



# 2017–2018 Minerals Yearbook

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**BULGARIA [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF BULGARIA

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**Note: In this chapter, information for 2017 is followed by information for 2018.**

In 2017, the minerals mined in Bulgaria included barite, clay, copper, gold, gypsum, lead, lignite, limestone, manganese, sand and gravel, silver, vermiculite, and zinc. The metallurgical sector smelted and refined cadmium, copper, lead, tellurium, and zinc, and produced raw steel and processed steel products. The mineral fuel sector processed coal, crude petroleum, natural gas, and refined products. In 2017, Bulgaria ranked sixth in the world in production of vermiculite and seventh in production of tellurium (not including that of the United States), accounting for 3% and 1% of world production, respectively (table 1; Anderson, 2019; Tanner, 2019).

## Minerals in the National Economy

In 2017, Bulgaria's real gross domestic product (GDP) increased by 3.6% compared with 3.9% (revised) in 2016; the nominal GDP was \$59.0 billion. The value of mining sector production accounted for about 3.8% of the total industrial sector production. The value of manufacturing sector production accounted for about 83.6% of the total value of production of all industrial enterprises compared with 82.2% in 2016. Within the manufacturing sector, the value of production of basic metal and fabricated metal products (except machinery and equipment) accounted for about 19.1% of total industrial sector production compared with 16.6% in 2016. The value of mining sector production (at constant 2010 prices) increased by 1.1% compared with an increase of 1.8% in 2016. The value of manufacturing sector production (at constant 2010 prices) increased by 7.7% following an increase of 4.8% in 2016 (World Bank Group, The, 2017; International Monetary Fund, 2018, p. 156; National Statistical Institute, 2018b, p. 193–195).

## Production

In 2017, crushed chalk (including dolomite) production increased by 219%; sand and gravel for construction (unspecified), by 59%; barite, by 34% (estimated); raw steel and primary smelter copper, by 32% each; refined secondary copper, by 30%; sulfur (sulfuric acid), by 27%; bentonite, by 21%; gold, by 19%; kaolin, by 16%; refined tellurium, by 14%; lignite, by 10%; iron and steel, rolled products, by 8%; mined zinc (Zn content), by 7%; hydraulic cement, by 6%; and refined bismuth (Bi content), by 6% (estimated). Production of mined manganese (Mn content) decreased by 53%; natural gas (marketable), by 21%; stone (other, size and shape unspecified, including granite, sandstone, and other building material), by 14%; mined lead (Pb content) and secondary aluminum, by 11% each; and refined cadmium (primary), by 8%. These and other data on mineral production are in table 1.

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

## Mineral Trade

In 2017, the value of Bulgaria's exports was about \$29.98 billion compared with about \$26.1 billion in 2016. Among exported goods, mineral fuels, lubricants, and related materials contributed 8.0% to the value of exports, and crude materials (excluding fuels) accounted for 6.3%. The country's major export trade partners were, in descending order of export value, Germany (which received 20.4% of Bulgaria's total exports), Italy (12.5%), Greece (9.7%), Belgium (6.3%), and France (6.2%). The value of Bulgaria's imports was \$33.9 billion compared with \$28.9 billion in 2016. Mineral fuels, lubricants, and related materials accounted for 14.2% of total imports, and crude materials (excluding fuels) accounted for 9.0%. Bulgaria's major import trade partners were, in descending order of import value, Germany (which supplied 19.2% of Bulgaria's total imports), Italy (11.3%), Spain (8.2%), and Greece (6.9%) (National Statistical Institute, 2017, p. 32–33; 2018a, p. 32–33).

## Commodity Review

### Metals

**Copper, Gold, and Silver.**—Dundee Precious Metals Inc. of Canada owned and operated the Chelopech underground copper mine, which was located about 70 kilometers (km) east of Sofia, through its 100%-owned subsidiary Chelopech Mining EAD. In 2017, Chelopech Mining produced 2.2 million metric tons (Mt) of copper ore, 4,412 kilograms (kg) of gold, and 16,277 metric tons (t) of copper contained in copper concentrate. Chelopech Mining produced 1,792 kg of gold from 242,660 t of gold-bearing pyrite concentrate (Dundee Precious Metals Inc., 2018b, p. 17).

In 2017, Dundee continued to develop its wholly owned Krumovgrad open pit gold project. The project was located at Ada Tepa, which is about 3 km south of the town of Krumovgrad in southeastern Bulgaria. As of the end of 2015 (the latest year for which detailed data were available), the proven and probable reserves of the two zones in the Krumovgrad deposit were estimated to be 25,100 kg of gold and 13,800 kg of silver. The total cost of mine construction was estimated to be \$164 million. Dundee expected to produce about 2,670 kilograms per year (kg/yr) of gold and 1,200 kg/yr of silver for at least 8 years. Production of the first concentrate was expected to start in the fourth quarter of 2018 (Mineral.ru, 2014; Dundee Precious Metals Inc., 2018a, p. 10–12; 2018b, p. 2, 41).

In 2017, Velocity Minerals Ltd. was in negotiation with Gorbuso-Kardzhali A.D. to acquire a 70% interest in the Rozino gold project and a 50% interest in the Ekuzya property. The Rozino gold project is located within the Tintyava property. As of September 2018, the inferred resource, at a cutoff grade of 0.2 gram per metric ton (g/t) gold, was estimated to be 50 Mt at a grade of 0.59 g/t gold containing 29,000 kg of gold. The Ekuzya property is located within the Chala mining concession. Velocity Minerals's acquisition of the interests for the Rozino and Ekuzya properties was completed in 2018 (CSA Global Mining Industry Consulting, 2018, p. 24; International Mining, 2018; Velocity Minerals Ltd., 2018, p. 4, 6).

## MINERAL INDUSTRY HIGHLIGHTS IN 2018

In 2018, Bulgaria's real GDP increased by 3.1% compared with an increase of 3.6% in 2017; the nominal GDP was \$66.2 billion. The value of mining sector production accounted for about 3.6% of the total value of production of the industrial sector. The value of manufacturing sector production accounted for about 84.5% of the total value of production of all industrial enterprises compared with 83.6% in 2017. Within the manufacturing sector, the value of basic metal and fabricated metal products (except machinery and equipment) output in 2018 accounted for about 19.0% of the total value of industrial sector output. The value of mining sector production (at constant 2010 prices) decreased by 1.9% compared with an increase of 1.1% in 2017. The value of manufacturing sector production (at constant 2010 prices) increased by 6.9% following an increase of 7.7% in 2017 (National Statistical Institute, 2019, p. 123, 129, 189, 191).

In 2018, production of mined manganese (crude ore, Mn content) increased by 93%; stone (other, size and shape unspecified, including granite, sandstone, and other building material), by 87%; mined lead (Pb content), by 26%; iron and steel products (rolled, flat), by 21%; limestone flux for cement production, by 14%; mined gypsum (including anhydrite), by 12% (estimated); hydraulic cement, by 10%; and sand, by 6%. Natural gas (marketable) production decreased by 85%; nitrogen (ammonia, N content), by 25% (estimated); refined tellurium, by 23%; mined silver (Ag content), by 22%; chalk (including dolomite), by 16%; bentonite, by 15%; lignite coal, by 13%; refined cadmium and primary smelter copper, by 6% each; and sulfur (sulfuric acid), by 5%. These and other data on mineral production are in table 1.

In 2018, Dundee continued to develop the Krumovgrad open pit gold project. The project was 92% completed (Dundee Precious Metals Inc., 2019, p. 2–4, 42).

Mundoro Capital Inc. of Canada held two exploration licenses for two copper, gold, and silver properties—Zvezda and Byalo—located in the Rhodopes region. In 2018, Mundoro continued exploration of both properties. The company received a 2-year extension of the exploration license for the Zvezda property (Mundoro Capital Inc., 2019, p. 6, 8).

In May 2018, Mundoro Capital entered into an optional agreement with a private, unidentified company to which Mundoro granted an option on the Saje project. The Saje lead-zinc project is located within the Zvezda licensed area. In 2018, the private company conducted drilling at the Saje

properties but did not exercise its option; thus, Mundoro maintained 100% ownership of the Zvezda license (Mundoro Capital Inc., 2019, p. 6, 7).

In September 2018, Velocity Minerals Ltd. completed a preliminary economic assessment and acquisition of a 70% interest in the Rozino project. The initial capacity of the Rozino project was expected to be 2,000 kg/yr of gold, and the capacity was projected to increase to 2,400 kg/yr of gold in the future (Velocity Minerals Ltd., 2019).

## Outlook

The increase in Bulgaria's production of mineral commodities was moderate in 2017 and 2018. Future increases most likely will depend mainly on the domestic and European economic outlooks. Owing to new projects, the mining of gold and silver is likely to increase modestly in the near future.

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TABLE 1  
BULGARIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>	2014	2015	2016	2017	2018	
<b>METALS</b>						
Aluminum, metal, secondary	7,537	8,620	8,050 <sup>r</sup>	7,150	7,112	
Bismuth, refinery, metal <sup>e</sup>	50 <sup>r</sup>	42 <sup>r</sup>	47 <sup>r</sup>	50	50	
Cadmium, refinery, primary	382	344 <sup>r</sup>	362	333	313	
<b>Copper:</b>						
Mine, concentrates, Cu content	72,419	71,748	70,573	73,003	69,841	
<b>Smelter:</b>						
Primary	318,700 <sup>r</sup>	292,200 <sup>r</sup>	245,000 <sup>r</sup>	322,700	304,900	
Secondary	62,300 <sup>r</sup>	56,200 <sup>r</sup>	51,800 <sup>r</sup>	52,500	53,800	
<b>Refinery, electrolytic:</b>						
Primary	208,300 <sup>r</sup>	204,700 <sup>r</sup>	197,200 <sup>r</sup>	203,500	199,400	
Secondary	25,000	25,000	19,200 <sup>r</sup>	25,000	24,700	
Gold, mine, concentrate, Au content	kilograms	7,889	7,914	7,918 <sup>r</sup>	9,449	9,544
<b>Iron and steel, steel:</b>						
Raw steel	thousand metric tons	612	543	493	652	666
Products, rolled, flat	do.	935 <sup>r</sup>	840 <sup>r</sup>	921 <sup>r</sup>	993	1,205
<b>Lead:</b>						
Mine, Pb content		15,461	18,700 <sup>r</sup>	23,600 <sup>r</sup>	21,100	26,500
Refinery, primary and secondary		93,394	96,900	100,817	103,105	102,808
<b>Manganese, mine, crude ore:<sup>3</sup></b>						
Gross weight		69,700 <sup>r</sup>	190,900 <sup>r</sup>	67,000	33,000	62,100
Mn content		19,500 <sup>r</sup>	53,400 <sup>r</sup>	19,000	9,000	17,400
Silver, mine, Ag content	kilograms	50,200	37,955	52,526	53,053	41,315
Tellurium, refinery	do.	4,932	4,046	4,479	5,095	3,931
<b>Zinc:</b>						
Mine, Zn content		11,900 <sup>r</sup>	16,300 <sup>r</sup>	19,200 <sup>r</sup>	20,600	21,700
Smelter, primary		76,293	75,095	75,811	73,715	75,150

See footnotes at end of table.

TABLE 1—Continued  
BULGARIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>		2014	2015	2016	2017	2018
<b>INDUSTRIAL MINERALS</b>						
Barite <sup>3,4</sup>		19,000 <sup>r</sup>	59,000 <sup>r</sup>	50,000	67,000	70,000
Cement, hydraulic	thousand metric tons	1,785	2,114	1,994	2,117	2,331
Clay: <sup>c</sup>						
Bentonite	do.	36 <sup>r</sup>	41 <sup>r</sup>	43 <sup>r</sup>	52	44
Kaolin	do.	320 <sup>r</sup>	210 <sup>r</sup>	190 <sup>r</sup>	220	230
Fluorspar <sup>3,4</sup>	do.	20	20	20	--	--
Gypsum, mine, including anhydrite	do.	88	99	41	41	46 <sup>c</sup>
Lime, industrial	do.	1,482	1,474	1,518 <sup>r</sup>	1,503	1,545
Nitrogen, ammonia, N content	do.	313	390 <sup>r</sup>	410 <sup>r,c</sup>	400 <sup>c</sup>	300 <sup>c</sup>
Sand and gravel, industrial:						
Quartz	do.	680 <sup>c</sup>	947	947 <sup>r</sup>	947 <sup>c</sup>	947 <sup>c</sup>
Sand	do.	NA	7,640	6,289	6,300 <sup>c</sup>	6,660
Stone, sand, and gravel, construction:						
Sand and gravel, unspecified	do.	6,600	3,833	3,833 <sup>r</sup>	6,091	6,100 <sup>c</sup>
Stone:						
Crushed:						
Chalk, including dolomite	do.	149 <sup>r</sup>	149 <sup>r</sup>	74 <sup>r</sup>	236	199
Limestone, flux for cement production	do.	5,580	7,000 <sup>r</sup>	5,286	5,175	5,883
Other, size and shape unspecified, including granite, sandstone, and other building material	do.	2,570	4,118 <sup>r</sup>	1,874 <sup>r</sup>	1,604	3,007
Sulfur, compounds, sulfuric acid, S content	do.	1,309	1,341	1,210	1,532	1,450
Vermiculite, concentrate		10,000 <sup>r,c</sup>	10,000 <sup>r,c</sup>	10,000 <sup>c</sup>	10,000 <sup>c</sup>	10,500
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Coal:						
Bituminous, marketable	thousand metric tons	2,200	2,066	--	--	--
Lignite	do.	31,300	35,863	31,229	34,412	30,000
Natural gas, marketable	million cubic meters	183	82	94	74	11
Petroleum:						
Crude <sup>c</sup>	thousand 42-gallon barrels	193 <sup>r</sup>	186 <sup>r</sup>	179 <sup>r</sup>	178	178
Refinery	do.	36,400	29,000 <sup>r</sup>	42,350 <sup>r</sup>	42,350	41,300

<sup>c</sup>Estimated. <sup>r</sup>Revised. do. Ditto. NA Not available. -- Zero.

<sup>1</sup>Table includes data available through November 5, 2019. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

<sup>2</sup>In addition to the commodities listed, feldspar, perlite, refractory clays, salt (all types), soda ash, tin, and zeolites may have been produced, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Reported by the International Manganese Institute.

<sup>4</sup>Estimated based on trade data.

TABLE 2  
BULGARIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>	
Aluminum, secondary	Alcomet JSC	NA	NA.	
Do.	ETEM Bulgaria JSC	NA	35.	
Cadmium	KCM A.D. (KCM 2000 Group)	Smelter at Plovdiv	NA.	
Do.	Lead and Zinc Complex Plc. (LZC) (Harmony 2012 Ltd., 50%)	Metallurgical plant at Kardzhali <sup>1</sup>	NA.	
Cement	Devnya Cement AD (Italcementi Group)	Plant at Devnya	2,000.	
Do.	LafargeHolcim (Bulgaria) AD (LafargeHolcim Ltd., 100%)	Plant at Beli Izvor	1,700.	
Do.	Vulkan Cement S.A. (Italcementi Group)	Grinding center at Dimitrovgrad	500.	
Do.	Zlatna Panega Cement AD (Titan Group)	Plant at Zlatna Panega	1,500.	
Clay:				
Bentonite, mine	Imerys S.A.	Kardzhali	50.	
Kaolin:				
Mine	Kaolin A.D.	Quarries at Kaolinovo Municipality, Shume District	NA.	
Processing plant	do.	Processing plant at Kaolinovo Municipality, Shume District and at Senovo, Ruse District	NA.	
Coal:				
Bituminous	Balkan 2000 Mines EAD	Southeast of Tvarditsa, Sliven District	400.	
Lignite	Mini Maritsa Iztok EAD (state-owned Bulgarian Energy Holding EAD)	East Maritsa coal basin near Radnevo	35,000.	
Do.	Other small producers	Beli Breg, Chernomore Mine in the Black Sea coalfield, Chukurovo, and Stanyantsi Mines and Vitren Mine in Katrishte deposit	NA.	
Do.	Otkrit Vagledobiv Mines EAD	Pernik coal basin, southwest of Sofia	NA.	
Do.	Vagledobiv Bobov Dol EOOD	Bobov Dol coalfield	NA.	
Copper:				
Concentrate, Cu content	Assarel-Medet JSC	Assarel Mine, Panagurishte, Pazardzhik District	50.	
Do.	NA	Propada Mine at Malko Turnovo	2.	
Do.	Burgaskii Mines Ltd.	Zidorovo Mine at Burgas, near the Black Sea	1.	
Do.	Chelopech Mining EAD (Dundee Precious Metals Inc., 100%)	Chelopech Mine	21.	
Do.	Ellatzite-Med AD (Geotechmin Co.)	Mine 8 kilometers south of Etropole, and concentrator near Mirkovo village	45.	
Metal:				
Smelter	Aurubis Bulgaria AD (Aurubis AG, 99.8%)	Pirdop, Srednogie region <sup>2</sup>	400.	
Refinery	do.	do.	230.	
Fluorspar	Chiprovtsi Mine (Solvay S.A.)	Chiprovtsi Mine, Montana Province <sup>2</sup>	50.	
Gold, in concentrate	Chelopech Mining EAD (Dundee Precious Metals Inc., 100%)	Chelopech Mine	6,000.	
Do.	do.	Ellatzite-Med AD (Geotechmin Co.)	Mine 8 kilometers south of Etropole and concentrator near Mirkovo village	NA.
Do.	do.	KCM A.D. (KCM 2000 Group)	Plovdiv city	NA.
Iron and steel, steel:				
Raw steel	Stomana Industry S.A. (Sidenor S.A., 100%)	Pernik	800.	
Manufactured products	Helios Metallurg Ltd.	Plovdiv	140.	
Do.	PIH Industry JSC	Eastern part of the city of Ruse	NA.	
Do.	Promet Steel JSC	Rolling mills, Delbet, Sredets, Burgas region	700.	
Do.	Stomana Industry S.A. (Sidenor S.A., 100%)	NA	1,000.	

See footnotes at end of table.

TABLE 2—Continued  
BULGARIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2018

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>
<b>Lead-zinc:</b>				
Concentrate, Pb-Zn content	metric tons	Gorubso AD (KCM 2000 Group and and Minstroy Holding A.D.)	Metallurgical plant at Kardzhali	5,700 Pb, 5,500 Zn.
Do.	do.	Rudmetal JSC	Dimov Dol Mine, near Rudozem	2,900 Pb, 1,900 Zn.
<b>Metal:</b>				
<b>Lead, refined:</b>				
Primary		KCM A.D. (KCM 2000 Group)	Plovdiv	70.
Do.		Lead and Zinc Complex Plc. (LZC) (Harmony 2012 Ltd., 50%)	Kardzhali <sup>1</sup>	33.
Secondary		Elbat JSC	Refinery at Dolna Banya	10.
Do.		Monbat Recycling Plc.	Recycling plant, Town of Montana	16.
Zinc, smelter		KCM A.D. (KCM 2000 Group)	Smelter at Plovdiv	80.
Do.		Lead and Zinc Complex Plc. (LZC) (Harmony 2012 Ltd., 50%)	Kardzhali <sup>1</sup>	28.
Manganese, ore		Obrochishte Mine (Euromangan AD)	Mine at Tsarkva village, 10 kilometers west of Balchik	200.
Natural gas	million cubic meters	Melrose Resources Bulgaria EOOD (Petroceltic International Plc.)	Galata, Kaliakra, and Kavarna fields, in the Black Sea off the coast of Varna	NA.
Do.	do.	Oil and Gas Exploration and Production Plc.	Bhutan, Bulgarevo, Dolni Dubnik, Durankulak, Marionov Geran, Selanovtzi, and Staroseltzi fields <sup>3</sup>	NA.
Perlite, mine output		Imerys S.A.	Kardzhali	NA.
<b>Petroleum:</b>				
Crude	thousand 42-gallon barrels	Oil and Gas Exploration and Production Plc.	Bardarski Geran, Dolni Dubnik, Dolni Lukovit, Gorni Dubnik, Tjuleno, Selanovtzi, Staroseltzi, and other oilfields	200.
Refined	do.	LUKOIL Neftochim Burgas AD (LUKOIL Oil Co.)	Refinery at Burgas	70,000.
<b>Silver:</b>				
In concentrate	kilograms	Chelopech Mining EAD (Dundee Precious Metals Inc., 100%)	Chelopech Mine	18,000.
Metal	do.	KCM A.D. (KCM 2000 Group)	Smelter plant at Plovdiv	55,000.
Sulfuric acid		Aurubis Bulgaria AD (Aurubis AG, 99.8%)	Plant at Pirdop, Srednogorie region	1,200.
Vermiculite, crude		Wolff and Muller Minerals Bulgaria OOD	Mine near Sofia	20.
Zeolites, mine output		Imerys S.A.	Mine at Kardzhali	NA.

<sup>c</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>Suspended since 2012; no information was available for 2018.

<sup>2</sup>Suspended since 2016; no information was available for 2018.

<sup>3</sup>Stopped production in 2015; no updated information was available for 2018.