



# 2012 Minerals Yearbook

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## SERBIA

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# THE MINERAL INDUSTRY OF SERBIA

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Serbia's mineral industry was dominated by copper, iron and steel, and refined petroleum products. Other mineral and mineral-based commodities produced in the country included cement, coal, gold, lead, natural gas, nitrogen, salt, and selenium.

## Minerals in the National Economy

In 2012, Serbia's gross domestic product (GDP) decreased by 1.7%. In 2011 (the most recent year for which data were available), mining and quarrying made up about 1.9% of the GDP. The value of exports of mining and quarrying products in 2011 was about \$92 million, and the value of imports of mining and quarrying products was about \$2.5 billion. About 87% of crude petroleum and 90% of natural gas imports were from Russia. The country also imported about 98% of its iron ores and concentrates from Ukraine (Statistical Office of the Republic of Serbia, 2012, p. 121, 289–290, 298–299; 2013, p. 1, 4).

In 2012, Serbia's exports to the United States were valued at about \$145 million compared with about \$134 million in 2011; these included about \$47,000 in copper. Imports from the United States were valued at about \$128 million in 2012 compared with \$126 million in 2011; these included about \$3.1 million in drilling and oilfield equipment and about \$1.0 million in excavating machinery (U.S. Census Bureau, 2013a, b).

## Production

In 2012, primary refined copper production increased by 28% to 32,229 metric tons (t) from 25,251 t (revised) in 2011; estimated primary metal copper production increased by 27% to 32,500 t from 25,500 t (revised); copper content of concentrate production increased by 23% to 34,400 t from 28,000 t (revised); and estimated crude petroleum production increased by 10% to 8,340,000 barrels (bbl) from 7,570,000 bbl. Crude steel production decreased by 74% to 345,000 t from 1.3 million metric tons (Mt); pig iron production, by 75% to 312,000 t from 1.2 Mt; and salt production, by 29% to 16,506 t from 23,144 t. Data on mineral production are in table 1.

## Structure of the Mineral Industry

Cement was produced by Cementara Kosjeric a.d., Holcim (Srbija) d.o.o., and Lafarge Beocinska Fabrika Cementa. These companies had a combined cement production capacity of 4.1 million metric tons per year (Mt/yr). Rudarsko Topionicki Bazen Bor (RTB Bor) was the only producer of copper, gold, and silver in the country. Table 2 is a list of major mineral industry facilities.

At least five companies were engaged in gold and copper exploration in Serbia. These included Canadian companies Avala Resources Ltd., Dunav Resources Ltd.,

Euromax Resources Ltd., and Reservoir Minerals Inc., and Orogen Gold plc of the United Kingdom.

## Commodity Review

### Metals

**Copper.**—In May, state-owned RTB Bor announced the rehabilitation and reopening of the Cerovo Mine after an investment of about \$23 million. The open pit mine, which was closed in 2002, is located 15 kilometers (km) northwest of Bor and had estimated reserves of about 150 Mt at an average grade of 0.35% copper. The company envisioned that initial output when production resumes at Cerovo would be 2.5 Mt/yr of ore and would increase to 5.5 Mt/yr after 2015. In 2011, RTB Bor awarded the contract for the modernization of its existing copper smelting complex to SCN-Lavalin Group Inc. of Canada, at a cost of about \$211 million. The project, which was to include a flash furnace and a sulfuric acid plant, was scheduled to be completed by yearend 2013. The new smelter was expected to produce 80,000 metric tons per year (t/yr) of anodes (SCN-Lavalin Group Inc., 2011; Outotec Oyj, 2012; Rudarsko Topionicki Bazen Bor, 2012a, b; Savic, 2012).

**Gold.**—Avala Resources through its subsidiary Avala Resources d.o.o. held copper and gold exploration licenses for the 1,050-square-kilometer Timok Gold Project, which is located about 270 km southeast of the capital city of Belgrade. In January 2013, a technical report and mineral resource estimates were completed by AMC Consultants Ltd. of the United Kingdom. Total inferred mineral resources at the Bigar Hill, the Korcan, and the Kraku Pester deposits were estimated to be 48.7 Mt at an average grade of 1.5 grams per metric ton (g/t) gold using a cutoff grade of 0.6 g/t gold. A preliminary economic assessment was expected to be completed in mid-2013 (AMC Consultants Ltd., 2013, p. 1, 8; Avala Resources Ltd., 2013).

**Iron and Steel.**—On January 31, United States Steel Corp. of Pennsylvania sold its 2.2-Mt/yr-capacity steel plant in Smederevo (the only steel plant in Serbia) to the Government of Serbia. After the sale, the plant's name was changed to Zelezara Smederevo d.o.o. The Government was seeking to prevent any job losses and intended to find a new strategic partner for state-owned Zelezara Smederevo. In June, the company announced that it would temporarily suspend production at its second blast furnace in July, stating that the company needed to find a strategic partner. In October, the Government, through the Serbian Ministry of Finance and Economy, opened a second public invitation for a new strategic partner and for further developments of the Zelezara Smederevo plant. The public invitation was scheduled to close on February 28, 2013 (Ministry of Finance and Economy, 2012a, b; United States Steel Corp., 2012, p. 4; Zelezara Smederevo d.o.o., 2012).

## Industrial Minerals

**Lithium.**—Rio Tinto plc of the United Kingdom held 100% interest in the Jadar lithium-borate project, which is located about 100 km from the capital city of Belgrade in western Serbia. By yearend, total mineral resources at Jadar were estimated to be 118 Mt at an average grade of 1.6% lithium oxide. A prefeasibility study was underway. The reported inferred resources represented only those in the lowest of the three vertically stacked zones of the deposit. The company estimated that, if developed, the project could begin production by 2016 (Rio Tinto Minerals, 2011, 2013; Rio Tinto plc 2013, p. 27, 55, 57).

## Mineral Fuels

**Natural Gas and Petroleum.**—Naftna Industrija Srbije a.d. (NIS), which was a joint venture between JSC Gazprom Neft of Russia (56.15%) and the Government (29.87%), was the sole producer of natural gas, petroleum, and refined petroleum products in Serbia. In November, the company completed a modernization project at its Pancevo refinery. The project included a new light hydrocracking and motor fuel hydrotreatment facility. From 2013 onward, the Pancevo refinery would produce only EURO-5 standard gasoline and diesel with sulfur content of less than 10 parts per million (in accordance with European Union environmental requirements). NIS expected eventually to increase the refinery's production capacity to about 640,000 t/yr of standard gasoline and 1.5 Mt/yr of diesel (JSC Gazprom Neft, 2012; Naftna Industrija Srbije a.d., 2012a, b).

## Outlook

Serbia's GDP growth is projected to reach 2% in 2013 based on the planned increase in exports, mostly in the agriculture and automobile sectors (International Monetary Fund, 2012, p. 194; European Bank for Reconstruction and Development, 2013). The reopening of the Cerovo Mine, the expansion plans at RTB Bor, and the modernization and expansion at the NIS refinery are expected to strengthen the mineral industry in the short run. In the longer run, new projects in the nonfuel mineral sector, such as possible developments of copper, gold, and lithium deposits, are likely to provide significant revenue to the Government and to the GDP. Plans to rehabilitate the country's infrastructure (including railways, roads, water supply, and wastewater treatment plants) are all likely to attract increased foreign direct investment in the mineral sector and to increase interest in nonfuel mineral prospecting.

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

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011	2012
<b>METALS</b>					
Aluminum ingot, including alloys, secondary	1,882	1,789	1,739	-- <sup>r</sup>	--
<b>Copper:</b>					
Mine and concentrator output:					
Ore:					
Gross weight thousand metric tons	7,746	9,896	10,665	12,216 <sup>r</sup>	14,346
Cu content of ore	21,900	24,400	28,400	33,300 <sup>r</sup>	41,531
Concentrate, Cu content	20,800 <sup>r</sup>	23,400 <sup>r</sup>	24,600 <sup>r</sup>	28,000 <sup>r</sup>	34,400
Metal:					
Blister and anodes, primary <sup>e</sup>	19,000 <sup>r</sup>	19,000 <sup>r</sup>	21,500 <sup>r</sup>	25,500 <sup>r</sup>	32,500
Refined:					
Primary	18,550 <sup>r</sup>	18,875 <sup>r</sup>	21,240 <sup>r</sup>	25,251 <sup>r</sup>	32,229
Secondary	2,641 <sup>r</sup>	1,186 <sup>r</sup>	963 <sup>r</sup>	3,198 <sup>r</sup>	2,473
Total	21,191 <sup>r</sup>	20,061 <sup>r</sup>	22,203 <sup>r</sup>	28,449 <sup>r</sup>	34,702
Gold, refined kilograms	712	452	356	1,032 <sup>r</sup>	900
<b>Iron and steel, metal:</b>					
Pig iron	1,582,000	1,008,000 <sup>r</sup>	1,265,000	1,226,000	312,000
Crude steel	1,662,000	1,097,000	1,254,000	1,324,000	345,000
Semimanufactures	2,393,430	1,556,017	2,127,960	1,885,019 <sup>r</sup>	480,000 <sup>e</sup>
<b>Lead:</b>					
Ore:					
Gross weight (Pb-Zn ore)	202,000	225,000	219,000	412,000 <sup>r</sup>	420,000 <sup>e</sup>
Pb content <sup>e</sup>	1,600	1,800	1,800	1,800	1,800
Metal, including alloys, secondary, refined <sup>e</sup>	929 <sup>3</sup>	1,000	1,000	1,000	1,000
<b>Platinum-group metals:</b>					
Palladium kilograms	70	38	22	4 <sup>r</sup>	22
Platinum do.	--	12	--	6 <sup>r</sup>	3
Selenium do.	16,827	19,075	10,592	12,947 <sup>r</sup>	13,200
Silver, mine output, Ag content do.	2,300 <sup>e</sup>	2,500 <sup>e</sup>	4,820	4,750 <sup>r</sup>	5,224
<b>INDUSTRIAL MINERALS</b>					
Cement thousand metric tons	2,843	2,232	2,130	2,095	1,831
Lime do.	292	251	239	274	239
Nitrogen, N content of ammonia <sup>e</sup>	47,000	53,000	84,000	132,000 <sup>r</sup>	130,000
Salt, all sources	30,115	28,783	30,816	23,144	16,506
Sand and gravel, excluding glass sand <sup>e</sup> thousand cubic meters	8,670	5,790	6,950	6,532 <sup>r</sup>	6,167
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
<b>Coal:</b>					
Bituminous thousand metric tons	66	69	108	142 <sup>r</sup>	141
Brown coal and lignite do.	38,519	38,828	38,490	40,636 <sup>r</sup>	38,587
Total do.	38,585	38,897	38,598	40,778 <sup>r</sup>	38,728
Natural gas, gross production million cubic meters	282	283	427	616	672
<b>Petroleum:<sup>4</sup></b>					
Crude thousand 42-gallon barrels	4,720	4,920	6,420	7,570 <sup>e</sup>	8,340 <sup>e</sup>
Refinery products <sup>e</sup> do.	18,700	16,700	16,000	13,200 <sup>r</sup>	13,100 <sup>r</sup>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through November 7, 2013.

<sup>2</sup>In addition to the commodities listed, crude gypsum, secondary magnesium metal, zinc, and other mineral commodities may have been produced, but available information is inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>Data were converted to barrels from thousand metric tons, and were reported as follows: for crude production, 2008—636; 2009—663; 2010—865; 2011—1,020; and 2012—1,124; for petroleum products, 2008—2,462; 2009—2,227; 2010—2,130; 2011—1,760 (revised); and 2012—1,740 (estimated).

TABLE 2  
SERBIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity holders	Location of main facilities	Annual capacity
<b>Antimony:</b>			
Ores and concentrates	Farmakom M.B.	Mines and mills near Zajaca	NA
Metal	do.	Smelter at Zajaca	NA
Cement	Beocinska Fabrika Cementa (Lafarge S.A., 100%)	Plant at Beocin	2,000
Do.	Holcim (Srbija) a.d. (Holcim Ltd., 100%)	Plant at Popovac	1,400
Do.	Cementara Kosjeric a.d. (Titan Group, 100%)	Plant at Kosjeric	750
<b>Coal:</b>			
Bituminous	JP PEU Resavica	Ibarski Rudnici Mines near Baljevac and Vrska Cuka Mines	70 <sup>e</sup>
Brown coal	do.	Underground mines near Resavica, Bogdinac, Bogovina, Krepoljin, and Stavalj	400 <sup>e</sup>
Lignite	MB Kolubara Ltd. (Electric Power Industry of Serbia)	Opencast mines: Field B, Field D, Veliki Crljeni, and Tamnava West near Vreoci	31,000
Do.	TPPs-OCMs Kostolac Ltd. (Electric Power Industry of Serbia)	Opencast mine at Drmno near Kostolac	8,500
Do.	JP PEU Resavica	Underground mine at Lubnica	60 <sup>e</sup>
<b>Copper:</b>			
Mine production, Cu content of concentrate	Rudarsko Topionicki Bazen Bor (RTB Bor) (Government owned)	Mine and mill "Jama" at Bor	8
Do.	do.	Mine and mill at Majdanpek	65
Do.	do.	Mine and mill at Veliki Krivelj	35
Metal	do.	Smelter at Bor	170
Do.	do.	Electrolytic refinery at Bor	170
Lead, metal, secondary	Farmakom M.B.	Smelter at Zajaca	NA
Lead-zinc ore	Contango d.o.o.	Mine and mill at Rudnik	250 <sup>e</sup>
Do.	NA	Grot Mine near Vranje	300 <sup>e</sup>
Do.	Farmakom M.B.	Mines at Rajiceva Gora, Ravnaja, and Veliki Cip	350 <sup>e</sup>
Do.	Mineco Group	Mine at Veliki Majdan, near Ljubovija	60 <sup>e</sup>
Lime	Jelen Do a.d. (Nexe Grupa)	Plant in Jelen Dol, west of Cacak	90
Do.	Zelezara Smederevo d.o.o. <sup>1</sup>	Plant at Kucevo	NA
Do.	Ravnaja AD	Plant at Mali Zvornik	NA
Magnesite, concentrate	Magnohrom d.o.o.	Mines near Kraljevo	NA
<b>Magnesium:</b>			
Mine (byproduct of dolomite mining)	MG Serbien d.o.o.	Bela Stena, near Baljevac	NA
<b>Metal:</b>			
Primary	do.	do.	8,500
Secondary	do.	do.	12,000
Natural gas	million cubic meters	Naftna Industrija Srbije a.d. (NIS) (JSC Gazprom Neft, 56.15%, and Government, 29.87%)	Gas is produced from wells located throughout northern Serbia 620 <sup>e</sup>
<b>Petroleum:</b>			
Crude	thousand 42-gallon barrels per day	do.	Crude petroleum produced mainly in northeastern Serbia 21 <sup>e</sup>
Refined	do.	do.	Refinery at Pancevo 4,800
Do.	do.	do.	Refinery at Novi Sad 2,500
Pig iron	do.	do.	Two blast furnaces at Smederevo NA
Steel, crude	do.	do.	Plant at Smederevo 2,400
Zinc, metal	do.	do.	Electrolytic plant at Sabac 30

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

<sup>1</sup>The lime plant at Kucevo and the pig iron and steel plant at Smederevo were sold to the Serbian Government by United States Steel Corp. of Pennsylvania on January 31, 2012.

After the sale, the company's name was changed to Zelezara Smederevo d.o.o.