THE MINERAL INDUSTRY OF

SERBIA AND MONTENEGRO

By Walter G. Steblez

Signs of continuing economic recovery in Serbia and Montenegro were discernible in 1998. Partial results of economic indicators for the 9-month period from January to September displayed a growth of industrial production of about 5% in 1998 compared with that of 1997 (Federal Statistical Office, 1998). The estimated output of metal ores, concentrates. and smelted and refined products, with the exception of significant production decreases of bauxite and alumina and increases of steel and lead and zinc ore, were within the range of output in 1997. The estimated production of most industrial mineral commodities and mineral fuels, except significant increases in the production of asbestos, cement, and salt, also were within the range of output in 1997. In December, the Government of Serbia and Montenegro indicated its economic policy for 1999. The policy's chief objective was to maintain price and currency stability as a prerequisite for such further reforms as denationalization, as well as for stimulating the growth of production and trade. Serious internal problems, however, began to emerge in Serbia's autonomous province of Kosovo, where the population of Kosovar Albanians began to militate for greater autonomy or independence. Increasing violence in Kosovo raised the threat of dislocations of large segments of the population and the destruction of industrial infrastructure, including that in the minerals industry, and raised concerns about its impact on the social and economic stability of neighboring countries.

Serbia and Montenegro continued to produce a wide range of mineral commodities that were of domestic and regional importance. Major issues and events during the year encompassed the country's industries that produced iron, steel, lead, zinc, and nickel.

Serbia and Montenegro's bauxite mining, alumina refining, and aluminum smelting facilities were located chiefly in Montenegro. Rudnici Boksita Niksic operated bauxite mines in Montenegro, and RB Kosovo Klina operated mines in Serbia. Aluminum was produced in Montenegro by the DP Kombinat Aluminjuma's smelter at Podgorica. Bauxite mining and alumina production apparently underwent marked contraction in 1998; however, the estimated output of aluminum remained within the range of output in 1997. The latest trade returns show an 86% decline in the export of bauxite for 1997, whereas exports of aluminum and aluminum products rose by about 60% compared with those in 1996, amounting to 67,106 metric tons (t). The United Kingdom, Italy, and Switzerland were major importers of aluminum from Serbia and Montenegro.

Rudarsko Topionicki Bazen Bor was the country's only copper mining, beneficiation, smelting, and refining complex. All the company's mine output of copper came from its Bor, Majdanpek, and Veliki Krivelj open pit mines. Although mine and smelter production of copper remained at about the output

level of 1997, exports of copper and copper products in 1997 (latest available data) rose by about 13% compared with those of 1996, reaching 108,038 t. Greece, Macedonia, Switzerland, and the United Kingdom were the principal recipients of Serbia and Montenegro's copper exports in 1997 (Savezni Zavod za Statistiku, 1998).

In 1998, crude steel showed a substantial increase, growing by more than 12% compared with the output level in 1996. According to a spokesperson of the Yugoslav Iron & Steel Federation (YISF), the recovery of the steel industry reached a level equivalent to more than 90% of its status in 1989. Of the two steelworks in Serbia and Montenegro, the Sartid AD steel works at Smederevo in Serbia has had the largest input into the industry's recovery. Domestic demand for steel has increased with deliveries of finished steel products having risen by 14%. The YISF spokesperson also indicated that steel demand by vearend 1998 was expected to reach 620,000 t, of which 28% would be composed of imported steel (Metal Bulletin, 1998g). Planned modernization at Montenegro's Niksic Iron and Steel Works for 1999 included the closure of one of two electric arc furnaces and the upgrading of the remaining furnace to 65-t capacity. The plan also included the installation of a new 150,000-metric-ton-per-year billet caster. A longer term plan would focus on modernizing the company's rolling mill (Paxton, 1998). The Niksic Iron and Steel Works also established a joint venture with the Swiss-Italian trading company Duferco whose aim was to increase exports to the European Union (EU) region. Similarly, Duferco had been instrumental in helping raise production at Sartid AD in Smederevo.

Allegations of Serbia and Montenegro's dumping of steel on markets in the EU resulted in proposals by Eurofer, the EU's steelmaker's association, to initiate antidumping investigations (Metal Bulletin, 1998a). Serbia and Montenegro's total exports of steel in 1997 amounted to 639,369 t, an increase of more than 298% compared with those of 1996. Major EU recipients of Serbia and Montenegro's steel in 1997 were Germany, Italy, and Switzerland, with combined imports amounting to 493,387 t (Savezni Zavod za Statistiku, 1998). According to Eurofer, the EU's imports of steel from Serbia and Montenegro during the first 6 months of 1998 amounted to about 360,000 t and imports by yearend were projected to exceed 700,000 t. The unfolding conflict in this area, however, had made antidumping investigations and the possible imposition of sanctions a moot issue.

Ferro-Nickel D.D. Glogovac, the country's ferronickel producer in Serbia's Kosovo province, was adversely affected by the fighting in the region; the conflict forced frequent closures during the year. The disruption of fuel deliveries, reported looting, and the flight of large groups of workers to safer areas, all contributed to the plant's uncertain future (Metal Bulletin,

1998d). At yearend, security forces of Serbia and Montenegro reportedly reestablished control of the region, allowing some of the workers to return, which raised expectations that the plant would resume operations in the near future. The company works two nickel mines near the smelter (Metal Bulletin, 1998b). Total exports of ferroalloys in 1997 amounted to 7,182 t, an increase of more than 10% compared with that of 1996. Germany, Greece, Italy, and Switzerland were among the main importers of this material (Savezni Zavod za Statistiku, 1998). Ferronickel constituted the dominant share of ferroalloy exports, with total shipments in 1997 amounting to 6,782 t, or a 5% increase compared with that of 1996 (Federal Statistical Office, 1998).

The Trepca deposit in Kosovo was Serbia and Montenegro's largest lead-zinc deposit under exploitation. Estimated mine output of lead and zinc ore in 1998 exceeded 1.2 million metric tons, an increase of 20% compared with that of 1997. Reportedly, since the mid-1960's, some lead-zinc ores and concentrates have been imported to meet the needs of the country's smelters and refineries. According to the latest available complete foreign trade data, imports of lead and zinc ores and concentrates in 1997 amounted to 36,486 t, an increase of about 29% compared with that of 1996. Imports in 1998 for the January to October period amounted 31,600 t, an increase of about 51% over the corresponding period in 1997 (Federal Statistical Office, 1998). The civil unrest and fighting in the region had little or no effect on the operation of the Trepca mining, beneficiation, and smelting complex during the year. Mines produced at full capacity and metal recovery, apart from lead and zinc, included bismuth, cadmium, gold, and silver. A 5-year commercial agreement, worth \$517 million, with Mytilineos S.A., a Greek metals trading company, and the management of Trepca was reached in 1997. The implementation of the agreement in 1998 called for the Greek trading company to supply modern mining, loading, and transport equipment to the Trepca's mining operations. Mytilineos would act, in effect, as Trepca's foreign sales agent (Metal Bulletin, 1998f).

Serbia and Montenegro continued to produce such industrial mineral commodities as clays (bentonite, fire clay, and kaolin), feldspar, gypsum, magnesite, and pumice, meeting domestic and foreign trade needs.

Major issues in the industrial minerals branch during the year involved the privatization and sale of several cement plants. The trend to acquire East European cement producers by major cement producing-interests in the EU continued in 1998 in Serbia and Montenegro.

Initially, the Government of Serbia and Montenegro included the 4 cement plants—Beocin, Popovac, Kosjeric, and Sar—in a list of about 75 enterprises scheduled for privatization during the year (Todorovic, 1998). By yearend, it appeared that the Beocin cement plant would be the first plant to be privatized with Lafarge, the French cement producer, leading the list of potential bidders (Boarov).

Coal, hydroelectric power, and petroleum and natural gas composed Serbia and Montenegro's principal sources of energy. Total installed electric power generating capacity amounted to about 8,900 megawatts (MW). Total installed capacity in the Montenegrin part of the Federation amounted to about 725 MW, of which 29% was based on coal and 71% was based on

hydropower. Serbia's installed electric power capacity amounted to approximately 8,200 MW, of which 66% was based on coal, 23% was based on hydropower, and 11% was based on oil and gas (Elliott, 1999).

Petroleum and natural gas are extracted in central Serbia and in the Serbian province of Vojvodina, and almost all the country's output of bituminous and brown coal is produced in central Serbia as well. However, about 21% of Serbia's lignite output was produced within Serbia's Kosovo province. Kosovo also accounted for about 20% of the total electric power produced by Serbia and Montenegro. In June 1998, coal production in Kosovo was interrupted as rebelling forces seized the Belacevac Mine; several mineworkers at the mine were reportedly kidnapped during the fighting in the region. The Belacevac Mine and the adjacent Dobroselo Mine supply the two thermal electric powerplants in the Obilic region of Kosovo, which accounted for 20% of Serbia and Montenegro's total electric-power-generating capacity (New York Times, 1998).

The economic normalization process in the region of the former Yugoslavia gradually began to reveal continuing and increasing trade relations between such former Yugoslav republics as Croatia and Serbia and Montenegro. Reportedly, one of Croatia's largest exporters to the Serbia and Montenegro's market was INA Naftalin oil and gas company, Croatia's producer of petroleum and natural gas and refining enterprise, which exported products valued at more than \$16 million in 1997. Additionally, a pipeline agreement was in effect that would allow the transport of up to 1.5 million metric tons per year of petroleum through the Adriatic pipeline to Serbia and Montenegro via Croatia (Zmago, 1998; HINA, 1998).

Other developments in the oil and gas industry included the establishment of a joint venture between JP Jugpetrol and the Medusa Company of the United Kingdom to explore for oil and gas offshore Montenegro. The agreement called for joint development and production if commercial reserves are discovered (Srdanovic, 1998).

References Cited

Boarov, Dimitrije, 1999, Privatization of the Beocin Cement Factory: Vreme, January 9, p. 18-20; from Foreign Broadcast Information Service, ID—FTS199901280011499, entry date-1/28/99.

Elliott, T.C., 1991, International directory of electric utilities: New York, McGraw-Hill, 511 p.

Federal Statistical Office, 1998, INDEX—Monthly Review: Federal Statistical Office, no. 11, 55 p.

HINA, 1998, Porges Justifies supplying FRY with oil through pipeline: Zagreb, HINA, 1700 GMT, November 9; from Foreign Broadcast Information Service, ID-FTS19981109001150, entry (publication) date-11/9/98.

Metal Bulletin, 1998a, EU mulls dumping action against Yugoslavia: Metal Bulletin, no. 8318, October 15, p. 21.

——1998b, Glogovac could still reopen in 1998: Metal Bulletin, no. 8315, October 5, p. 9.

——1998c, Glogovac plant is dismantled by looters: Metal Bulletin, no. 8284, June 8, p. 5.

——1998d, Glogovac plant remains inactive: Metal Bulletin, no. 8267, April 6, p. 9.

——1998e, Outlook for Glogovic/sp/still looks bleak: Metal Bulletin, no. 8296, July 20, p. 7.

——1998f, Trepca defies Kosovo fighting: Metal Bulletin, no. 8302, August 17, p. 3.

——1998g, Yugoslav production rises sharply: Metal Bulletin, no. 8278, May 18, p. 24.

New York Times, 1998, Serb forces open assault on rebels in Kosovo: New York Times, June 30, p. A1-A6.

- Paxton, Robin, 1998, Niksic plans new caster and upgrade of melt shop: Metal
- Bulletin, no. 8285, June 11, p. 21.
 Savezni Zavod za Statistiku, 1998, Statisticheski Godishnyak Jugoslavije:
 Beograd, Savezni Zavod za Statistiku, p. 307-328.
 Srdanovic, A., 1998, Oil and gas exploration in Montenegro—Optimistic
- anticipation: Belgrade, Ekonomska Politika, June 1, p. 26; from Foreign Broadcast Information Service, ID—FTS19980713000774, entry date-
- Todorovic, B., 1998, Sale of cement plants—Who gives more: Belgrade Ekonomska Politika, July 27, p. 15; from Foreign Broadcast Information Service, ID—FTS19980821000400, entry date-8/21/98.
- Zmago, Herman, 1998, FRY—Croatia—Trade Growing: Belgrade, Ekonomska Politika, October 5, p. 32-33; from Foreign Broadcast Information Service, ID-FTS19981102002439, entry date-11/02/98.

${\bf TABLE~1}$ SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commodity		1994	1995	1996	1997	1998 e
METALS						
Aluminum:						
Gross weight:						
Alumina, calcined			35,312	186,354	160,000 r/	70,000
Bauxite			60,000	323,000	470,000	110,000
Metal, ingot, primary and secondary		6,850	16,991	37,436	65,743	60,000
Antimony, metal		(3/)	(3/)	(3/) e/		
Bismuth, metal	kilograms	88	86	21	20 e/	20
Cadmium	do.	3,000	11,079	79,195	80,000 e/	8,000
Copper:						
Mine and concentrator output:						
Ore, gross weight	thousand tons	17,935	20,206	20,026	20,507	20,000
Cu content of ore		84,843	87,575	82,526	82,500	80,000
Concentrate, gross weight		354,916	363,332	337,861	361,000 r/	350,000
Concentrate, Cu content		74,500	74,600	69,500	73,600	70,900
Metal:	=	7 1,500	7 1,000	02,500	75,000	70,700
Blister and anodes:						
Primary		69,111	70,074	59,940	59,000 r/e/	50,000
Remelted			,	65,287	60,000 r/e/	
		17,440	17,336			65,000
Total		86,551	87,410	125,227	119,000 r/e/	115,000
Refined:			=1.001	7 0.040	50.504	7 0 000
Primary		66,308	71,304	59,940	70,534	50,000
Remelted		5,841	7,147	44,060	43,000	45,000
Total		72,149	78,451	104,000	113,534	95,000
Gold, refined	kilograms	2,504	3,040	4,000 r/	4,000 r/	3,500
Iron and steel:						
Ore and concentrate, agglomerate		32,000	110,113	110,000 e/	110,000 e/	100,000
Metal:						
Ferroalloys, ferronickel		1,763	2,414	6,501	6,500 e/	6,500
Pig iron		16,763	107,836	535,000	907,000	980,000
Crude steel		136,962	180,496	679,000	979,000	1,100,000
Semimanufactures		174,000	242,000	860,000	1,460,000	1,500,000
Lead:		,,,,,,	,	,	,,	, ,
Mine and concentrate output:						
Ore, gross weight (Pb-Zn ore)		272,208	510,942	856,468	1,049,000	1,250,000
Pb content of ore		6,651	11,689	22,327	27,000 e/	37,000
Concentrate, gross weight		7,500	16,720	29,009	31,000 e/	35,000
				10.000		
Pb content of concentrate		2,667	3,342	10,000	11,000 e/	12,000
Metal, primary and secondary:		10.074	10.221	44.600	41.000 /	42.000
Smelter		12,274	19,231	44,600	41,000 r/	43,000
Refined		4,458	11,468	30,317	23,632	23,000
Magnesium, metal			2,560	2,500 e/	2,500 e/	2,500
Nickel, metal, Ni content of FeNi		663	962	2,556	2,500 e/	1,500
Platinum-group metals:						
Palladium	kilograms	47	46	56	55 e/	50
Platinum	do.	7	6	3	3 e/	3
Selenium	do.	27,340	39,810	37,840	38,000 e/	35,000
Silver	do.	18,298	31,054	68,805	42,640	37,000
Zinc:						
Zn content of Pb-Zn ore		6,794	11,515	21,765	25,000 e/	38,000
Concentrator output, gross weight		7,500	21,297	37,012	35,000 e/	45,000
Zn content of concentrate		1,609	3,195	12,000	13,000	14,000
Refined		3,895	5,976	29,954	29,454	14,000
INDUSTRIAL MINERALS		3,073	3,770	27,751	25,151	11,000
Asbestos fiber, all grades		498	497	509 r/	360 r/	750
Cement	thousand tons				2,011	2,300
	thousand tons	1,612	1,696	2,205	2,011	2,300
Clays:		~.~	400	o =	100	400
Bentonite		215	192	95	100 e/	100
Ceramic clay		22,092	28,095	36,021	35,000 e/	35,000
Fire clay:						
Crude		34,080	20,988	43,053	51,000 r/	50,000
Calcined		5,376	4,091	8,000 e/	10,000 r/e/	10,000
See footnotes at end of table.						

See footnotes at end of table.

TABLE 1--Continued SERBIA AND MONTENEGRO: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1994	1995	1996	1997	1998 e/
INDUSTRIAL MINERALSContinued					
ClaysContinued:					
Kaolin:					
Crude	69,927	56,926	60,000 e/	60,000 e/	60,000
Washed	7,110	4,900	6,000 e/	6,000 e/	6,000
Feldspar, crude	3,256	5,441	4,801	4,880 r/	5,000
Gypsum, crude	40,411	40,342	44,257	32,124 r/	35,000
Lime thousand tons	156	418	456	460	450
Magnesite:					
Crude do.	53	75	89	98	85
Caustic calcined	5,896	4,078	10,601 r/	6,327 r/	6,500
Mica, all grades	158	199	200 e/	200 e/	150
Nitrogren, N content of ammonia	158,518	135,401	235,070	235,000 r/	250,000
Pumice and related volanic materials, volcanic tuff	154,188	117,664	120,135	120,000 e/	120,000
Quartz sand thousand tons	403 r/	307 r/	361 r/	366 r/	369
Salt, all sources	32,086	13,500	21,646	28,000	75,000
Sand and gravel excluding glass sand thousand cubic meters	1,814	2,070	3,291	2,351	3,100
Sodium compounds:					
Caustic soda	4,748	7,252	20,214	64,713	66,000
Sodium sulfate	2,870	7,178	7,000 e/	7,000 e/	5,000
Stone, excluding quartz and quartzite, dimension, crude:					
Ornamental square meters	213,000	237,000	219,000	206,000	203,000
Crushed and broken, n.e.s. thousand cubic meters	1,571	1,886 r/	2,263 r/	2,665 r/	2,500
Other, stone blocks cubic meters	10,472 r/	9,916 r/	12,196 r/	9,817 r/	10,000
Sulfur: e/					
Sulfur content of pyrite thousand tons	1	r/	r/	r/	
Byproduct:					
Metallurgy do.	110	110	110	100	100
Petroleum do.	1	1	1	1	1
Total do.	112	111 r/	111 r/	101 r/	101
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Bituminous do.	82	57	63	92	105 4
Brown do.	529	560	539	512	370 4
Lignite do.	37,740	39,939	37,828	42,313	43,000 4
Total do.	38,351	40,556	38,430	42,917	43,475 4
Natural gas, gross production million cubic meters	824	906	671	688	715 4
Petroleum:					
Crude:					
As reported thousand tons	1,078	1,066	1,030	979	920 4
Converted thousand 42-gallon barrels	8,000	8,000	7,600	7,500	6,800
Refinery products e/ do.	13,800	13,000	12,500	12,000	12,000

e/ Estimated. r/ Revised.

^{1/} Table includes data available through April 1999.
2/ In addition to commodities listed, common clay and diatomite also are produced, and tellurium may be recovered as a copper refinery byproduct, but available information is inadequate to make reliable estimates of output levels.

^{3/} Less than 0.25 metric ton.

^{4/} Reported figure.

${\it TABLE~2}$ SERBIA AND MONTENEGRO: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand of metric tons unless otherwise specified)

Con	nmodity	Major operating companies	Location of main facilities	Annual
Alumina	illiodity	Kombinat Aluminijuma Titograd	Plant at Titograd, Montenegro	capacity 200.
		, ,	Smelter at Titograd, Montenegro	
Aluminum	atuataa	do.	<u> </u>	100. 80.
Antimony, ores and concer	itrates	Zajaca, Rudarsko Tapionicarski Bazen	Mines and mills near Zajaca, Serbia	
Do.		do.	Mines and mill at Rajiceva Gora, Serbia	300.
Antimony, metal		do	Smelter at Zajaca, Serbia	4.
Bauxite		Rudnici Boksita Niksic	Mines in Montenegro at Kutsko Brdo, Zagrad, Biocki Stan, Durakov Dol,	650.
			and other locations	
Coal:				
Bituminous		Ibarski Rudnici Kamenog Uglja	Mines at Jarando and Usce, near Baljevac na Ibru, Serbia	250.
Lignite		SOUR Kolubara, Rudarsko Energetsko Industrijski Kombinat, RO	Opencast mines; Polje B and Polje D	10,000.
Do.		Kolubara Povrsinski Kopovi	Tamnavski Kopovi (also known as	14,000.
20.		roudau i ovisniski ropovi	Kolubarski Rudnici Lignita), near Vreoci, Serbia	11,000.
Do.		SOUR Elektroprivreda Kosova, RO	Opencast mines; Dobro Selo and	2,000.
Б0.		Kosovo, Proizvodnja Separacija i Transport Uglja	Belacevac, near Obilic, Serbia	2,000.
Cement		Becinska Fabrika Cementa	Plant at Beocin, Serbia	2,031.
Do.		Fabrika Cementa Novi Popovac	Plant at Beochi, Serbia Plant at Popovac, Serbia	1,613.
Copper		Rudarsko Topionicki Bazen Bor	Smelter at Bor, Serbia	180.
Do.		do.	Electrolytic refinery at Bor, Serbia	180.
Do.		do.	Mine and mill at Bor, Serbia	5,000 ore.
Do.		do.	Mine and mill at Majdanpek, Serbia	15,000 ore.
Do.		do.	Mine and mill at Veliki Krivelj, Serbia	8,000 ore.
Lead-zinc ore		Rudarsko-Metalursko-Hemijski Kombinat za Olovo i Cink Trepca	Mines at Ajvalija, Kopanaonik, Badovac; Trepca, Blagodat, Lece; Veliki Majdan, Tisovak; and Kisnica, Rudnik, Suplja Stijena	5,000.
Do.		do.	Mills at Kriva Feja, Lece, Rudnik, Badovac, Leposavic, Zvecan, and Maravce, Suplja Stijena	3,160.
Do.		Hemijska Industrija Zorka:		
		Brskovo, Rudnici Olova i Cinka	Mine at Brskovo, Montenegro	500.
Do.		Veliki Majdan Rudnik Olova i Cinka	Mine at mill near Krupanj, Serbia	250.
Lead, metal		Rudarsko Metalursko Hemijski Kombinat za Olovo i Cink Trepca	Smelter at Zvecan, Serbia	180.
Do.		do.	Refinery at Zvecan, Serbia	90.
Magnesite, concentrate		Rudnici Magnezita "Sumadija"	Mine and plant at Sumadija, 20	120.
Magnesite, concentrate		Rudilici Magnezita Sumadija	kilometers northwest of Cacak, Serbia	
Do.		Rudnik i Industrija Magnezita "Strezovce"	Opencast mine at Beli Kamen, Strezovce, near Itiova Metrovica, Serbia	300.
Do.		do.	Sinter plant at Strezovce	40.
Do.		Magnohrom, Rudnik Magnezita "Magnezit"	Mine at Bela Stena, Baljevac na Ibru, Serbia	30.
Natural gas	million cubic feet	Naftaplin (Naftagas), RO za Istrazivanje, i Prozvodnju Nafte i Gasa	Natural gasfields in Serbia Kinkinda and others	30,000.
Dotroloum		1 Gasa		
Petroleum:	thousand hamal J	Noftegas Noftes Industrial	Oilfields in Sorkies Wikinds I -4	20
Crude	thousand barrels per day	Naftagas, Naftna Industrija	Oilfields in Serbia; Kikinda and others	30.
Refined	do.	Naftagas, Naftna Industrija:		110
Do.	do.	Rafinerija Nafte Pancevo	Refinery at Pancevo, Serbia	110.
Do.	do.	Rafinerija Nafte Novi Sad	Refinery at Novi Sad, Serbia	28.
Pig iron		Metalurski Kombinat, Smederevo	Blast furance at Smederevo, Serbia	720.
Steel, crude		do.	Plant at Smederevo, Serbia	600.
Zinc metal		Rudarsko Metalursko Hemijski Kombinat Olova i Cinka Trepca,	Electrolytic plant at Titova Metrovica, Serbia	40.
		Metalurgija Cinka		
Do.		Hemijska Industrija Zorka	Electrolytic plant at Sabac, Serbia	40.