



2012 Minerals Yearbook

ROMANIA

THE MINERAL INDUSTRY OF ROMANIA

By Alberto Alexander Perez

Romania's mineral production was not significant in terms of world production, and the mineral industry was dependent on imports of mineral ores and concentrates to produce refined metals. In 2012, Romania's gross domestic product (GDP) increased by 0.3% to \$277.9 billion. The services sector accounted for 59.5% of the GDP; the agricultural sector, 31.1%; and the industrial sector, 21.1%. The Government did not report the percentage of Romania's GDP that was from mining, quarrying, and metal production activities (U.S. Central Intelligence Agency, 2013).

Minerals in the National Economy

Romania gained European Union (EU) membership on January 1, 2007. As a consequence of its EU membership, much of Romania's metallic ore mining activities for copper, iron ore, lead, and zinc stopped or declined rapidly because the country's mining and mineral processing facilities were not in conformance with EU regulations. To meet EU standards, production facilities would need to be modernized and new facilities built. At the same time, membership in the EU did not increase the possibility in the short term for the mineral industry to benefit from access to the EU market because of the world economic recession, which affected the European and the Romanian mineral industries greatly.

The Economic Ministry of Romania released a report in 2012 titled "Mineral Industry Strategy 2012–2035," which outlines a series of objectives and goals that the Government seeks to achieve. Among them are (a) ensuring the sustainable development of Romania's mineral resources; (b) the harmonization of the national interest and investment capital while meeting the mentioned sustainability requirements; and (c) reducing the dependence on imported primary energy resources and raw minerals and improving the transparency of the mineral industry (Ministerul Economiei Romania, 2012, p. 1).

As economic conditions improve, the Romanian mineral industry could become a significant supplier to the EU mineral commodities market, as Romania was one of the few countries in Europe where metal ore mining was still ongoing. Romania produced principally alumina, primary and secondary aluminum, cement, coal, copper ore, iron ore, lead, steel, and zinc (table 1).

Production

In 2012, the levels of metal mining and processing were mixed; the production of alumina decreased by 13.5% and that of primary and secondary aluminum decreased by 3.8% and 45.4%, respectively. Other metallic mineral commodities for which production decreased compared with that of 2011 included primary refined lead, for which output decreased by 79.2%; silicomanganese, 46.8%; steel (crude), 10.3%; and pig

iron, 9.1%. Metallic mineral commodities for which production increased included mined copper, which increased by 23%, and zinc metal, by 36.4%. Notable increases in industrial mineral production included that of feldspar, by 140%; cement, 3%; and lime, 1.7%. The production of sulfuric acid decreased by 83.3%; caustic soda, by 59.3%; sand and gravel, by 49.7%; nitrogen, by 28.1%; gypsum, by 14.9%; and salt, by 12% (table 1).

Structure of the Mineral Industry

Since joining the EU in 2007, Romania had been in transition from a majority Government-owned mineral industry to an industry where the majority of firms are privately owned. Foreign direct investment in the mineral industry was significant; ArcelorMittal of Luxembourg, HeidelbergCement AG of Germany, Holcim Ltd. of Switzerland, Lafarge S.A. of France, and Vimetco N.V. of the Netherlands were some of the major foreign firms investing in Romania's mineral sector.

Alum S.A. (Alum), which was owned by Vimetco, was the only alumina refinery in Romania. The company had completed a modernization of the refinery's manufacturing process in 2009. The refinery's production averaged about 500,000 metric tons per year (t/yr) (Alum S.A., 2014).

Vimetco also owned Alro S.A., which was one of the principal producers of primary aluminum in Europe. Alro produced 252,000 metric tons (t) of primary aluminum in 2012.

Carpatcement Holding S.A., which was owned by HeidelbergCement, was the principal cement manufacturer in Romania; its three plants had an estimated total production capacity of 6.3 million metric tons (Mt). Holcim and Lafarge were other important cement manufacturers in Romania.

The Government-owned copper ore company S.C. Cupru Min S.A. owned the Rosia Poieni Mine, which was the largest copper mine, by production tonnage, in Romania. The company reported that the mine had an estimated capacity of 9 million metric tons per year (Mt/yr) of ore.

Commodity Review

Metals

Bauxite and Alumina and Aluminum.—Alum reported in December that it had invested more than \$10 million in modernizing and upgrading its slag dump of Tulcea, which was a project that the company started in 2009. Because of this upgrade, the National Dam Committee of Romania renewed the authorization for the company's mud pond operation until 2016. Alum indicated that the modernization program included performing a partial shutdown of the former dump for red slag and building a system for dry slag deposits. Alum also reported that the company had built a new transport and depositing system for dry stacking of the slag, modernized the wetting system,

consolidated all the dikes, and completed the pluvial water channel. The company projected that all construction work for capturing the meteoric waters from upstream of the dump and diverting them by means of a hydro-technical system (in accordance with the design approved by the National Dam Committee) would be completed by the end of the year (Vimetco N.V., 2012; Alum S.A., 2014).

Copper.—In April, the Government of Romania announced that it had backed out of an agreement to sell its leading copper mine to Roman Copper Corp. of Canada. Roman had won a tender to buy the Rosia Poieni Mine in Abrud from S.C. Cupra Min for \$262 million in March 2012. The Government reported that after 10 days of talks, however, the two parties could not agree on the terms of the deal, which was part of a privatization plan agreed to by international lenders and designed to raise nearly \$2 billion in 2012. According to S.C. Cupru Min, the Rosia Poieni Mine had estimated reserves of 900,000 t of copper, which was about 60% of Romania's copper reserves (Thomson Reuters, 2012).

Gold.—In 2012, Gabriel Resources Ltd. of Canada reported proven reserves of 5.9 million troy ounces [184,000 kilograms (kg)] of gold and 32.6 million troy ounces (1,010,000 kg) of silver, and probable reserves of 4.2 million troy ounces (131,000 kg) of gold and 15.0 million troy ounces (about 467,000 kg) of silver at its Rosia Montana project. The company estimated that the project could produce an annual average of 511,000 troy ounces (15,900 kg) of gold during a 16-year mine life, which would make Romania a significant European gold producer. The company also reported that 62.45% of the people consulted in a referendum vote were in favor of resuming the mining operations at the Rosia Montana project, which had ceased in 2006. The referendum had been initiated by 35 local mayors and was conducted on December 9, 2012. The referendum was advisory in nature and did not have the power to enforce or bind the Government to any particular action (Gabriel Resources Ltd., 2012a, b).

Carpathian Gold Inc. of Canada, which was a junior mine developer, said that it would count about 7.2 million troy ounces (224,000 kg) of gold and 635,000 t of copper in its final prefeasibility study of the Rovina Valley project. Rovina's measured and indicated resources were currently 406 Mt at grades of 0.55 gram per metric ton (g/t) gold and 0.16% copper (Keen, 2012).

Industrial Minerals

Cement.—In 2012, reported cement production in Romania increased compared with that of the previous year, continuing a trend of increased production but still below the 5-year high of 11 Mt in 2008 (table 1). The long-term decrease was possibly owing to weak demand in the domestic construction sector and to weak foreign demand owing to the protracted recession that countries in the region had been subject to since 2009. Romania's cement production capacity had increased in 2010 (the latest year for which data were available) by 2.8 Mt/yr to 16.9 Mt/yr owing to investments made in existing plants. Holcim (Romania) S.A. had increased the capacity of its plants in 2010 by 1 Mt/yr, Carpatcement Holding had increased the capacity of its plant at

Bicaz by 1.4 Mt/yr, and Lafarge Ciment S.A. had increased the capacity of its plants by 0.4 Mt/yr (HeidelbergCement AG, 2010, p. 67; Holcim Ltd., 2010, p. 187; Lafarge S.A., 2010, p. 30).

Mineral Fuels

Petroleum.—In July, Romania's Zeta Petroleum plc. announced that a new energy and gas law (law No.123/2012) had been published in the Romanian official Gazette No. 485, dated July 16, 2012. The main objective of this law is to put into Romanian law the provisions of the European Commission's third energy package concerning rules for the internal market in natural gas. The new law provides a calendar for the elimination of regulated prices for end customers. These regulated prices ended on December 1, 2012, for nonhousehold customers and were to end on July 1, 2013, for household clients (Zeta Petroleum plc., 2012).

Outlook

Romania's mineral production will likely increase as the resumption of mining activity and privatizations take place according to the new mineral strategy that the Government has adopted. The level of output will mostly be driven by the international demand for the country's mineral products, particularly demand from EU countries. The modernization of facilities to meet EU standards is likely to be of the highest priority for the mineral industry (Ministerul Economiei Romania, 2012).

References Cited

- Alum S.A., 2014, Welcome to Alum S.A.: Alum S.A. (Accessed October 10, 2014, at <http://www.alum.ro/en>.)
- Gabriel Resources Ltd., 2012a, Reserves and resources: Toronto, Ontario, Canada, Gabriel Resources Ltd. (Accessed November 9, 2013, at <http://www.gabrielresources.com/site/reserves.aspx>.)
- Gabriel Resources Ltd., 2012b, Referendum confirmed overwhelmingly in favour of mining in Rosia Montana: Gabriel Resources Ltd. press release, December 12, 2 p. (Accessed August 9, 2013, at http://www.gabrielresources.com/documents/GBU_Referendum_Results_000.pdf.)
- HeidelbergCement AG, 2010, Annual report 2009: Heidelberg, Germany, HeidelbergCement AG, 160 p.
- Holcim Ltd., 2010, Annual report 2009: Zurich, Switzerland, Holcim Ltd., 202 p.
- Keen, Kip, 2012, Carpathian doubles gold-copper resource bound for Rovina prefeasibility study: Mineweb.com, July 17. (Accessed August 13, 2013, at <http://www.mineweb.com/mineweb/content/en/mineweb-europe-and-middle-east?oid=155250&sn=Detail>.)
- Lafarge S.A., 2010, 2009 annual report: Paris, France, Lafarge S.A., 263 p.
- Ministerul Economiei Romania, 2012, Strategia Industriei Miniere pentru perioada 2012–2035, Forma actualizata la data de 31.05.2012: Ministerul Economiei Romania, May 31, 31 p. (Accessed August 13, 2013, at http://www.minind.ro/resurse_minerale/Strategia_Industriei_Miniere_2012_2035.pdf.)
- Thomson Reuters, 2012, Romania backs out of mine sale, privatization hits snag: Thomson Reuters, April 7. (Accessed August 9, 2013, at <http://ca.reuters.com/article/businessNews/idCABRE83605Y20120407?sp=true>.)
- U.S. Central Intelligence Agency, 2013, Romania, in The world factbook: U.S. Central Intelligence Agency. (Accessed August 6, 2013, at <https://www.cia.gov/library/publications/the-world-factbook/geos/ro.html>.)
- Vimetco N.V., 2012, Alum Tulcea invested USD 10 million to upgrade its slag dump red mud lake: Rotterdam, Netherlands, Vimetco N.V., December 12. (Accessed August 9, 2013, at <http://www.alum.ro/en/article/alum-tulcea-invested-usd-10-million-upgrade-its-slag-dump-red-mud-lake>.)
- Zeta Petroleum plc., 2012, New energy and gas law; liberalises Romanian domestic gas market: Zeta Petroleum plc., July 26, 2 p. (Accessed August 9, 2013, at http://www.zetapetroleum.com/files/files/70_120726_RomanianOfficialGazette_1_3.pdf.)

TABLE 1
ROMANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2008	2009	2010	2011	2012
METALS					
Alumina, calcined, gross weight	--	44,000	450,000 ^e	520,000 ^e	450,000
Aluminum:					
Primary	264,752	201,000	240,000 ^e	262,000 ^e	252,000 ^e
Secondary	12,149	10,544	18,282	23,970 ^r	13,089
Total	276,901	211,544	258,000 ^e	285,000 ^r	265,000 ^e
Copper:					
Mine output, Cu content of concentrate ^e	2,000	1,000	5,000	6,500	8,000
Metal, refined:					
Primary	12,000	3,000	3,000	--	--
Secondary ^e	3,000	1,000	1,000	--	--
Total ^e	15,000	4,000	4,000	--	--
Gold, mine output, Au content ^e kilograms	400	400	400	--	--
Iron and steel:					
Metal:					
Pig iron thousand metric tons	2,945	1,575	1,726	1,595	1,450
Ferroalloys, electric furnace:					
Ferrochromium ^e	6,000	15,000	14,000	--	--
Silicomanganese ^e	10,000	--	20,000	31,000	16,500
Total ^e	16,000	15,000	34,000	31,000	16,500
Steel, crude thousand metric tons	5,035	2,761	3,724	3,811	3,417
Finished products: ^e					
Pipes and tubes do.	850	450	678	799	789
Rolled products do.	4,500	2,800	3,762 ³	4,061 ³	3,472 ³
Lead, refined:					
Primary	34,000	9,000	11,000	6,500	1,350
Secondary ^e	5,000	3,000	3,000	3,000	3,000
Total ^e	39,000	12,000	14,000	9,500	4,300
Manganese, Mn content of ore: ^e					
Gross weight thousand metric tons	50	15	--	--	--
Mn content do.	10	3	--	1 ^r	--
Silver, mine output, Ag content ^e	18	18	--	--	--
Zinc metal, refined, primary and secondary	62,000 ^e	300	200	220	300
INDUSTRIAL MINERALS					
Cement, hydraulic thousand metric tons	11,000 ^e	7,800 ^e	7,000	7,846	8,082
Clays:					
Bentonite, marketable	16,643	13,756	20,000 ^e	18,008	17,942
Kaolin, marketable	3,166	1,000 ^e	500	--	--
Feldspar ^e	25,000	14,000	5,500 ^r	2,500	6,000
Fluorspar ^e	15,000	15,000	15,000	--	--
Graphite	-- ^e	20,000 ^e	7,000	--	--
Gypsum thousand metric tons	885	600	600 ^e	834 ^r	710
Lime ^e do.	2,000	1,600	1,700	1,679 ³	1,708 ³
Nitrogen, N content of ammonia ^e do.	1,300	40	80	160	115
Salt: ^e					
Rock thousand metric tons	50	40	40	40	40
Other do.	2,400	2,000	2,400	2,500	2,200
Total do.	2,450	2,040	2,440 ^r	2,540 ^r	2,240
Sand and gravel ^e do.	5,000	3,000	2,700	5,873 ^{r,3}	2,952 ³
Sodium compounds:					
Caustic soda ^e do.	650	300	300	540 ^r	220
Soda ash, manufactured, 100% Na ₂ CO ₂ basis do.	450 ^e	400 ^e	350	420	430
Sulfuric acid ^e	--	500	383	2,100	350
Talc ^e	1,700	500	307	100	--

See footnotes at end of table.

TABLE 1—Continued
ROMANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2008	2009	2010	2011	2012
MINERAL FUELS AND RELATED MATERIALS					
Coal, brown and lignite ^e	35,000	30,000	30,000	35,000	33,500
Coke, metallurgical	1,080	320	--	--	--
Gas, natural, gross:					
Associated	1,000 ^e	1,000 ^e	1,161	1,166 ^r	1,150
Nonassociated	10,400 ^e	9,860	9,694	9,733 ^r	9,783
Total	11,400 ^e	10,860	10,855	10,901 ^r	10,933
Petroleum:					
Crude ⁴	36,000	33,700	33,000 ^e	31,000 ^e	31,000 ^e
Refinery products ⁵	112,000	97,300	95,000 ^e	79,000 ^e	78,000 ^e
Uranium, U ₃ O ₈ content ^e	91	88	88	88	88

^eEstimated; 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 August 2, 2013.

²In addition to the commodities listed, a variety of construction materials are produced; antimony, asbestos, bismuth, and pyrites may have been produced; and molybdenum may have been produced as a byproduct of copper from 1988 onward; however, available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Figures converted to barrels from production in metric tons, which was reported as the following: 2007—5,086,000; 2008—4,798,000; 2009—4,494,000; 2010—4,490,000 (estimated); 2011—4,000,000 (estimated); and 2012—4,000,000 (estimated).

⁵Figures converted to barrels from production in metric tons, which was reported as the following: 2007—13,648,000; 2008—13,974,000; 2009—12,165,000; 2010—12,000,000 (estimated); 2011—10,000,000 (estimated) and 2012—9,800,000 (estimated).

TABLE 2
ROMANIA: 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
Alumina	Alum S.A. (Vimetco N.V., 99.4%)	Plant at Tulcea, Danube Delta	600
Aluminum:			
Primary	Alro S.A. (Vimetco N.V., 88%)	Slatina, 120 kilometers west of Bucharest	265
Secondary	Neferal S.A. (member of Metanef Group)	Bucharest	NA
Cement	Holcim (Romania) S.A. (Holcim Ltd., 100%)	Plants at Alesd, Campulung, and Turda	5,700
Do.	Carpatcement Holding S.A. (HeidelbergCement AG, 99%)	Plant at Bicaz, northeastern Romania	3,000
Do.	do.	Plant at Fieni, 90 kilometers northwest of Bucharest	1,650
Do.	do.	Plant at Deva, western Romania	1,650
Do.	Lafarge Ciment S.A. (Lafarge S.A., 99%)	Plants at Hoghiz and Medgidia	4,900
Coal:			
Bituminous	Compania Nationala a Huilei-Petrosani (Government)	7 mines located near Petrosani	3,500 ^e
Lignite	Societatea Nationala a Lignitului Oltenia (Government)	Tismania I-II, Garla-Rovinari Est, and Pinoasa opencast mines at Rovinari	8,000 ^e
Do.	do.	Rosia, Pesteana Nord, and Pesteana Sud-Udari opencast mines at Balteni	6,900 ^e
Do.	do.	Udari underground mine at Udari	300 ^e
Do.	do.	Jilt Sud and Jilt Nord opencast mines at Matasari	7,000 ^e
Do.	do.	Dragotesti underground mine at Matasari	600 ^e
Do.	do.	Lupoia and Rosiuta opencast mines at Motru	5,000 ^e
Do.	do.	Plostina, Horasti, and Lupoiaia underground mines at Motru	1,600 ^e
Do.	do.	Seciuri, Oltet, Berbesti-Vest, and Panga opencast mines near Berbesti	2,000 ^e
Do.	do.	Albeni underground mine at Bolbocesti	555 ^e
Do.	do.	Husnicioara-Vest opencast mine near Drobeta Turnu Severin	2,500 ^e
Do.	do.	Zegujani underground mine about 18 kilometers northeast of Drobeta Turnu Severin	600 ^e
Do.	Societatea Nationala a Carbunelui Ploiesti (Government)	8 mines located near Campulung, Baraolt City, Sarmasag, Popesti Commune, Comanesti Commune, Filipestii de Padure Commune, Sotanga Commune, and Borsec City	3,000 ^e
Do.	SC Complexul Energetic Craiova SA (Ministry of Economy, 73%)	Prigaria Mine	1,000 ^e
Coke	ArcelorMittal Galati (ArcelorMittal, 100%)	Galati, north of Brail	2,100
Copper, ore	S.C. Cupru Min S.A., REMIN S.A., Compania Nationala Minvest, and Moldomin S.A. (Government)	Borsa Balan, Rosia Poieni Mine; Moldova Noua	9,000
Ferroalloys, ferrochromium	S.C. Feral s.r.l.	Complex at Tulcea	NA
Iron ore	Compania Nationala Minvest (Government)	Mining complex at Hunedoara, west-central Romania	1,320
Do.	do.	Resita Mining Complex, southwestern Romania	660
Do.	do.	Napoca-Cluj Mining Complex, northwestern Romania on the Somesul River	990
Lead:			
In ore	Compania Nationala REMIN S.A. (Government)	Baia Mare Mine, near Ukrainian and Hungarian borders	12
Do.	Compania Nationala Minvest (Government)	Vetel Mine, near Deva	5
Metal	Neferal S.A. (member of Metanef Group)	Bucharest	25

See footnotes at end of table.

TABLE 2—Continued
ROMANIA: 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	
Natural gas	million cubic meters	SNGN Romgaz S.A. (Romanian Ministry of Economy, 85.01%, and Fondul Proprietatea, 14.99%)	Operated more than 150 reservoirs in Moldova, Muntenia, and Transylvania regions	NA
Do.	do.	S.C. OMV Petrom S.A. [OMV AG, 51.01%; Ministry of Economy, 20.64%; Property Fund S.A. (Government), 20.11%]	Approximately 250 commercial oil and gas fields located in southern and western Romania and offshore in the Black Sea	NA
Petroleum:				
Crude	do.	do.	NA	
Refined	do.	Arpechim refinery, just south of Ploiesti	3,500	
Do.	do.	Petrobrazi refinery, just south of Ploiesti	4,500	
Do.	Romp petrol Rafinarie S.A. (Romp petrol Group)	Refinery at Navodari	4,500	
Do.	Vega Ploiesti Refinery (Romp petrol Group)	Refinery, just north of Ploiesti	500	
Do.	S.C. RAFO S.A.	Refinery at Onesti	3,000 ^e	
Do.	S.C. Petrotel S.A. (OAO Lukoil)	Refinery, just east of Ploiesti	2,400	
Do.	Astra Refinery	Refinery in Ploiesti	NA	
Do.	Refinaria Petrolsub Suplacu de Barcau	Refinery at Suplacu de Barcau	NA	
Do.	Darmanesti refinery	Refinery at Darmanesti, eastern Romania	NA	
Steel	ArcelorMittal Galati (ArcelorMittal, 100%)	Galati, north of Brail	4,500 ^e	
Do.	ArcelorMittal Hunedoara (ArcelorMittal, 100%)	Hunedoara, west-central Romania, near Calan	NA	
Do.	S.C. Donasid S.A. (Tenaris S.A., 99%)	Calarasi, southeastern Romania	470	
Do.	S.C. TMK-Resita S.A. (OAO TMK, 100%)	Resita, southwestern Romania	450	
Do.	Mechel Targoviste (OAO Mechel, 87%)	Targoviste	630 ^e	
Do.	Mechel Campia Turzii SA (OAO Mechel, 87%)	Campia Turzii, northwestern Romania	300 ^e	
Do.	Ductil Steel (OAO Mechel, 100%)	Otelu Rosu, southwestern Romania	400 ^e	
Uranium	Compania Nationala a Uraniului (Government)	Suceava County	NA	
Zinc, ore	Compania Nationala REMIN S.A. (Government)	Vetel Mine, near Deva	45	

^eEstimated. Do. do. Ditto. NA Not available.