THE MINERAL INDUSTRY OF

MACEDONIA

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In 1998, Macedonia's economy grew and stabilized as evidenced by increases in the gross domestic product (GDP) [3.5% (preliminary)] and in industrial production (about 5.7%) as compared with those of 1997 (Skopje MIC, 1999). Metal processing and iron and steel production were among the major contributors to the growth of industrial output in 1998. In aggregate, the minerals industry comprising ferrous and nonferrous metallurgy, industrial minerals and construction materials, mineral fuels, and electric energy contributed about 38% of the total value of industrial output. The mineral fuels and energy branch alone (including coal mining and natural gas distribution) contributed about 20% of the total value of industrial output (Jovanovska, 1999).

The rate of inflation was kept at about 5%. However, unemployment remained high at more than 35%, and the country's foreign debt, as a percentage of the GDP, also was high, reaching 39%. Although the country was not physically affected by the war following the Yugoslavian Federation's dissolution, Macedonia effectively was cut off not only from its former domestic markets, but also became commercially isolated from other world markets for several years because of a political dispute with Greece about the use of the "Macedonia" geographic term, which greatly impeded the country's economic recovery.

The Government of Macedonia remained committed to policies aimed at denationalizing the economy. By yearend 1997, 1,380 enterprises out of a total of 1,700 (1,200 nonagricultural and about 450 agricultural), or about 81%, had been privatized. Mineral industry enterprises that were on the Government's privatization list in 1998 included Zeleznik (steel production); Zletovo Rudnici (lead and zinc mining); Jugohrom branches Hek, Nemetali, Radusa, Vratnica (ferroalloys, onyx, nonferrous metals, stone processing, respectively); Fenimak (ferronickel); and Bucim (copper mining and smelting).

Macedonia was an important producer of metals in the former Yugoslavia, with significant contributions in the output of copper, ferroalloys, lead, silver, and zinc. Efforts to reestablish formally some regional contacts were made in November in Belgrade by delegations of Serbian and Macedonian officials, representing the metals and electric power interests of each country (Tanjug, 1998).

Macedonia's aluminum industry centered on Alumina A.D. in Skopje. The company has the capacity to produce 20,000 metric tons per year (t/yr) of billets (primary shapes) and 12,000 t/yr of semimanufactures. Bucim Radovis DM in Radovis was the country's only producer of copper ore with capacities to produce 4,000,000 metric tons per year (t/yr) of ore, 50,000 t/yr concentrates, 8,000 t/yr copper cathode, and 3,000 t/yr copper alloys. The company also produced gold and silver bars and granules as byproducts. MHK Zletovo-Veles operated the country's smelter and refinery for the production of lead, zinc and associated metals. About 45% of the feedstock came from domestic lead and zinc mines (Sasa-Makedonska Kamenica, Zletovo-Probistip, and Toranica-Kriva Planca); the balance was imported concentrate. The zinc refinery had a production capacity of 14,000 t/yr; the lead refinery, 40,000 t/yr.

Macedonia operated two ferroalloy plants at Tetovo and Kavadarci. The Jugohrom HEK-Jegunovce ferroalloys plant at Tetovo was established in 1952 to produce mainly such chromite-related products as ferrochromium, ferrosilicochromium, and sodium dichromate. Power was supplied by hydroelectric plants nearby and used water from Lake Mavrovsko Ezero. Originally chromite was supplied by the nearby Radusa Mine. Total 1998 ferroalloy capacity was 205 metric tons per day. With 16 days of downtime per year, capacity at the plant was about 70,000 t/yr of ferroalloys.

Construction of FENI-Kavadarci (FENI) at Kavadarci was begun in the 1970's, mainly as a producer of ferronickel. The plant started operation in 1982 with an installed capacity rated at about 12,000 t/yr. The Rzanovo Mine provided the nickel ore for feedstock. Discussions, which were reported in 1997 between the Samsung Corporation of the Republic of Korea and Macedonian officials about possible Samsung investment in the ferronickel producer, were put in abeyance and finally terminated because of the financial difficulties that manifested in Asia during the year. However, interest in FENI continued as Krupp, the German steel producer, provided loans valued at $40 million for the modernization of the facility in exchange for a minority share in the operation (Foreign Broadcast Information Service, 1998b). The modernization was expected to take 20 months and to increase the plant's profitability, despite the loan burden.

Following highly competitive bidding to obtain controlling interest in the cold-rolling operations at the Skopje steelmill, Balkan Steel International, based in Lichtenstein, reportedly won out over the Swiss-Italian trading company, Duferco (Metal Bulletin, 1998a). The cold-rolling mill has a 600,000- t/yr capacity. The mill also has a 100,000-t/yr galvanizing line. Both companies already had developed commercial linkages with the steelworks before 1998. Duferco purchased the steelmill's electric arc furnace and plate mill; Balkan Steel International had obtained a 1-year management contract to operate the hot strip mill, starting in January 1998 (Metal Bulletin, 1998b).

Important activities in Macedonia's energy sector included a feasibility study, funded largely by the U.S. Trade and Development Agency (USTDA), to study the construction of the

Burgas-Skopje-Vlore oil pipeline. The total value of the study was assessed at $980,715, of which, reportedly, $580,000 was to be provided by the USTDA, and the balance, by the participants, Macedonia, Bulgaria, and Albania (Foreign Broadcast Information Service, 1998a). Additionally, a cooperative agreement was reached in July between representatives of Serbian and Macedonian electric power industries. The meeting included discussions about establishing a new 400-kilowatt powerline between Skopje and Vranje.

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TABLE 1
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity		1994	1995	1996	1997	1998
METALS						
Aluminum, metal, ingot, primary and secondary		5,000 3/	3,700 3/	4,000	4,000	4,000
Cadmium, smelter output	kilograms	73 r/ 3/	74 r/ 3/	85 r/ 3/	100	100
Chromite:						
Ore, gross weight		5,000	5,000	5,000	5,000	--
Concentrate (produced largely from imported ores)		3,000	3,000	3,000	3,000	--
Copper, mine and concentrator output:						
Ore, gross weight	thousand tons	2,000	2,000	2,000	2,000	2,000
Cu content of ore		7,140 3/	8,560 r/ 3/	8,484 r/ 3/	8,000	8,000
Concentrate, gross weight		20,000	20,000	20,000	20,000	20,000
Gold	kilograms	640	760 r/ 3/	752 r/ 3/	650	700
Iron and steel:						
Iron ore:						
Gross weight		20,000	20,000	20,000	20,000	20,000
Fe content of ore		1,000	1,000	1,000	1,000	1,000
Concentrate		15,000	15,000	15,000	15,000	15,000
Pellets		10,000	10,000	10,000	10,000	10,000
Agglomerate		5,000	5,000	5,000	5,000	5,000
Metal:						
Ferroalloys:						
Ferrochromium, low C		3,166 r/ 3/	3,765 r/ 3/	3,780 3/	460 3/	-- 3/
Ferronickel (38% Ni), gross weight		10,500	9,200	7,900	7,900	9,200
Ferrosilicon		58,740 3/	57,200 3/	57,220 3/	55,000	50,000
Silicon		1,000	1,000	1,000	1,000	1,000
Total		73,406 3/	71,165 r/ 3/	69,900 r/	64,400 r/	60,200
Steel, crude		85,000 3/	33,000 r/	27,000 r/	30,000	30,000
Semimanufactures		91,000	65,000	65,000	60,000	60,000
Lead:						
Mine output:						
Ore gross weight (Pb-Zn ore)		900,000 3/	900,000 3/	846,244 r/ 3/	850,000	800,000
Pb content		29,000	29,000	27,000	28,000	26,000
Concentrate, gross weight		17,000	17,000	16,885 3/	17,000	17,000
Primary and secondary:						
Smelter		22,000	23,000	23,000	20,000	20,000
Refined		30,464 r/ 3/	30,000 r/	30,000 r/	28,000	35,100
Nickel, metal, Ni content of FeNi		3,980 r/ 3/	3,500	3,000	3,000	3,500
Silver	kilograms	22,303 r/ 3/	25,000	20,000 r/	20,000	20,000
Zinc:						
Concentrate		15,000	15,000	15,017 3/	15,000	15,000
Metal:						
Refined, primary and secondary:						
Smelter		7,000	7,000	7,000	7,000	7,000
Electrolytic		24,205 r/ 3/	21,335 r/ 3/	38,000 r/	53,000 r/	57,000
INDUSTRIAL MINERALS						
Cement	thousand tons	486 3/	524 3/	491 r/ 3/	500 3/	500
Clays, bentonite		30,000	30,000	30,000	30,000	30,000
Diatomite		5,000	5,000	5,000	5,000	5,000
Feldspar		3,282 r/ 3/	-- r/	-- r/	-- r/	--
Gypsum:						
Crude		33,449 r/ 3/	30,000 r/	25,000	25,000	25,000
Calcined		5,000	5,000	5,000	5,000	5,000
Lime		20,000	20,000	20,000	20,000	20,000
Pumice and related materials, volcanic tuff		75,000	75,000	75,000	100,000	100,000
Sand and gravel, excluding glass sand	thousand cubic meters	130	130	130	130	130
Stone, excluding quartz and quartzite, dimension, crude:						
Ornamental	square meters	266,700 3/	192,300 3/	186,783 3/	190,000	190,000
Crushed and brown, n.e.s.	thousand cubic meters	400	400	400	400	400
Other	cubic meters	13,100 3/	12,100 3/	10,000	10,000	10,000
Sulfur, byproduct of metallurgy	thousand tons	6	6	6	6	6
Talc:						
Crude		13,100 r/	16,500 r/	10,000	10,000	10,000
Washed		8,000 r/	8,000 r/	7,000	7,000	7,000

See footnotes at end of table.

TABLE 1--Continued
MACEDONIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity		1994	1995	1996	1997	1998
MINERAL FUELS AND RELATED MATERIALS						
Lignite	thousand tons	6,830 3/	7,000	6,500	6,500	6,500
Petroleum refinery products	thousand 42-gallon barrels	8,000	8,000	6,000 r/	6,000 r/	6,000

r/ Revised.
1/ Table includes data available through May 1999.
2/ In addition to commodities listed, common clay also is produced, but available information was inadequate to make reliable estimates of output levels.
3/ Reported figure.

TABLE 2
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity e/
Cement	Azbestcementa "Usje" Preduzece za Proizvodnju Cementa	Plant at Skopje	2,190
Chromite, concentrate	Jugohrom, Hemijsko-Elektrometakurski Kombinat (HEK)	Concentrator at Radusa	150
Copper ore	Bucim, Rabotna Organizacija za Rudarstvo i Metalurgija za Baker	Mine and mill at Bucim, near Radovis	7,000
Ferroalloys	Jugohrom, Hemijsko-Elektrometalurski Kombinat (HEK)-Jegunovce	Plant at Jegunovce	80
Iron ore	Skopje, Rudnici i Zeljezarnica Skopje	Mines at Tajmiste, Demir Hisar, and Damjan	1,000
Lead-zinc ore	Prepobotuvacki, Kombinat Zletovo-Sasa: Sase, Rudnici za Olovo i Cink	Mine and mill near Kamenica	300
Do.	Zletovo, Rudnici za Olovo i Cink	Mine and mill near Probistip	700
Lead metal	Zletovo, Topilnica za Cink i Olovo	Imperial smelter at Titov Veles	40
Do.	do.	Refinery at Titov Veles	40
Nickel:			
Ore	Feni-Rudnici i Industrija za Nikel, Celik i Antimon	Mine and opencast mine near Kavadarci	2,300
Metal 1/	do.	Ferronickel plant at Kavadarci	161
Pig iron	Skopje, Rudnici i Zeljezarnica Skopje	5 Elkem electric furances at Skopje	430
Steel, crude	do.	Plant at Skopje	980
Zinc metal	Zletovo, Topilnica za Cink i Olovo	Imperial Smelter plant and refinery at Titov Veles	65

e/ Estimated.
1/ Nickel in ferronickel.