



2012 Minerals Yearbook

MACEDONIA

THE MINERAL INDUSTRY OF MACEDONIA

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Macedonia produced a number of metals, including copper, ferroalloys, and steel, as well as mine output of lead and zinc. Other mineral commodities produced in the country included bentonite, feldspar, gypsum, lignite, lime, and sand and gravel. Petroleum was imported and processed at the country's sole domestic refinery.

Minerals in the National Economy

In 2012, Macedonia's real gross domestic product (GDP) decreased by 0.3% compared with that of 2011. In 2011 (the latest year for which data were available), manufacturing made up 13.5% of the GDP and mining and quarrying made up only 1.5%. In 2012, mineral fuels, lubricants, and related materials made up about 21% of the value of Macedonian imports and about 6% of the value of exports. Macedonia's State Statistical Office listed ferronickel, flat-rolled steel products, and petroleum products as three of the country's five most significant export items, but data concerning the value of the trade of these goods in 2012 were not available. Based on the total volume of international commodity trade, the leading trade partners of Macedonia were Germany (17.2%), Greece (9.4%), Serbia (7.4%), Bulgaria (6.6%), and Italy (6.4%) (International Monetary Fund, 2013, p. 153; Republic of Macedonia State Statistical Office, 2013a, p. 30; 2013b, p. 1–2, 4).

Production

In 2012, the estimated production of copper content of concentrate increased by 37% to 10,400 metric tons (t) from 7,600 t (revised) in 2011 and the gross weight of the copper concentrate production increased by 26% to 45,266 t from 35,976 t. Ferronickel production increased by 11% to 83,700 t from 75,200 t, and nickel production increased by 11% to 19,247 t from 17,292 t. The production of sand and gravel increased significantly, to 124,442 t from 2,443 t. Silicomanganese production decreased by 72% to 14,179 t from 50,756 t; that of petroleum refinery products, by 65% to an estimated 1.9 million barrels (Mbbbl) from an estimated 5.4 Mbbbl; bentonite clay, by 52% to 6,900 t; agglomerated dolomite, by 50% to 2,606 t; and crude talc, by 47% to 286 t. Data on mineral production are in table 1.

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Gold.—Euromax Resources Ltd. of Canada held 100% interest in the Ilovitza gold-copper project, which is located about 18 kilometers (km) east of Strumica in southeastern

Macedonia. In July, the Government granted the company an exploitation concession agreement for the Ilovitza project and approved the project's environmental impact study. In October, a preliminary economic assessment was completed by Tetra Tech Inc. of the United States. The assessment reported that Ilovitza had the potential to be developed as an open pit mine and to process 8 million metric tons per year (Mt/yr) of sulfide material during a mine life of 19 years. The project would include the construction of roads, site buildings, tailings facilities, and power and water supplies. In late 2012, the company completed an 11,800-meter (m) diamond drilling program and expected to have a mineral resource update in mid-2013. A prefeasibility study was scheduled to be completed in the second quarter of 2013 (Euromax Resources Ltd., 2012a–c; Tetra Tech Inc., 2012, p. 2, 8, 9).

Genesis Resources Ltd. of Australia held a 62% interest in the Plavica project, which is located about 65 km east of the capital of Skopje in northeastern Macedonia. The project included seven exploration concessions and covers an area of about 185 square kilometers (km²). In May, the company announced inferred mineral resources based on the Australian Joint Ore Reserves Committee standards. The inferred mineral resources were estimated to be 55.46 million metric tons (Mt) at an average grade of 1.0 gram per metric ton (g/t) gold at a cutoff grade of 0.75 g/t, 22.63 Mt at an average grade of 29.7 g/t silver at a cutoff grade of 20 g/t, and 7.98 Mt at an average grade of 0.43% copper at a cutoff grade of 0.4%. The company hired Golder Associates Pty Ltd. of Australia to conduct a scoping study for the project, which would include mine planning, mineralogy and metallurgy studies, and an environmental and social impact study for the region. In August, the company hired Spektra Jeotek Sanayi ve Ticaret A.S. of Turkey to conduct 7,000 m of reverse-circulation drilling and 2,500 m of diamond core drilling. In December, Genesis announced its plans to conduct additional drilling of 46,000 m of reverse-circulation drilling and 23,000 m of diamond core drilling by 2013. The company planned to complete a feasibility study; however, no further details as to when this study would take place were available (Genesis Resources Ltd., 2012a, b; 2013, p. 2).

Mineral Fuels

Lignite.—Production of lignite came from the Brod-Gneotino (commissioned in July), the Oslomej-East, the Oslomej-West, and the Sudovol Mines, which were operated by state-owned AD ELEM. In 2011 (the latest year for which data were available), AD ELEM produced 8.1 Mt of lignite compared with 6.6 Mt in 2010 (AD ELEM, 2010, 2011).

The Bitola thermal powerplant generated about 70% of the total electricity produced in Macedonia. The plant is located 8 km east of the city of Bitola and had a capacity of about 675 megawatts (MW). The Bitola powerplant used coal

reserves from the Suvodol Mine, which were sufficient to supply the plant until 2014. The company expected to extend the coal reserves in Suvodol owing to the commissioning of the Brod-Gneotino Mine and the development of the deep underlying seam in the Suvodol-Bitola project; both projects are located in the Suvodol area. AD ELEM envisioned extending the operation of the Bitola plant to 2030. The deep underlying seam project was expected to be completed by 2013. The company also planned to develop new projects in the country, including the Mariovo lignite deposit and thermal powerplant and the Zivojno coal deposit (AD ELEM, 2012a, p. 2, 4–9, 13).

AD ELEM planned to construct the Mariovo powerplant with a capacity of about 300 MW. A prefeasibility study was underway, and the plant was expected to be completed by 2016. The plant would use coal from the Mariovo lignite deposit, which is located 30 km south of Prilep and covers an area of about 14 km². The deposit had estimated reserves of about 96.7 Mt of coal. The company reported that the Mariovo deposit had the potential to be developed as an underground mine and to produce about 2 Mt/yr of coal during a mine life of 30 years. Development of the Mariovo Mine was expected to be completed by 2015 (AD ELEM, 2012a, p. 6, 18–19; 2012c).

Zivojno Bitola is located in the Pelagonia Region about 35 km southeast of Bitola and 20 km from the Suvodol Mine and its extension, the Brod-Gneotino Mine. The deposit, which covers an area of about 25 km², was estimated between the years of 1966 and 1984 to contain reserves of about 100 Mt of coal. Based on a feasibility study conducted in 2004, the production capacity at Zivojno was estimated to be about 3 Mt/yr of coal. AD ELEM reported that studies were underway at Zivojno, including the classification and recategorization of the coal reserves, as well as engineering, geologic, and hydrogeologic investigations. The project was expected to be completed by 2017 (AD ELEM, 2012a, p. 8–9; 2012b).

Outlook

The Government of Macedonia forecasted an increase in the GDP of 2.0% in 2013. The modernization and rehabilitation of the Bitola and the Oslomej thermal powerplants, the expansion plans at the Suvodol project, and plans to develop the Mariovo and the Zivojno deposits are expected to strengthen the mineral industry in the short run. In the longer run, new projects in the nonfuel mineral sector, such as the possible development of new gold-copper deposits, are likely to attract foreign investment in the mineral sector and to increase interest in nonfuel mineral prospecting (International Monetary Fund, 2013, p. 153).

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TABLE 1
MACEDONIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2008	2009	2010	2011	2012	
METALS						
Copper, mine and concentrator output:						
Ore, gross weight	thousand metric tons	4,240	3,767	4,199	4,118	4,435
Concentrate:						
Gross weight		38,337	35,430	37,678	35,976	45,266
Cu content ^e		8,400	7,600	7,900	7,600 ^r	10,400
Metal, refined		--	--	--	-- ^r	2,300
Iron and steel:						
Ferroalloys:						
Ferromanganese		12,623	--	--	--	--
Ferronickel (23% Ni), gross weight ^e		65,300	52,200	62,700	75,200	83,700
Ferrosilicon		42,674	7,657	30,044	56,167	42,402
Silicomanganese		54,931	--	36,705	50,756	14,179
Total		175,528	59,857	129,449	182,123	140,281
Steel:						
Crude, secondary		252,461	276,215	292,126	386,000	216,000
Semimanufactures		252,946	270,397	291,886	385,816	216,934
Lead, mine output, concentrate, Pb content ^e		35,000	38,000	38,000 ^r	36,000 ^r	34,000
Nickel, Ni content of FeNi		15,026	12,000	14,413	17,292	19,247
Zinc, mine output, concentrate, Zn content ^e		29,000	29,000 ^r	29,000 ^r	28,000 ^r	28,000
INDUSTRIAL MINERALS						
Cement	thousand metric tons	916	909	820	981	683
Clays, bentonite		22,890	15,350	12,798	14,466	6,900
Dolomite:						
Agglomerated		4,179	3,814	4,748	5,249	2,606
Not frayed, not calcined		75,855	78,523	116,290	125,700	129,120
Sintered		23,933	21,607	24,989	28,251	23,062
Feldspar, crude		28,920	19,377	23,188	25,032	17,168
Gypsum, crude		242,400	154,550	143,118	162,984	157,844
Lime		--	2,713	2,700 ^e	2,700 ^e	2,700 ^e
Limestone flux		827,100	694,968	1,063,839 ^r	1,142,662 ^r	818,559
Marl		1,083,830	560,170	749,750	861,666	954,495
Pumice and related materials, volcanic tuff		103,476	113,064	113,323	57,356	52,911
Sand and gravel, excluding glass sand		124,000 ^r	49,009 ^r	64,789 ^r	2,443 ^r	124,442
Silica sands (quartz sands or industrial sands)		131,735 ^r	112,106 ^r	116,079 ^r	125,949 ^r	125,900 ^e
Stone, excluding quartz and quartzite:						
Crushed and broken		33,023	59,715	130,105	104,209	60,403
Dimension, crude		71,819	69,082	78,603	64,320	64,384
Talc, crude		977	682	1,292	547	286
MINERAL FUELS AND RELATED MATERIALS						
Lignite	thousand metric tons	7,746	7,454	6,583	7,902	7,310
Petroleum, refinery products ^{e, 3}	thousand 42-gallon barrels	8,300	7,700	6,600	5,400	1,900

^eEstimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through August 5, 2013.

²In addition to commodities listed, secondary aluminum in small amounts, common clay, diatomite, and gold contained in copper concentrate also are thought to have been produced, but available information is inadequate to make reliable estimates of output.

³Figures were converted to barrels from production in thousand metric tons, which was reported as the following: 2008—1,036; 2009—963; 2010—829; 2011—680; and 2012—243.

TABLE 2
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Usje Cementarnica AD (Titan S.A., 95%)	Plant at Skopje	1,000 ^c
Copper:				
Ore		Bucim Mine (Solway Investment Group Ltd.)	Mine and mill at Bucim, west of Radovis	4,500
Metal		do.	Solvent extraction and electrowinning plant at Bucim, west of Radovis	3,000
Ferroalloys:				
Ferrosilicon	metric tons	Jugohrom Ferroalloys DOO (Camelot Group)	Plant at Jegunovce	66
Silicomanganese	do.	Skopski Leguri DOOEL	Plant at Skopje	56
Ferromanganese	do.	do.	do.	66
Ferronickel, Ni content of ferronickel	do.	Feni Industries (Cunico Resources)	Ferronickel plant at Kavadarci	22 ^c
Do.	do.	Skopski Leguri DOOEL	Plant at Skopje	500
Gold, mine output, Au in copper concentrate		Bucim Mine (Solway Investment Group Ltd.)	Mine and mill at Bucim, west of Radovis	NA
Lead, metal		MHK Zletovo (Metrudhem DOOEL)	Imperial smelter and refinery at Veles	NA ¹
Lead-zinc, concentrate		Sasa Mine (Solway Investment Group Ltd.)	Mill at Sasa, north of Makedonska Kamenica	NA
Lead-zinc ore		do.	Mine at Sasa, north of Makedonska Kamenica	1,000 ^c
Do.		Zletovo Mine (Indo Minerals and Metals DOOEL)	Mine and mill near Probstip	NA
Do.		Toranica Mine (Indo Minerals and Metals DOOEL)	Mine near Dolga Livada	NA
Lignite		AD ELEM (state owned)	Mine at Suvodol	6,500
Do.		do.	Mine at Oslomej	1,000
Do.		do.	Star Rudnik Mine at Oslomej	310 ^c
Do.		do.	Brod-Gneotino Mine, south of Suvodol near Brod	2,000
Nickel, ore		Feni Industries (Cunico Resources)	Opencast mine at Rzanovo, 32 kilometers south of Kavadarci	NA
Petroleum, refined	42-gallon barrels	OKTA A.D. Skopje (EL.P.ET Balkanike, 81.51%)	Oil refinery at Skopje	20,000 ^c
Steel, crude, secondary		Makstil A.D. Skopje (Duferco Group, 62%)	Plant at Skopje	360
Zinc, metal		MHK Zletovo (Metrudhem DOOEL)	Imperial smelter and refinery at Veles	NA ¹

^cEstimated. Do., do. Ditto. NA Not available.

¹MHK Zletovo, Macedonia's only producer of lead and zinc metal, was idled in 2003 or 2004 after bankruptcy proceedings were initiated. Attempts have been made to restart the plant since it was closed, but so far none of these attempts has been successful.