



2015 Minerals Yearbook

MACEDONIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF MACEDONIA

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Macedonia produced several metal mineral commodities in 2015 including copper, ferroalloys, and steel, as well as mine output of lead and zinc. Industrial minerals produced in the country included bentonite, feldspar, gypsum, lime, sand and gravel, and stone. Lignite was the only mineral fuel produced domestically (table 1).

The mineral industry in Macedonia was regulated by the Government through the Ministry of Economy, which issued permits for the exploration and extraction of mineral resources. Mining was regulated chiefly by the Law on Mineral Resources Nos. 136/12, 25/13, 93/13, 44/14, and 160/14. Activities in oil and natural gas were regulated by the Energy Law Nos. 16/11, 136/11, 79/13, 164/13, 41/14, 151/14, and 33/15. In addition, various environmental laws required integrated ecological permits in order to conduct reconnaissance, exploration, and mining operations (Dameski and Angelovska, 2015b).

Minerals in the National Economy

In 2015, Macedonia's real gross domestic product (GDP) increased by an estimated 3.7% compared with an increase of 3.5% in 2014, and it was expected to increase by an estimated 3.6% in 2016. The nominal GDP in 2015 was \$9.9 billion. The mining and exploration sectors were recognized by the Macedonian Government as significant contributors to the GDP and were supported by all relevant ministries. Macedonia was dependent on foreign direct investment and the investment was a cornerstone of the Macedonian Government's economic development strategy. The mining sector represented about 15% of industrial production and contributed about 1.5% of the GDP. The mining sector and associated cooperative sectors (not further specified) employed 13,000 people. The industrial production index for the sector increased by 9.2% in June 2015 compared with the index in June 2014 (Jakimovski and Belchovski, 2015; Petroska, 2015; International Monetary Fund, 2016; Reservoir Minerals Inc., 2016).

In 2015, total industrial production, in terms of output, increased by 4.9% compared with that of 2014. In the mining and quarrying sector, production decreased by 1.4% in 2015. Within this sector, lignite mining decreased by 8.4% and the mining of metal ores decreased by 1.1%, whereas other mining and quarrying activity increased by 4.9%. In the manufacturing sector, the manufacture of fabricated metal products, except machinery and equipment, increased by 11.8%; the manufacture of basic metals increased by 6.3%; and the manufacture of other nonmetallic mineral products increased by 0.5% (Republic of Macedonia State Statistical Office, 2016a).

Production

In 2015, the number of mineral commodities that showed an increase or decrease in production compared with that of 2014 was about evenly split. In 2015, the production of silica sands

increased by 591% compared with that of 2014, to 228 metric tons (t); the reason for the increase was not specified but was likely owing to increased construction. The production of copper metal (by solvent extraction and electrowinning) increased by 42% to 2,400 t; the production of limestone flux increased by 33% to 998,317 t; that of crude talc increased by 24% to 598 t; granite, by 16% to 872 t; crushed and broken stone (excluding quartz and quartzite), by 13% to 406,482 t; feldspar, by 12% to 20,289 t; gypsum, by 10% to 172,525 t; and the gross weight and copper content of copper concentrate, by 9% each to 42,690 t and 8,500 t, respectively (table 1).

The production of ferrosilicon decreased by 37% in 2015 to 45,698 t. Other decreases in production included that of quartzite, which decreased by 36% to 47,062 t; steel semimanufactured products, by 35% to 121,034 t; lime for cement, by 26% to 8,003 t; bentonite and marble, by 23% each to 9,004 t and 424 t, respectively; sand and gravel for construction, by 19% to 125,247 t; dolomite that was not frayed or calcined, and sintered dolomite, by 17% each to 109,608 t and 15,473 t, respectively; crude steel, by 16% to 165,235 t; the lead content and gross weight of lead concentrates, by 13% each to an estimated 28,698 t and 51,246 t respectively; and agglomerated dolomite, by 13% to 1,294 t. The production of sintered dolomite, lignite, and refined petroleum products had been in decline for the past 5 years. Data on mineral production are in table 1.

Structure of the Mineral Industry

Macedonia's privatization program was nearly complete, and private capital dominated the market. State-owned enterprises operated in several sectors, including energy, water supply, and utilities (U.S. Department of State, 2015, p. 6, 16). Table 2 is a list of major mineral industry facilities.

Mineral Trade

In 2015, the value of exports decreased by 10% to \$4.5 billion from \$5.0 billion in 2014. The leading mineral-related exports were, in order of value, basic metals (valued at \$591 million, or 13.2% of all exports), iron and steel (\$573 million, or 12.7%), mining and quarrying products (\$156 million, or 3.5%), metal ores (\$131 million, or 2.9%), fabricated metal products except machinery and equipment (\$51 million, or 1.1%), refined petroleum products (\$39 million, or 0.9%), other mining and quarrying products (\$24 million, or 0.5%), and nonferrous metals (\$17 million, or 0.4%). In terms of value, Macedonia's leading five export partners in 2015 were Germany (\$2.0 billion, or 44.3% of the value of all exports), Bulgaria (\$271 million, or 6.0%), Serbia (\$205 million, or 4.6%), Italy (\$181 million, or 4.0%), and Greece (\$166 million, or 3.7%) (National Bank of the Republic of Macedonia, 2016; Republic of Macedonia State Statistical Office, 2016c–e).

In 2015, the value of imports decreased by 12% to \$6.4 billion from \$7.3 billion in 2014. The leading mineral-related imports were, in order of value, basic metals (valued at \$1.2 billion, or 18.3% of all imports), nonferrous metals (\$825 million, or 12.9% of imports), refined petroleum products (\$493 million, or 7.7%), iron and steel (\$323 million, or 5.0%), mining and quarrying products (\$170 million, or 2.7%), fabricated metal products except machinery and equipment (\$130 million, or 2.0%), metal ores (\$90 million, or 1.4%), crude petroleum and natural gas (\$49 million, or 0.8%), coal and lignite (\$19 million, or 0.3%), and other mining and quarrying products (\$11 million, or 0.2%). In terms of value, Macedonia's leading five import partners in 2015 were Germany (\$809 million, or 12.6% of the value of all imports), the United Kingdom (\$621 million, or 9.7%), Greece (\$499 million, or 7.8%), Serbia (\$493 million, or 7.7%), and China (\$391 million, or 6.1%) (National Bank of the Republic of Macedonia, 2016; Republic of Macedonia State Statistical Office, 2016c–e).

Commodity Review

Metals

Copper and Gold.—No gold mines were in operation in Macedonia in 2015. The Buchim Mine in Radovis, which was operated by the Solway Investment Group Ltd. of Russia, was the only working copper mine in Macedonia in 2015, and it also produced small quantities of gold and zinc. As of the end of 2014, four copper and gold projects were in various stages of development in eastern and southeastern Macedonia—Ilovitza in Vasileva, Kadiica in Pehcevo, Kazandol in Valandovo, and Zlatica-Plavica near Probistip and Kratovo (Free Library, The, 2014; SeeNews, 2015).

Euromax Resources Ltd. of Canada, through its Macedonian affiliate Euromax Resources DOO Skopje, was the sole owner of the greenfield Ilovitza porphyry copper-gold project. The project was located in southeastern Macedonia approximately 15 kilometers (km) west of the border with Bulgaria. The project received investments from the European Bank for Reconstruction and Development (EBRD), RGLD Gold AG of Switzerland (a wholly owned subsidiary of Royal Gold, Inc. of the United States), and Investec Bank plc (Euromax Resources Ltd., 2014, p. 1–2; 2015b).

Euromax released a prefeasibility study in December 2014, which included estimates for both fresh and oxidized mineral resources. The measured and indicated fresh resources were 240 million metric tons (Mt) grading 0.33 gram per metric ton (g/t) gold and 0.22% copper. Content was estimated to be 79,000 kilograms (kg) of gold and 510,000 t of copper. The measured and indicated oxidized resources were 36 Mt grading 0.33 g/t gold; contained metal was estimated to be 12,800 kg of gold. Total probable reserves were estimated to be 225 Mt grading 0.34 g/t gold and 0.20% copper; content was estimated to be 76,204 kg of gold and 410,000 t of copper (Euromax Resources Ltd., 2014, p. 1-11, 1-12, 1-13).

Euromax planned to submit an application for an extraction permit by the middle of 2016. Construction was planned to begin in late 2016 or early 2017, and mine production was scheduled to start in 2017 or 2018. The company planned

to mine the deposit by the open pit method. Mined ore was to be processed at an onsite plant with a capacity of 10 million metric tons per year (Mt/yr), which would produce copper concentrate and gold dore bars. The average yearly metal production delivered to the mill was expected to be about 3,100 to 3,400 kg of gold and 17,200 to 17,700 t of copper. Euromax expected that 400 to 500 permanent jobs would be created during the operational stage of the Ilovitza project, although employment would be higher during the 18-month construction phase. The expected mine life was 23 years. Euromax announced on December 8 that it had entered into an agreement with Aurubis AG of Germany to sell up to 100% of the produced copper concentrate to Aurubis for up to 10 years. The concentrate was to be delivered to Aurubis's Pirdop copper smelter in Bulgaria (Euromax Resources Ltd., 2014, p. 1-18, 25-1; 2015a–c).

The Ministry of Economy and Kadiica Metals (a subsidiary of the Solway Investment Group) signed a concession agreement in July for the Kadiica copper mine near Pehcevo, in eastern Macedonia. Kadiica Metals had worked on an exploration program since 2010. After signing the concession, Kadiica Metals announced an investment of about \$44 million for the next stage towards opening the mine. Solway proposed to use a combination of open pit and underground mining methods as well as a closed system of water collection and treatment in order to mitigate environmental concerns, which had delayed the opening of the mine for 2 years. Approximately 300 people were expected to be employed at the mine (Macedonian Business Monthly, 2014; Kurir News Agency, 2015; Mining See, 2015).

At the end of February 2015, the Macedonian company Sardic MC DOOEL Skopje signed a concession with the Macedonian Government for mining the open pit at the Kazandol copper-gold-silver project near Valandovo in eastern Macedonia. The contract called for a total investment of 250 million euros (EUR)¹ (\$277 million) over 4 years. In the first stage, the company was expected to invest EUR25 million (\$28 million) and employ 250 people. Under the agreement, initially a plant for copper cathode production with a capacity of 4,000 metric tons per year (t/yr) would be built. Construction was to begin in May, and production was planned by yearend; the current status of the project could not be verified (Macedonian Business Monthly, 2015; Macedonian International News Agency, 2015).

The Plavica gold-copper-silver project, which was located in the Kratovo District about 65 km east of Skopje in northeastern Macedonia, was administered by Silgen Resources International Ltd. Kratovo, which was a joint venture between Genesis Resources Ltd. of Australia (62%) and RIK Sileks AD Kratovo (38%). In May 2015, the Government of Macedonia granted Silgen Resources a 30-year mining license that covered an area of 16.85 square kilometers (km²). Under the terms of the joint-venture agreement, Genesis commenced infill and extensional drilling of the known mineralization as well as at a number of new targets; Genesis was also responsible for

¹Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR0.9012=US\$1.00 for 2015.

completing a feasibility study (Resources Stocks to Watch, 2015; Genesis Resources Ltd., 2016).

Reservoir Minerals Inc. of Canada, through its 100%-owned operating companies, held two mineral exploration concessions and two prospecting concessions in eastern Macedonia. Reservoir Minerals Macedonia DOOEL was granted the Konjsko mineral exploration concession, located in southeastern Macedonia, in July 2013. The concession covered an area of about 30 km² and was valid for 4 years. Reservoir Minerals DVB DOOEL was granted the Dvoriste mineral exploration concession in January 2015, which was valid for 4 years. The concession was located in eastern Macedonia near the border with Bulgaria, and covers an area of approximately 25 km². Reservoir Minerals completed reconnaissance geochemical sampling and geologic mapping at the end of 2015 (Reservoir Minerals Inc., 2016).

Reservoir Minerals Macedonia DOOEL was awarded two prospecting concessions in 2015. The Southeast Macedonia prospecting concession, which covered an area of 2,612 km², was awarded in September. The East Macedonia prospecting concession covered an area of approximately 2,125 km² and was also awarded in September. Regional geochemical sampling and mineral occurrence mapping were planned for 2016 for both prospecting concessions. As concession holder, the company had the right to carry out a 2-year prospecting program, after which it had exclusive rights to apply for an exploration concession (Reservoir Minerals Inc., 2016).

Iron and Steel.—FENI Industries A.D. (FENI), which was a subsidiary of Cunico Resources NV of the Netherlands, produced ferronickel at its smelter in Kavadarci, Macedonia. In 2015, the production of nickel content in ferronickel was 17,699 t, which was a decrease of 2% compared with that of 2014. In 2014, 83,915 t of ferronickel was exported primarily to Europe and Asia. The Rzanovo Mine, which was operated by FENI, was an open pit nickel ore mine in the southern part of the country that supplied a portion of the raw materials used by FENI's smelter before 2013. In January 2013, the Rzanovo Mine was closed and about 30 miners were dismissed. In October 2012, Cunico acquired the Guaxilan S.A. nickel ore mining complex in Guatemala and started to import ore from Guatemala. Higher grade ores had also been imported from Albania, Greece, Indonesia, the Philippines, and Turkey. In 2014, about 1.39 Mt of nickel ore and concentrate was imported for use at FENI's ferronickel smelter. Nickel ores used as raw materials contained 0.9% to 2.2% nickel and 15% to 40% iron, and the typical ferroalloys produced by FENI contained about 20% nickel and 80% iron. Converter and electro-furnace slag was a secondary product from ferronickel production, which had been commercialized and exported worldwide. FENI had 888 employees in Macedonia as of December 2014 (Dimitrievska, 2013; Cunico Resources NV, 2015, p. 13; 2016; FENI Industries, 2015, p. 3; Republic of Macedonia State Statistical Office, 2015, p. 563, 566).

Makstil A.D., which was a subsidiary of the Dufenco Group of Luxembourg, was a major producer of hot-rolled heavy plates and semifinished steel slabs in Macedonia. The company operated a steelmaking plant and rolling mill in Skopje. In 2015, Makstil A.D. had 788 employees, and the company

reported production of 165,191 t of plates and 121,296 t of slabs (Makstil A.D., 2016).

ArcelorMittal Skopje AD was one of the leading steel product manufacturers in Macedonia. The main products of ArcelorMittal Skopje included rolled coils and sheets and galvanized and prepainted coils. In 2015, Macedonia exported 279,719 t of rolled products (Republic of Macedonia State Statistical Office, 2015, p. 563, 564; 2016b, p. 48; ArcelorMittal, 2016).

Lead and Zinc.—Lead and zinc ores were produced at the Sasa Mine operated by the Solway Investment Group, Ltd. at Sasa in the Makedonska Kamenica Municipality; and at the Zletovo (Dobrevo) Mine near Probistip and the Toranica Mine near Kriva Palanka in northeastern Macedonia. Both the Zletovo Mine and the Toranica Mine were operated by Indo Minerals and Metals DOOEL, which was a subsidiary of the Binani Group of India. In November, the municipal court in Stip initiated bankruptcy proceedings against Indo Minerals and Metals for nonpayment of debts associated with the Zletovo and Toranica Mines. The Government also submitted a draft decision for the unilateral termination of the concession contracts owing to nonpayment of concession and exploration fees (Heywood, 2015, p. 6; SeeNews, 2015).

The Solway Investment Group Ltd. announced in November 2015 that it had concluded an agreement to sell its Sasa lead-zinc mine to the Orion Mine Finance Group (Orion) of the United States. The purpose of the sale was to allow Solway to focus on its copper and nickel assets in Argentina, Guatemala, Indonesia, and Ukraine. Orion partnered with Fusion Capital AG of Switzerland to establish Lynx Resources Ltd. to acquire the mine through its wholly owned subsidiary, Lynx Europe SPLLC Skopje. The Sasa Mine was acquired, along with the Bucim copper, gold, and zinc mine, by Solway in 2005. Sasa's annual production was 780,000 t of ore, yielding 60,000 t/yr of zinc and lead in concentrate, and about 12,40 kilograms per year of silver in concentrate (SeeNews, 2015; Solway Investment Group, 2015)

Industrial Minerals

Cement.—The Titan Group of Greece (a subsidiary of Titan Cement Co. S.A.) held a 100% interest in Cementarnica USJE AD (USJE), which was the sole cement production facility in Macedonia. In 2014, consumption of cement in Macedonia decreased by about 8.5% from the previous year owing to the weak regional economy. In 2015, economic conditions improved slightly, and USJE produced about 672,000 t of cement, which was an increase of 2% from that of 2014. In 2015, construction activity in southeastern Europe did not change significantly from the relatively low levels of the preceding year as the region continued to be affected by the economic slowdown of neighboring countries of the euro area. The company had 314 employees at the end of 2014 (table 1; Titan Group, 2015, p. 28, 55, 71; 2016).

Mineral Fuels and Related Materials

Coal.—Lignite was the principal resource used for the production of electricity in Macedonia. Macedonia had an

estimated 2.5 billion metric tons of lignite reserves and was a significant lignite producer. The two largest lignite mines, in terms of production, were the Oslomej and the Suvodol Mines, which provided fuel for the state-owned thermal powerplants. The state-owned energy producer, AD Elektrani na Makedonija (AD ELEM), mined lignite at the Brod-Gneotino, the Oslomej, and the Suvodol Mines using surface mining methods. The mines supplied fuel to the Oslomej and Bitola thermal powerplants, which were operated by AD ELEM, and provided 80% to 85% of the country's electricity production. In 2015, lignite production decreased by 8% to 5.9 Mt from 6.5 Mt in 2014 (table 1; AD Elektrani na Makedonija, 2016b, d).

The Oslomej mines produced 1.2 Mt/yr of lignite. The Oslomej East Mine was depleted, and the Oslomej West Mine was in the final stage of exploitation. The Star Rudnik Mine was part of the Oslomej East Mine. The Oslomej West Mine supplied lignite to the Oslomej thermal powerplant. The plant, which began operations in 1980, had a single unit with an installed capacity of 125 megawatts (MW) and produced about 10% of the country's electricity. Owing to the depletion of reserves at the Oslomej West Mine and social-cultural obstacles associated with exploration of the Popovjani deposit, a feasibility study was undertaken in 2015 to investigate the modernization of the Oslomej powerplant by converting it to use imported coal to increase efficiency and to extend the service life of the plant by at least 30 years. The project was to be implemented during a period of 4 years, and the capital investment was expected to be EUR126 million (\$140 million) (AD Elektrani na Makedonija, 2014a; 2015, p. 2, 7–8; 2016c).

The mine at Suvodol, located 15 km east of Bitola, occupied an area of 9 km². Exploitable reserves at the mine were calculated to be 161 Mt. The average thickness of the lignite layers was about 20 meters (m), and they occurred at depths of from 30 to 100 m. The deep underlying seam at Suvodol, which was located beneath the main producing layer of the surface mine, extended over an area of approximately 3 km². Exploitable reserves of the underlying seam were estimated to be 50 Mt of lignite. The main surface mine and the underlying seams at Suvodol along with the Brod Gneotina Mine supplied lignite to the Bitola thermal powerplant, which is located in Novaci. The Bitola plant, which started operating in 1982, consisted of three units, each of which had an installed capacity of 233 MW for a total of approximately 700 MW. The plant supplied 70% to 80% of the total electricity generated in Macedonia (AD Elektrani na Makedonija, 2014b; 2016a, d).

Lignite for industrial purposes and general consumption was produced by open pit mines at BRIK Berovo and Drimkol, which were operated by concessionaires (privately owned shareholding companies). The total exploitable reserves at BRIK Berovo, which was located near Berovo in the eastern part of the country, were estimated to be approximately 1 Mt. The annual production was dependent on demand and ranged from 35,000 to 70,000 t/yr. The BRIK Drimkol Mine was located near the Globochica reservoir in the southwestern part of the country, and production ranged from 40,000 to 70,000 t/yr (Dameski and Angelovska, 2015a).

Petroleum Refinery Products.—EL.P.ET. Balkaniki S.A. of Greece, which was a subsidiary of Hellenic Petroleum S.A. of

Greece, owned an 81.51% interest in OKTA AD, which was the sole petroleum refinery in Macedonia. The refinery was located in Skopje and had a nominal capacity of 2.5 Mt/yr and a storage capacity of 330,000 cubic meters. The plant was connected to the Thessaloniki refinery in Greece by a pipeline used to transport high-value-added products. The refinery has been shut down since January 2013 owing to inefficient operation. In 2015, OKTA was focused on trading and marketing of imported petroleum products and had sales of 661,000 t. Hellenic Petroleum supplied 65% of the market needs in Macedonia (EL.P.ET. Balkaniki S.A., 2016; Hellenic Petroleum, 2016, p. 8, 33; Okta, 2016).

Outlook

The Government of Macedonia recognizes the importance of the mineral sector to the economy and encourages foreign investment in the development and expansion of the mineral industry. The four copper and gold projects in various stages of development are likely to increase the production of these minerals in the medium to long term and may attract additional foreign investment in the mineral sector. Expansion of lignite reserves at the Suvodol Mine and modernization of the thermal powerplants at Bitola and Oslomej could significantly increase the lifespans of the plants. Challenges in the steel industry are expected to continue owing to global overcapacity.

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TABLE 1
MACEDONIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015
METALS					
Aluminum, secondary	423	426	101	--	--
Copper, mine and concentrator output:					
Ore, gross weight	4,118	4,435	4,646	4,366 ^r	4,664
Concentrate:					
Gross weight	35,976	45,266	46,677	38,987	42,690
Cu content ^c	7,200	9,100	9,300	7,800	8,500
Metal, refined, electrowon	--	1,000	1,890	1,690	2,400
Iron and steel:					
Ferroalloys:					
Ferronickel ^c	75,200 ^r	90,400 ^r	91,900 ^r	78,500 ^r	77,000
Ferrosilicon	56,167	42,402	72,279	73,014	45,698
Silicomanganese	50,756	14,179	--	--	--
Total	182,123 ^r	146,981 ^r	164,179 ^r	151,514 ^r	122,698
Steel:					
Crude, secondary, plates	348,576 ^r	225,224 ^r	145,633	196,454 ^r	165,235
Semimanufactures, slabs	385,816	216,935	99,689	187,997 ^r	121,304
Lead concentrates:					
Gross weight	50,398	52,951	57,873	59,203	51,246
Pb content	28,223	29,653	32,409	33,154	28,698
Nickel, Ni content of FeNi	17,292 ^r	20,782 ^r	21,133 ^r	18,054	17,699
Zinc concentrates:					
Gross weight	56,264	56,074	61,815	63,140	58,299
Zn content	28,132	28,037	30,907 ^r	31,570	29,150
INDUSTRIAL MINERALS					
Cement	930 ^r	645 ^r	730 ^r	660 ^r	672
Clay, bentonite	8,918 ^r	2,355 ^r	18,520 ^r	11,691 ^r	9,004
Feldspar, crude	25,032 ^r	17,168 ^r	15,168 ^r	18,076 ^r	20,289
Gypsum, crude	122,234 ^r	118,379 ^r	162,661	156,492	172,525
Lime for cement	--	--	381	10,836	8,003
Limestone flux	1,142,662	818,559	976,452	753,429	998,317
Marl	861,666	954,495	788,049	660,827	637,860
Sand and gravel, construction (excluding quartz and quartzite)	2,443	124,442	126,773	154,256	125,247
Silica sands (quartz sands or industrial sands)	52	68	58	33	228
Stone, excluding quartz:					
Crushed and broken	104,209	60,403	98,138	358,821	406,482
Marble and travertine, crude	53	76	114 ^r	548	424
Dolomite:					
Agglomerated	5,249	2,606 ^r	1,434 ^r	1,484 ^r	1,294
Not frayed, not calcined	125,700	129,120	122,142	131,918 ^r	109,608
Sintered	28,251 ^r	23,062 ^r	21,663 ^r	18,747 ^r	15,473
Granite, crude	--	--	1,177	752	872
Quartzite	49,590	16,865	35,899	73,698	47,062
Talc, crude	547	286 ^r	621	483	598
Volcanic tuff	57,356	52,911	67,663	65,504	70,148

See footnotes at end of table.

TABLE 1—Continued
MACEDONIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015	
MINERAL FUELS AND RELATED MATERIALS						
Lignite	thousand metric tons	7,902	7,310	6,634 ^r	6,470	5,928
Petroleum refinery products:						
Gasoline	thousand 42-gallon barrels	12,890	5,371	1,690	18	--
Kerosene	do.	3,476	2,141	600	--	--
Distillate fuel	do.	31,787	7,795	2,526	42	--
Liquefied petroleum gas	do.	1,701	849	243	--	--
Residual fuel	do.	6,090	2,404	1,083	12	--
Others	do.	36,870	14,425	3,121	--	--
Total	do.	92,814	32,985	9,263	72	--

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

¹Table includes data available through May 26, 2016.

²In addition to the commodities listed, Macedonia also produced common clay, diatomite, and gold, but available information was inadequate to make reliable estimates of output.

TABLE 2
MACEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, secondary	J.S.A. Teal Co.	Tetovo City	2,000
Do.	RZ Insitute (Mines and Ironworks Institute AD)	Skopje	2,000
Cement	Cementarnica USJE AD (Titan Cement Co. S.A., 100%)	Plant at Skopje	2,100 ^c
Copper, gold, and silver:			
Ore	Solway Investment Group Ltd.	Mine and mill at Buchim, west of Radovis	4,000
Metal, Cu	do.	Solvent extraction and electrowinning plant at Buchim, west of Radovis	40
Feldspar	AD Nemetali Ograzden	Strumica	NA
Ferroalloys:			
Ferromanganese	metric tons do.	do.	66
Ferronickel, Ni content	do. FENI Industries A.D. (Cunico Resources NV)	Ferronickel plant at Kavadarci	22
Ferrosilicon	do. Jugohrom Ferroalloys DOO (Camelot Group)	Plant at Jegunovce	66
Silicomanganese	do. Skopski Leguri DOOEL	Plant at Skopje	56
Lead-zinc:			
Concentrate	Solway Investment Group Ltd.	Mill at Sasa, north of Makedonska Kamenica	750
Ore	do.	Sasa Mine at Sasa, northern Makedonska Kamenica	780
Do.	Indo Minerals and Metals DOOEL	Zletovo Mine near Probitip	26
Do.	do.	Toranica Mine near Kriva Palanka	NA
Smelter	do.	Topilnica, City of Vesel	100
Lignite	AD Elektrani na Makedonija (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
Do.	BRIK Berovo and Drimkol (concessionaires)	Surface mines near Berovo and Globochica reservoir	140
Limestone	AD Nemetali Ograzden	Strumica	NA
Marble	Mermeren Kombinat AD	Prilep	NA
Do.	Fox Marble Holdings plc	do.	NA
Nickel, ore	FENI Industries (Cunico Resources NV)	Open pit mine at Rzanovo, 32 kilometers south of Kavadarci	22
Petroleum, refined	OKTA AD Skopje (EL.P.ET Balkani S.A., 81.51%; Puko Petrol, 10.87%; company employees, 7.62%)	Oil refinery at Skopje	2,500
Steel, crude, secondary	Makstil A.D. Skopje (Duferco Group, 62.4%; Minyork Overseas Ltd., 19.4%; other shareholders 18.2%)	Plant at Skopje	360
Steel, semimanufactured	do.	do.	750 ^c
Do.	ArcelorMittal Skopje AD (ArcelorMittal)	do.	1,000

^cEstimated: estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.