



2011 Minerals Yearbook

BULGARIA

THE MINERAL INDUSTRY OF BULGARIA

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Bulgaria's mineral industry included mine output of metal ores, mineral fuels (mainly coal), and a variety of industrial minerals. Additionally, the metallurgical sector smelted and refined copper, lead, silver, steel, and zinc. On a world scale, however, Bulgaria's mineral industry was small and mainly of regional importance. Bulgaria had the potential to become a relatively significant natural gas transit country because the planned South Stream and Nabucco pipelines were to pass through the country.

Minerals in the National Economy

In 2011, Bulgaria's gross domestic product (GDP) increased by 1.7% compared with that of 2010. The value added of industrial sector production increased by 9.1% and made up about 27% of the total GDP. In 2010 (the latest year for which data were available), the value added of mining and quarrying activities was about \$1.14 billion and accounted for about 9% of the value added of the industrial sector and 2% of the GDP. In 2011, about 24,900 people were employed in the mining and quarrying industry (National Statistical Institute of the Republic of Bulgaria, 2012a–c).

Production

Natural gas production increased by 486% as the Kaliakra and the Kavarna fields were in operation for the first full year; coal output increased by 27%; and crude steel and manganese ore, by 13% each. The significant increase in coal production was mainly owing to increased lignite output from Mini Maritsa Iztok EAD to supply the thermal powerplant AES Galabovo that opened in June. Production of barite decreased by an estimated 66%; zinc mine output, by 23%; and refined lead, by 12% (table 1; Novinite.com, 2011b; Melrose Resources Plc., 2012, p. 4, 12).

Structure of the Mineral Industry

In 2010 (the latest year for which data were available), there were 403 registered mining and quarrying enterprises in Bulgaria. Of these, 269 enterprises had no more than 9 employees; 90 enterprises had 10 to 49 employees; 26 enterprises had 50 to 249 employees; and 18 enterprises had more than 250 employees. The 18 enterprises that had 250 or more employees accounted for 78% of the 24,788 workers employed in mining and quarrying and 80% of the total \$1.4 billion¹ of revenue earned by all mining and quarrying enterprises (National Statistical Institute of the Republic of Bulgaria, 2012c, p. 282–285). Table 2 is a list of major mineral industry facilities.

¹Where necessary, values have been converted from Bulgarian Levs (BGN) to U.S. dollars (US\$) at an annual average exchange rate of BGN1.48=US\$1.00 for 2010 and BGN1.40=US\$1.00 for 2011.

Commodity Review

Metals

Copper.—Aurubis AG of Germany owned Bulgaria's only copper smelting and refining facility and produced 226,500 metric tons (t) of refined copper in 2011. In June, Aurubis announced an investment program valued at \$32 million² and focused on environmental and productivity improvements. The main component of the plan was the construction of a gas treatment plant with the goal of limiting the output of sulfur dioxide and other gases to help ensure that Aurubis Bulgaria AG would be in compliance with future EU regulations. In 2008, a new refinery was installed at Aurubis Bulgaria, and the plant's cathode copper production capacity increased to more than 200,000 metric tons per year (t/yr) from 70,000 t/yr (Aurubis AG, 2009, p. 66; 2011).

Gold.—Dundee Precious Metals Inc. of Canada was Bulgaria's leading producer of mined gold, and in 2011, its Chelopech Mine produced 93,881 troy ounces [2,920 kilograms (kg)] of gold in concentrate. The mine's output was scheduled to nearly double by July 2012 when an expansion project was expected to be completed. The gold concentrate produced at Chelopech was exported to be processed at Dundee's smelter in Tsumeb, Namibia. Dundee also received final approval of its environmental impact assessment for the Krumovgrad gold project from the Ministry of Environment and Water (MoEW). Dundee hoped to begin production in 2014, with projected average annual output of 74,000 troy ounces (2,300 kg) of gold and 35,000 troy ounces (1,100 kg) of silver for 9 years. Cambridge Mineral Resources plc. of the United Kingdom and Euromax Resources Ltd. of Canada operated exploration projects in Bulgaria (Dundee Precious Metals Inc., 2012a, p. 4, 6; 2012b).

Iron and Steel.—On April 12, it was announced that Kremikovtzi A.D., which formerly was Bulgaria's leading steel plant, was sold for \$226 million to Eltrade Company EOOD, which was established 1 month before it purchased the steel plant. Kremikovtzi stopped production in late 2008 and was declared bankrupt in 2010. The new owner of Kremikovtzi did not announce its future plans for the plant, and it was not clear if production would be restarted or if the plant would be shut down permanently (Novinite.com, 2011c).

Lead and Zinc.—Production of refined lead decreased significantly in 2011 after the MoEW ordered Lead and Zinc Complex Plc. (LZC) to stop refined lead production in April after the plant exceeded pollution emission limits that had been set by the MoEW. The closure was expected to be temporary, and Intertrust Holdings AD (the main shareholder of LZC) hoped to obtain \$70 million to invest in its lead production facilities to reduce pollution emissions and to double production

²Where necessary, values have been converted from euro area euros (€) to U.S. dollars (US\$) at an annual average exchange rate of €0.72=US\$1.00.

capacity to 60,000 t/yr. Zinc production at LZC continued until December when output was stopped so that the plant could make planned repairs. Output of lead and zinc had not resumed by the end of the year. KCM S.A., which was Bulgaria's only other producer of lead and zinc metal, reported output of 65,725 t of refined lead and 73,319 t of refined zinc (Konstantinova, 2011; Novinite.com, 2011a; KCM 2000 Group, 2012, p. 20).

Industrial Minerals

Cement.—In 2011, the level of domestic cement consumption was similar to that of 2010 as high interest rates held down construction activity, and cement production was estimated to have stabilized after significant decreases in 2009 and 2010. Holcim Bulgaria AD closed its plant in Pleven in 2011. The plant's small size, the reduced demand for cement owing to difficult economic conditions, and competition from imports from Turkey were factors in the decision to close the plant. The company's plant at Beli Izvor remained open and had a production capacity of 1.7 million metric tons per year (SeeNews, 2010; Cembureau, 2012, p. 7; Holcim Bulgaria AD, 2012).

Fluorspar.—In February, Solvay International Chemical Group of Belgium acquired the fluorspar mine at Chiprovtsi from the N&N Group of Italy and produced a small amount of fluorspar during the year. Solvay planned eventually to produce about 50,000 t/yr of acid-grade fluorspar (Solvay International Chemical Group, 2011).

Mineral Fuels

Natural Gas.—Bulgaria was a minor producer of natural gas and depended on imports from OAO Gazprom of Russia to satisfy domestic demand. In 2011, Bulgaria produced 434 million cubic meters of natural gas and imported 2.81 billion cubic meters. On January 31, 2009, Melrose Resources S.a.r.l. stopped production at its Galata field in the Black Sea, which had been the only source of natural gas production in Bulgaria. Melrose started production at the Kaliakra and the Kavarna fields in the Black Sea in November 2010, and natural gas production in 2011 increased by 486% because it was the first full year of production at the new fields. The proved and probable reserves at the Kaliakra and Kavarna fields were estimated by Melrose to be 33 billion cubic feet (934 million cubic meters) and 27 billion cubic feet (765 million cubic meters), respectively (Melrose Resources Plc., 2011, p. 4–5; 2012, p. 4, 12; Gazprom Export LLC., 2012).

Bulgaria was a participant in the South Stream and the Nabucco pipeline projects, which were competing plans to begin alternate routes to deliver natural gas to Europe. The South Stream pipeline was designed by Gazprom to increase its transport options for delivering natural gas to Europe. In 2011, Gazprom and Bulgarian Energy Holding EAD selected a contractor to conduct a feasibility study for the construction of the section of the South Stream pipeline that would run through Bulgaria. Bulgarian Energy Holding was a shareholder in Nabucco Gas Pipeline International GmbH, which was

established to implement the Nabucco pipeline project, but the pipeline was still in the planning stages (OAO Gazprom, 2011; Nabucco Gas Pipeline International GmbH, 2012).

Outlook

Improvements in the economic situation in Europe and renewed trade led to a slow recovery of the Bulgarian economy in 2011; however, construction activity in Bulgaria remained depressed. Increased demand for and production of Bulgaria's mineral commodities will depend mainly on the domestic and European economic outlook, but production is likely to remain modest in terms of world output.

References Cited

- Aurubis AG, 2009, Annual report 2008/2009: Aurubis AG, 177 p. (Accessed August 23, 2012, at http://www.aurubis.com/fileadmin/media/documents/en/Geschaeftsberichte_Quartalsberichte/AR_Aurubis_08_09.pdf.)
- Aurubis AG, 2011, Aurubis Bulgaria 2014—New investment programme worth € 44.2 million launched: Aurubis AG, June 21. (Accessed August 23, 2012, at <http://www.aurubis.com/en/public-relations/press-releases-news/aurubis-bulgaria-2014-new-investment-programme-worth-eur-442-million-launched/>.)
- Cembureau, 2012, Activity report 2011: Cembureau, June, 48 p. (Accessed August 17, 2012, at <http://www.cembureau.be/sites/default/files/AR2011.pdf>.)
- Dundee Precious Metals Inc., 2012a, Annual review 2011: Dundee Precious Metals, April, 117 p. (Accessed August 15, 2012, at http://www.dundeeprecious.com/Theme/Dundee/files/annual_report/Dundee_AR_2011_Final_Website_v001_d27nw5.pdf.)
- Dundee Precious Metals Inc., 2012b, Mining and processing: Dundee Precious Metals Inc. (Accessed August 21, 2012, at <http://www.dundeeprecious.com/English/operations/producing-mines/Chelovech/mining-and-processing/default.aspx>.)
- Gazprom Export LLC., 2012, Delivery statistics: Gazprom Export LLC. (Accessed August 23, 2012, at <http://www.gazpromexport.com/en/statistics/>.)
- Holcim Bulgaria AD, 2012, History: Holcim Bulgaria AD. (Accessed August 17, 2012, at <http://www.holcim.bg/en/about-us/corporate-profile/history-of-the-company.html>.)
- KCM 2000 Group, 2012, Annual report 2011: KCM 2000 Group, July, 60 p. (Accessed August 23, 2012, at http://kcm2000.bg/files/p/27/kcm_annual_2011_eng.pdf.)
- Konstantinova, Elizabeth, 2011, Bulgarian lead smelter ordered to close because of pollution: Bloomberg L.P., April 18. (Accessed March 23, 2012, at <http://www.bloomberg.com/news/2011-04-18/bulgarian-lead-smelter-ordered-to-close-because-of-pollution-1-.html>.)
- Melrose Resources Plc., 2011, Annual report and accounts 2010: Edinburg, Scotland, Melrose Resources Plc., May, 80 p.
- Melrose Resources Plc., 2012, Annual report and accounts 2011: Edinburg, Scotland, Melrose Resources Plc., May, 78 p.
- Nabucco Gas Pipeline International GmbH, 2012, Shareholders: Nabucco Gas Pipeline International GmbH. (Accessed August 23, 2012, at http://www.nabucco-pipeline.com/portal/page/portal/en/company_main/shareholders_link.)
- National Statistical Institute of the Republic of Bulgaria, 2012a, Employees under labour contract by economic activity groupings and sector in 2011: National Statistical Institute of the Republic of Bulgaria. (Accessed August 5, 2012, at <http://www.nsi.bg/otrasalen.php?otr=51&a1=2020&a2=2021&a3=2022#cont>.)
- National Statistical Institute of the Republic of Bulgaria, 2012b, GDP by production approach—Total of economy: National Statistical Institute of the Republic of Bulgaria. (Accessed August 15, 2012, at <http://www.nsi.bg/otrasalen.php?otr=42&a1=2191&a2=2192&a3=2193#cont>.)
- National Statistical Institute of the Republic of Bulgaria, 2012c, Statistical yearbook 2011: National Statistical Institute of the Republic of Bulgaria, May, 673 p. (Accessed August 22, 2012, at <http://www.nsi.bg/otrasal-publikaciaen.php?n=322&otr=46>.)
- Novinite.com, 2011a, Bulgaria's major lead, zinc smelter might end up shut down—Unionist: Novinite.com, December 7. (Accessed March 23, 2012, at http://www.novinite.com/view_news.php?id=134642.)

Novinite.com, 2011b, Bulgarian mines break coal production record in January–August 2011: Novinite.com, September 8. (Accessed August 23, 2012, at http://www.novinite.com/view_news.php?id=131904.)

Novinite.com, 2011c, Bulgarian steel behemoth Kremikovtzi's assets bought by Eltrade: Novinite.com, April 12. (Accessed August 16, 2012, at http://www.novinite.com/view_news.php?id=127234.)

OAO Gazprom, 2011, Gazprom and Bulgarian Energy Holding select contractor to perform feasibility study for Bulgarian section of South Stream: OAO Gazprom, February 8. (Accessed August 23, 2012, at <http://www.gazprom.com/press/news/2011/february/article108814/>.)

SeeNews, 2010, Holcim Bulgaria to close cement plant by end-2011: SeeNews, August 31. (Accessed August 17, 2012, at <http://wire.seenews.com/news/holcim-bulgaria-to-close-cement-plant-by-end-2011-201432>.)

Solvay International Chemical Group, 2011, Solvay acquires a Bulgarian fluorspar mine: Solvay International Chemical Group press release, February 22. (Accessed April 3, 2012, at http://www.solvay.com/EN/NewsPress/20110222_Bulgarianfluorsparmine.aspx.)

TABLE 1
BULGARIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2007	2008	2009	2010	2011
METALS					
Aluminum, metal, secondary	17,330	12,607	4,137 ^r	12,076 ^r	12,000 ^e
Cadmium, metal, smelter ^c	459 ³	460	420	420	420
Copper:					
Ore:					
Gross weight thousand metric tons	26,853 ^r	27,223 ^r	26,936	27,525 ^r	28,213
Cu content ^c do.	105 ^r	109	110	107 ^r	110
Concentrate, Cu content do.	110	105	105	105	105
Metal, primary and secondary:					
Smelter	229,100	278,200	276,200	284,600 ^r	288,000
Refined, electrolytically	69,900	126,700	196,900	215,100	226,500
Gold, in concentrate kilograms	3,964	4,160	4,482 ^r	4,400 ^e	4,400 ^e
Iron and steel, metal:					
Pig iron for steelmaking thousand metric tons	1,069	441	--	--	--
Ferroalloys ^c do.	10	6 ³	3 ^{r,3}	--	--
Steel, crude do.	1,909	1,330	726	740	834
Semimanufactures ^c do.	1,400	1,287 ³	709 ^{r,3}	720 ^r	720
Lead:					
Mine output, Pb content	15,000	15,000	12,000	12,000	12,000
Concentrate:					
Gross weight	23,395	18,503	17,774 ^r	18,000 ^{r,e}	18,000 ^e
Pb content	16,377	12,950	12,400 ^r	12,000 ^{r,e}	12,000 ^e
Metal, refined, primary and secondary	86,956	90,878	83,104 ^r	81,000 ^e	71,000 ^e
Manganese ore: ⁴					
Gross weight	80,000 ^r	64,600 ^r	28,500 ^r	131,600 ^r	148,600
Mn content	22,400 ^r	18,100 ^r	8,000 ^r	36,900 ^r	41,600
Silver, metal ^c kilograms	55,000	55,000	55,000	55,000	55,000
Tin, metal, secondary ^{e,5}	2	2	1	1	1
Zinc:					
Mine output, Zn content	14,000 ^r	13,000 ^r	9,000 ^r	13,000 ^r	10,000
Concentrate:					
Gross weight	23,474	20,343	14,597 ^r	14,600 ^{r,e}	14,600 ^e
Zn content ^c	12,200	10,600	7,600 ^r	7,600 ^r	7,600
Metal, refined, primary and secondary	99,992	99,699 ^r	92,676 ^r	88,253 ^r	93,000 ^e
INDUSTRIAL MINERALS					
Barite ore, run-of-mine ^c	50,900	40,000	14,300	350 ^r	120
Cement, hydraulic thousand metric tons	4,413	4,903	2,662 ^r	1,966 ^r	1,900 ^e
Clays:					
Bentonite do.	99	178	108	100 ^e	100 ^e
Kaolin, raw do.	1,631	1,530	939	900 ^e	900 ^e
Refractory ^c do.	15	15	15	15	15
Feldspar ^c do.	90	90	80	80	80

See footnotes at end of table.

TABLE 1—Continued
BULGARIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2007	2008	2009	2010	2011	
INDUSTRIAL MINERALS—Continued						
Fluorspar ^c	--	-- ^r	--	--	4,500	
Gypsum and anhydrite, cude ^c	thousand metric tons	234 ³	210	128 ³	130	130
Lime, industrial	do.	1,443	1,422	950 ^r	1,309 ^r	1,300
Limestone and dolomite ^c	do.	3,335 ³	3,340	3,100	3,100	3,100
Nitrogen, N content of ammonia ^c	do.	350	350	320	320	320
Perlite	do.	14	7	15	15 ^e	15 ^e
Salt, all types	do.	2,000	2,100	1,300	1,300 ^e	1,300 ^e
Sand and gravel	thousand cubic meters	4,925	5,517	2,996	3,000 ^e	3,000 ^e
Silica, quartz sand	thousand metric tons	551	734	657	660 ^e	660 ^e
Sodium carbonate, calcined ^c	do.	800	800	800	800	800
Sulfur: ^c						
S content of pyrites		25,000	25,000	25,000	25,000	25,000
Byproduct		300,000	300,000	300,000	300,000	300,000
Total		325,000	325,000	325,000	325,000	325,000
Sulfuric acid ^c		1,010,000	1,010,000	1,000,000	1,000,000	1,000,000
Zeolite ^c		15,000	15,000	15,000	15,000	15,000
MINERAL FUELS AND RELATED MATERIALS						
Coal, marketable:						
Bituminous	thousand metric tons	18	19	23	26 ^{r,e}	20 ^e
Brown	do.	2,834	2,643	2,244	2,200 ^e	2,200 ^e
Lignite	do.	25,325	26,008	25,015 ^r	27,000 ^{r,e}	34,900 ^e
Total	do.	28,177	28,670	27,282 ^r	29,300 ^{r,e}	37,100 ^e
Coke	do.	525	337	--	--	--
Natural gas, marketed	million cubic meters	295	218	17 ^r	74 ^r	434
Petroleum: ⁶						
Crude	thousand 42-gallon barrels	176	169	176	169 ^r	170 ^e
Refinery products ^c	do.	54,400	54,500	50,000	45,000 ^r	45,000

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

¹Table includes data available through October 23, 2012.

²In addition to the mineral commodities listed, a variety of metals and industrial minerals may have been produced, but available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Reported by the International Manganese Institute.

⁵Estimates of tin production were based on imports of tin waste and scrap as reported by the UN Comtrade database.

⁶Figures were converted to barrels from production reported in thousand metric tons, which was reported as the following: Crude production: 2007—24; 2008—23; 2009—24; 2010—23 (revised); and 2011—23 (stimated). Petroleum products: 2007—6,806; 2008—6,812; 2009—6,255; 2010—5,417 (revised); and 2011—5,615.

TABLE 2
BULGARIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bentonite, mine output		Bentonit JSC (S&B Industrial Minerals AD)	Kardzhali	NA.
Cadmium		KCM S.A.	Plovdiv	NA.
Do.		Lead and Zinc Complex Plc. (LZC) (Intertrust Holdings AD, 90%)	Kardzhali	NA.
Cement		Devnya Cement (Italcementi Group)	Devnya	2,000.
Do.		Vulkan Cement (Italcementi Group)	Dimitrovgrad	500.
Do.		Holcim Bulgaria AD (Holcim Ltd.)	Beli Izvor	1,700.
Do.		Zlatna Panega Cement AD (Titan Group)	Zlatna Panega	1,500.
Coal:				
Bituminous		Mina Balkan 2000 EAD	Central Bulgaria	NA.
Brown		Otkrit Vagledobiv Mines EAD	Pernik coal basin, southwest of Sofia	NA.
Do.		Vagledobiv Bobov Dol EOOD	Bobov Dol coalfield	NA.
Do.		Other small producers	Eastern and western Bulgaria	NA.
Lignite		Mini Maritsa Iztok EAD (state owned)	East Maritsa coal basin near Radnevo	NA.
Do.		Other small producers	Sofia, Pernik, and Bobov Dol coal basins	NA.
Coke		Kremikovtzi A.D.	About 10 kilometers northeast of Sofia	NA. ¹
Copper:				
Concentrate, Cu content		Assarel-Medet JSC	Panagurishte, Pazardzhik District	50.
Do.		Ellatzite-Med AD	Mine 8 kilometers south of Etropole, concentrator near Mirkovo village	45.
Do.		Dundee Precious Metals Inc.	Chelopech	17.
Do.		Bradtze	Malko Turnovo	2.
Do.		Burgaskii Mines Ltd.	Zidorovo Mine at Burgas, near the Black Sea	1.
Metal:				
Smelter		Aurubis Bulgaria AD (Aurubis AG)	Pirdop	275.
Refinery		do.	do.	230. ^e
Fluorspar		Chiprovtsi Mine (Solvay S.A.)	Chiprovtsi, Montana Province	NA.
Gold, in concentrate	kilograms	Dundee Precious Metals Inc.	Chelopech	3,000. ^e
Do.	do.	Ellatzite-Med AD	Mine 8 kilometers south of Etropole and concentrator near Mirkovo village	NA.
Kaolin, mine output		Kaolin AD	Senovo, Rousse District	NA.
Lead-zinc:				
Concentrate, Pb-Zn content		Gorubso Co. (Intertrust Holding)	Erma Reka, Kardzhali, Laki and Zlatograd, all in Madan area near Greek border	59 lead, 47 zinc.
Do.		Osogovo Ltd.	Osogovo Mountains, western Bulgaria	3 lead, 2 zinc.
Do.		Rudmetal JSC	Dimov Dol Mine, near Rudozem	3 lead, 2 zinc.
Metal:				
Pb, refined		KCM S.A.	Plovdiv	65.
Do.		Lead and Zinc Complex Plc. (LZC) (Intertrust Holdings AD, 90%)	Kardzhali	33.
Zn, smelter		KCM S.A.	Plovdiv	80.
Do.		Lead and Zinc Complex Plc. (LZC) (Intertrust Holdings AD, 90%)	Kardzhali	28.
Manganese ore		Obrochishte Mine (Euromangan AD)	Tsarkva village, 10 kilometers west of Balchik	NA.
Natural gas	million cubic meters	Melrose Resources S.a r.l. (Melrose Resources Plc., 100%)	Kaliakra and Kavarna fields, in the Black Sea off the coast of Varna	465.
Perlite, mine output		Bentonit JSC (S&B Industrial Minerals AD)	Near Dzheble, southwest of Kardzali	NA.

See footnotes at end of table.

TABLE 2—Continued
 BULGARIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Petroleum:				
Crude		Oil and Gas Exploration and Production Plc.	Tyulenovo, Dolni Dubnik, Dolni Lukovit, Gorni Dubnik, and other oilfields	NA.
Refined	42-gallon barrels per day	Lukoil Neftochim Bourgas AD	Refinery at Burgas	215,000.
Silver:				
In concentrate	kilograms	Dundee Precious Metals Inc.	Chelopech	NA.
Metal		KCM S.A.	Plovdiv	100.
Steel, crude		Kremikovtzi A.D.	About 10 kilometers northeast of Sofia	NA. ¹
Do.		Stomana Industry S.A. (Sidenor S.A., 100%)	Pernik	1,400.
Zeolite, mine output		Bentonit JSC (S&B Industrial Minerals AD)	Kardzali	NA.

⁰Estimated. Do., do. Ditto. NA Not available.

¹Production at Kremikovtzi A.D. was halted at the end of 2008, and the plant declared bankruptcy in May 2010.