakia's production of ferroalloys, iron and steel, nonferrous metals, and mineral fuels, such as coal and petroleum, was modest. The country, however, was a significant regional producer of a broad range of industrial minerals for domestic and export markets. In 1995, the transformation of Slovakia's economy from a system of central economic planning to a market-based system continued with attendant elements, such as declining employment in state-owned enterprises and declining industrial production and volume of foreign trade. On the other hand, a substantial number of the country's enterprises reportedly had been privatized. Foreign investment in Slovakia's commercial operations in 1995 also was noteworthy in the aluminum and gold sectors. The Government of Slovakia continued to implement policies and programs concerned with denationalizing and rationalizing the economy, but some reforms were implemented at a generally slower pace than that adopted in the neighboring Czech Republic. Apart from the domestic privatization program through the Government's State Property Fund, the Government of Slovakia also encouraged foreign investment in the country's mineral and other industrial projects by allowing joint ventures and the full acquisition of former state-owned properties.<sup>1</sup>

Industrial pollution, including that associated with the minerals sectors, remained an important issue for the country. As in other former centrally planned economy countries of Europe, severe air pollution in Slovakia has been caused by the use of high-sulfur, low-grade coal and lignite to power the country's thermal electric power stations and by the country's chemical and metallurgical industries. According to sources in the Ministry of the Environment (MoE), efforts to further reduce the emission of sulfur dioxide into the atmosphere were to continue. Data, made available by the MoE, indicated that from 1990 to 1992 the emission of sulfur dioxide had been reduced by 45% to 50%.<sup>2</sup>

Despite the division of former Czechoslovakia into separate countries, legislation adopted since 1990 to protect the environment has remained operative. CSFR Law No. 309/91 on the Protection of the Atmosphere from Polluting Substances (9/91) codified regulations concerning air pollution; defined sources of pollution and set pollution limits; defined legal obligations of pollution source operators; and defined air pollution control authorities and fees and penalties associated with atmospheric pollution.

Czechoslovak Law on Environment of 12/91 established the basic definitions and principles regarding environmental protection as well as the obligations of "legal and physical persons (bodies)" for protecting the environment during the use of natural resources.

Following Slovakia's major adjustments to market economy requirements in 1992, the drop in output of most mineral commodities appeared to have slowed considerably during 1994-95. (*See table 1.*)

Despite the increasing orientation of the country's foreign commerce toward Western European market economy countries in recent years, Russia and other former member-countries of CMEA remained Slovakia's chief partners in mineral commodity trade. Russia remained Slovakia's principal supplier of natural gas and petroleum, and Hungary and Ukraine, respectively, were major suppliers of bauxite and iron ore to Slovakia's metal industries. Table 2 lists the administrative bodies as well as subordinate production units of the main branches of the country's mineral industry in 1993.

In 1995, the major events in the country's metals sector included the start of operation of a new aluminum electrolysis unit at the country's Zhar nad Hronom aluminum plant. The technology and equipment was supplied by Hydro-Norsk Aluminum of Norway. Financing for the project was obtained through a US\$110 million loan from the European Bank for Reconstruction and Development.<sup>3</sup> In the country's gold producing sector, Slovenska Banska Spolocnost reportedly mined 64,000 tons of ore at its Hodrusa-Hamre gold mining operation in 1994. The company also reported the output of gold for 1994 at 300 kilograms.<sup>4</sup> Foreign commercial activity in Slovakia's steel industry in 1995 reportedly included discussions between representatives of Vychodoslovenske Zeleziarne Steel Co. and the BHP Co. Ltd. of Australia concerning a trade agreement that could shift some of the iron ore that Slovakia has traditionally imported from Ukraine toward Australia. BHP already has been able to penetrate the Eastern European steel market, having reached an agreement with Romania for the delivery of 1 Mt/yr of iron ore.<sup>5</sup>

Industrial minerals and construction materials continued to have a significant role in the country's domestic and export markets. Slovakia's chief industrial mineral products included cement, gypsum, lime, magnesite, perlite and stone. The demand for cement, industrial minerals, and construction

materials appeared to be increasing because of growing large-scale projects for modernizing infrastructure, including new projects, such as a new highway to Western Europe; a major new land port near Kosice, which would include railway reloading and storage facilities and associated services; and a new truck terminal in Bratislava.

In 1993, the Government approved a plan for denationalizing the country's coal-mining industry. Under the provisions of this plan, the Ministry of Industry would oversee the privatization of the coal mining sector but would impose stricter regulations requiring compliance with environmental regulations by industry than had been previously the case. It was envisaged that coal production would be maintained at slightly more than 4 Mt/yr, but that the country's consumption of coal would eventually decrease from about 11 Mt/yr to slightly more than 6 Mt/yr.

Taking into account Slovakia's transition to a market economy, the country's mineral reserves would have to be reevaluated under market economy conditions. As defined in market-economy countries, reserves are those mineral

deposits that can be mined at a profit under existing conditions with existing technology. In former CMEA countries, including Slovakia, the prior policies for centrally planned industrial development often had more to do with political than economic considerations.

Slovakia's mineral industries are expected to continue to supply the country with steel, industrial minerals, and mineral fuels that gain importance during the modernization of the infrastructure and the transition of the economy to a market system.

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<sup>1</sup>BBC SWB. EEW/0323. Mar. 10, 1994, p. WA/2; from Press Agency of the Slovak Republic 1355 gmt, Feb. 28, 1994.

<sup>2</sup>BBC SWB, EEW/0338. June 23, 1994, p. WA/6; from TASR News Agency, Bratislava, 1004 gmt, June 13, 1994.

<sup>3</sup>FBIS-EEU-95-185-S. Sept. 25, 1995 p. 22; from Bratislava SME, Aug. 26, 1995, p. 3, and Bratislava PRAVDA Aug. 26, 1995, p. 3.

<sup>4</sup>FBIS-EEU-95-083-S. Oct. 21, 1994, p. 24; from Narodna Obroda Mar. 27, 1995, p. 5.

<sup>5</sup>Mining Journal (London). July 7, 1995, p. 7.

TABLE 1  
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1991	1992	1993	1994	1995 e/
<b>METALS</b>					
<b>Aluminum:</b>					
Alumina	187,000	143,000	140,000	75,000	100,000
Aluminum ingot, primary	49,400	60,400	60,000	30,000	40,000
Antimony, mine output, Sb content e/	450	450	450	--	--
Cobalt metal	60	68	--	--	--
<b>Copper:</b>					
<b>Mine output:</b>					
Ore, gross weight	225,000	340,000 r/	310,000 r/	290,000	250,000
<b>Concentrate:</b>					
Gross weight	11,300	2,210	2,000	2,000	2,000
Cu content e/	2,600 2/	537	500	500	500
<b>Metal:</b>					
Smelter, primary e/	3,500	3,000	3,000	3,000	3,000
Refined, primary and secondary	25,300	28,100	28,000	25,000	25,000
Gallium metal kilograms	1,400 e/	1,300	1,300	600	600
Gold metal e/ do.	18	18	18	15	15
<b>Iron and steel:</b>					
<b>Iron ore:</b>					
Gross weight thousand tons	1,630	1,220 r/	920 r/	860	850
Fe content do.	460 e/	330 r/	250 r/	230	225
<b>Metal:</b>					
Pig iron do.	3,160	3,020	3,210 r/	3,330	3,300
Ferrous alloys, total electric furnace 3/ do.	162	122	120	120	120
Ferrosilicon	41,200 r/	52,500 r/	50,600 r/	48,500	48,000
Steel, crude thousand tons	4,110	3,600 r/	3,770 r/	3,790	3,800
Semimanufactures do.	3,280	3,130 r/	3,320 r/	3,380	3,300
<b>Lead, mine output:</b>					
Concentrate, gross weight	4,630	3,500	3,500	3,500	3,500
Pb content e/	2,400	1,800	1,800	1,800	1,800
Mercury	75	60	50	--	--
Nickel metal, primary	2,400	1,620	--	--	--
Tin-tungsten ore, gross weight thousand tons	120	160	190	190	--
<b>Zinc:</b>					
<b>Mine output:</b>					
Ore, gross weight	250,000 r/ e/	370,000	300,000	280,000	280
Concentrate, gross weight	6,850	6,900	6,500	6,500	6,500
Zn content e/	3,100	3,100	2,900	2,800	2,800
Metal, secondary	811	1,070	1,000	1,000	1,000
<b>INDUSTRIAL MINERALS</b>					
Barite	85,000	31,300	30,000	85,000 r/	90,000
Cement, hydraulic thousand tons	2,680 e/	2,500	2,500	2,500	2,500
<b>Clays:</b>					
Bentonite e/	25,000	25,000	25,000	72,000 r/	75,000
Kaolin	25,000 e/	25,000	25,000	40,000 r/	40,000
Diamond, synthetic e/ carats	5,000	5,000	5,000	5,000	5,000
Dolomite thousand tons	4,500 e/	4,500	2,500 r/	1,700 r/	18,000
<b>Fertilizer, manufactured:</b>					
Nitrogenous, N content	175,000	175,000	170,000	170,000	170,000
Phosphatic, P2O5 content	122,000	120,000	120,000	120,000	120,000
Potassic, K2O content	11,500	11,000	10,000	10,000	10,000
Mixed	55,700	50,000	50,000	50,000	50,000
Gypsum and anhydrite, crude	75,000	75,000	75,000	122,000 r/	120,000
Lime, hydrated and quicklime thousand tons	1,080	1,070	1,070	1,000	1,000
Magnesite, crude	328,000	1,270,000	1,200,000	825,000 r/	800,000
Nitrogen, N content of ammonia e/	200,000	250,000	263,000	250,000	250,000
Perlite	50,000	50,000	50,000	28,000 r/	30,000
Pyrite, gross weight e/	100,000	100,000	-- r/	-- r/	--
Salt	74,000	70,000	70,000	123,000 r/	120,000
<b>Stone:</b>					
Limestone and other calcareous stones thousand tons	4,210	4,500	4,500	3,887 r/	4,000
Quarry stone, not further described thousand cubic meters	5,200	5,000	5,000	5,000	5,000
Zeolite	25,000 e/	25,000	25,000	13,000 r/	15,000

See footnotes at end of table.

TABLE 1--Continued  
SLOVAKIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity		1991	1992	1993	1994	1995 e/
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Coal, brown and lignite	thousand tons	4,150	4,000	3,500	3,600 r/	3,600
<b>Coke:</b>						
Metallurgical	do.	1,840	1,800	1,880 r/	1,900	1,900
Unspecified	do.	331	300	300	200	200
Gas, manufactured, coke oven	million cubic meters	912	900	900	900	900
<b>Petroleum:</b>						
<b>Crude:</b>						
As reported	thousand tons	72	70	70	55 r/	60
Converted	thousand 42-gallon barrels	488 e/	475	475	475	480
Refinery products e/	do.	40,500	40,500	40,500	40,500	40,500

e/ Estimated. r/ Revised.

1/ Table includes data available through May 1996. In addition to the commodities listed, arsenic, diatomite, feldspar, illite, sodium compounds, sulfur, sulfuric acid, and talc are produced, but information is inadequate to make reliable estimates of output.

2/ Reported figure.

3/ May include some FeCrSi and FeNi, if any was produced.

TABLE 2  
SLOVAKIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995

(Thousand of metric tons unless otherwise specified)

Commodity	Major operating companies 1/	Location of main facilities 2/	Annual capacity
Aluminum	SNP Aluminum Works	Ziar and Hronom, central Slovakia	60
Antimony, ore	Liptovska Dubrava	Central Slovakia	50
Do.	Pezinok	West Slovakia	50
Smelter	Vajska	Central Slovakia	2
Cement	Lietavska Lucka, Stupava, and Turna	Slovakia	5,400
Coal, brown	ULB administration	Prievidza, central Slovakia	6,800
<b>Copper:</b>			
Ore	Slovinky, Hodrusa-Hamre, and Rudnany	Central Slovakia	500
Refinery	Krompachy	do.	27
Gallium	kilograms SNP Aluminum Works	Ziar and Hronom, central Slovakia	4,000
<b>Iron:</b>			
Ore	Nizana Slana and Rudnany	Central Slovakia	1,600
Concentrate	do.	do.	1,300
Lead-zinc, ore	Banska Stiavnica	do.	200
Magnesite	SMZ administration	East Slovakia	550
Mercury	metric tons Dubnik, Malachov, and Rudnany	Central Slovakia	150
Nickel, smelter	Niklova Huta	Sereď, south Slovakia	5
Petroleum, refinery	Bratislava, Strazske, and Zvolen	Slovakia	NA
Steel, crude	Vychodoslvenske Zeleziarne sp (East Slovak Iron and Steel Works)	Slovakia, Kosice	4,000
Do.	Svermove zeleziarne	Slovakia, Podbrezova	600

NA Not available.

1/ All mining companies are Government-owned.

2/ Names and locations of mines and crude oil refineries are identical.