



# 2014 Minerals Yearbook

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## ROMANIA

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# THE MINERAL INDUSTRY OF ROMANIA

By John R. Matzko

Romania's mineral production was not globally significant in 2014; however, the country had potentially significant mineral resources for ferrous and nonferrous metals, natural gas, petroleum, precious metals, and salt. Romania principally produced alumina, primary and secondary aluminum, cement, coal, copper ore, pig iron, lead, steel, and zinc (table 1; National Agency for Mineral Resources, 2016a).

Romania's nominal gross domestic product (GDP) increased to \$199 billion in 2014. The services sector made the most significant contribution to the GDP at 53.3% of the total, followed by the industrial sector, which contributed 24.1%. Construction contributed 6.3% to the GDP, and agriculture, forestry, and fishing together contributed 4.7%. In 2014, the gross industrial production index increased by 6.1%, supported by a 7.5% increase in manufacturing and a 1% increase in mining and quarrying (National Institute of Statistics, 2014a, p. 6; 2015b, p. 50, 51; International Monetary Fund, 2015).

## Minerals in the National Economy

The number of active enterprises in the mining and quarrying sector increased by 1.3%, from an estimated 1,072 in 2013 to an estimated 1,086 during the first half of 2014 (the latest year for which data were available). The number of construction enterprises increased by 3.3%, from 45,382 in 2013 to 46,868 in 2014 (National Institute of Statistics, 2015b, p. 60).

The mining and quarrying sector in Romania employed an average of 60,950 people in 2014. Of these, 21,260 were employed in the extraction of crude oil and natural gas, 19,060 in mining of coal and lignite, 2,630 in mining of metal ores, 9,130 in other mining and quarrying, and 8,880 in mining support services. In the manufacturing sector, 3,920 people worked on the manufacture of coke and refined petroleum products, 36,580 on the manufacture of nonmetallic mineral products, 30,050 on the manufacture of basic metals, and 70,490 on fabricated metal products (National Institute of Statistics, 2015a, p. 80–81).

## Government Policies and Programs

The primary laws regulating mineral and mining activities in Romania are law No. 238/2004 (the Petroleum Law) and law No. 85/2003 (the Mining Law); the latter was adopted in 2003 and amended in 2005, 2007, and 2009. Mineral rights are acquired through prospecting, exploration, and exploitation permits or concessions granted by the National Agency for Mineral Resources (NAMR). An exploration concession is valid for up to 5 years and is renewable for a maximum of 3 years. The concession gives the holder the exclusive right to explore for any minerals that may occur within the concession area. Exploitation concessions are granted for initial terms of 20 years and are renewable for successive 5-year periods. Exploitation concessions give the holder the right to explore, exploit, process,

refine, and trade all minerals (except oil, gas, and radioactive materials) occurring within the area of the concession. Upon completion of the exploration phase, the concession may be converted into an exploitation concession with the submission to NAMR of several reports and documents—a final exploration report, an application for conversion, a feasibility study, a mine plan, an environmental impact assessment (EIA), an environmental rehabilitation plan, a social impact statement, and any other relevant documents as may be requested by the agency (Gabriel Resources Ltd., 2015, p. 20–21; National Agency for Mineral Resources, 2016b, c).

## Production

In 2014, significant production increases were noted for sand and gravel, which increased by 98% compared with that of 2013; pig iron, by an estimated 23%; and gypsum, by about 19%. Smaller production increases were estimated for caustic soda (nearly 8%); crude steel (6%); and primary aluminum, bentonite, and cement (about 5% each). Several commodities showed decreased production in 2014; among these, the most significant decreases were estimated for secondary refined lead (14%), feldspar (12%), alumina (7%), and coal (5%) (table 1).

## Structure of the Mineral Industry

Since joining the European Union (EU) in 2007, Romania's mineral sector had been in transition from the Government owning the majority of firms to the majority of firms being privately owned. At the end of 2013, state-owned enterprises constituted 44% of the energy and gas sector and 18% of the mining and quarrying sector. The state owns all mineral resources in the country as well as in the portion of the continental shelf of the Black Sea that adjoins Romania. In November 2014, the Government's energy department sought interest in the privatization of Societatea Complexul Energetic Hunedoara S.A. (Hunedoara Energy Complex), which generated thermal and electric power from coal. It was also announced in 2014 that the state-owned uranium miner Compania Nationala a Uraniului (CNU) would merge with Societatea Nationala Nuclearelectrica (SNN), which was the state nuclear power corporation (World Nuclear Association, 2014; Gabriel Resources Ltd., 2015, p. 20; Marrez, 2015, p. 2; Velicu, 2015, p. 147).

The NAMR is the authority that applies the provisions of the mining and petroleum laws (as amended and supplemented), and manages the oil, gas, and mineral resources of the country. Table 2 is a list of the major mineral-related industrial facilities operating in Romania in 2014 (National Agency for Mineral Resources, 2016d).

## Mineral Trade

In 2014, total imports increased by 5.9%, reflecting an increase in domestic consumption. Approximately 75% of imports came

from the EU. In 2014, the value of imported goods amounted to an estimated \$78 billion,<sup>1</sup> of which base metals accounted for approximately \$5 billion; crude petroleum and natural gas, \$5 billion; fabricated metal products (except machinery and equipment), \$3.5 billion; coke and refined petroleum products, \$2.1 billion; other nonmetallic mineral products, \$1 billion; metal ores, \$275 million; other mining and quarrying products, \$110 million; and coal and lignite, \$86 million. Base metals and articles thereof constituted 10.8% of total imports, and mineral products constituted 9.9% (National Institute of Statistics, 2014b, p. 7, 44, 45; World Bank Group, 2015, p. 2).

Romania's exports increased by 5.8% in 2014; approximately 70% of total exports went to the EU. In 2014, the value of exported goods amounted to an estimated \$70 billion, of which basic metals accounted for approximately \$3.8 billion; coke and refined petroleum products, \$3.6 billion; fabricated metal products (except machinery and equipment), \$2.1 billion; other nonmetallic mineral products, \$432 million; metal ores, \$72 million; other mining and quarrying products, \$52 million; crude petroleum and natural gas, \$34 million; and coal and lignite, \$0.8 million. Base metals and articles thereof constituted 9% of total exports, and mineral products constituted 6.2%. Romania was a net importer of most of these mineral-related products, and showed a trade deficit of \$7 billion in the cited categories in 2014 (National Institute of Statistics, 2014b, p. 5, 42, 43; World Bank Group, 2015, p. 2).

Romania's leading import partners in 2014 were, in terms of value, Germany (which supplied 19.1% of Romania's total imports), Italy (10.8%), Hungary (7.9%), France (5.7%), and Poland (4.6%). The country's leading export partners were, in terms of value, Germany (which received 19.3% of Romania's total exports), Italy (11.9%), France (6.8%), Hungary (5.1%), and Turkey (4.5%) (National Institute of Statistics, 2014b, p. 7, 9).

## Commodity Review

### Metals

**Bauxite and Alumina and Aluminum.**—Alum S.A., which was owned by Vimetco N.V., was the only alumina refinery in Romania. In 2014, the company's alumina production decreased by 7% to 363,000 metric tons (t) from 391,000 t in 2013. During the same period, bauxite production, which was provided by Sierra Mineral Holdings 1 Ltd. (a subsidiary of Vimetco in Sierra Leone), nearly doubled to 1.2 million metric tons (Mt), from the 616,000 t produced in 2013. In 2014, primary aluminum produced by Alro S.A. (a subsidiary of Vimetco in Slatina) increased by 5% to 263,000 t from 250,000 t in 2013. Processed aluminum production at Alro increased to 98,600 t in 2014 from 93,600 t in 2013. During 2014, Alro continued its investment and technological updating programs, including reconditioning of electrolytic pots and opening new aluminum scrap processing facilities. In addition, an investment of \$6 million was finalized in 2014 for the acquisition of a new high-performance extrusion press (table 1; Vimetco N.V., 2015, p. 5, 14–16, 113).

<sup>1</sup>Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an average rate of EUR0.75=US\$1.00 for 2014 and EUR0.68=US\$1.00 for 2013.

**Copper.**—The Metaliferi Mountains of northwestern Romania contain a dense concentration of mineral deposits related to Miocene-age magmatism. Copper mineralization occurs in the region in porphyry-copper-type systems; other mineralization includes gold, silver, and base metals in veins, breccia pipes, and replacement bodies. The largest deposit is the Rosia Poieni porphyry copper deposit in Abrud, which hosts the Rosia Poieni Mine (the largest copper mine in Romania). Estimated reserves at Rosia Poieni were 900 Mt of copper ore and accounted for 60% of the copper reserves in the country. In July 2014, the Government granted an environmental permit to S.C. Cupru Min S.A. Abrud, which was the state-owned operator of the mine, to exploit the copper deposits at the site. As of late 2014, the company had 531 employees and had been unsuccessful in its efforts to privatize (Alba24.ro, 2014; Cioaca and others, 2014, p. 24).

**Gold.**—In June 2014, Romania's Lower House of Parliament rejected proposed legislation that would have allowed Gabriel Resources Ltd. of Canada to proceed with the Rosia Montana open pit gold mine project. The decision was prompted by continued opposition from environmental and community groups over concerns regarding the preservation of historical sites and potential environmental damage. The project was wholly owned by Rosia Montana Gold Corp. (RMGC), in which Gabriel Resources had an 80.69% interest and the Government (through Minvest, a state-owned mining company) held the remaining 19.31% interest. The Parliament had also rejected proposed changes to general mining legislation that would have helped the project. Earlier in the year, Gabriel Resources laid off nearly 400 employees, or 80% of the workforce, at RMGC (Ilie, 2014; Gabriel Resources Ltd., 2015, p. 24–25).

Other gold projects in Romania included the Rovina Valley gold and copper project led by Carpathian Gold Inc. of Canada, which was awaiting approval of a mining license from the Government, and the Certej project, which was owned by Deva Gold S.A. (a joint venture between Eldorado Gold Corp. of Canada and state-owned Minvest Deva). In April 2014, Eldorado Gold released a National Instrument 43–101 technical report on the project, which included the findings of an updated prefeasibility study. The company spent \$12.2 million on the project in 2014, primarily on geologic and metallurgical testing, site preparation, and engineering studies (Eldorado Gold Corp., 2015; Jamasmie, 2015; Mining Watch, 2015).

**Iron and Steel.**—The production levels of crude steel and finished steel products in Romania changed little in 2014 compared with those of 2013. Crude steel production increased by 6% to 3.16 Mt in 2014 from 2.99 Mt in 2013, which was the lowest level since 2010 (table 1).

Invest Nikarom SRL restarted production in August 2014 at the Laminorul SA steel plant in Braila, which had been closed in 2012 when it was controlled by Mechel OAO of Russia. Invest Nikarom had purchased all five of Mechel's Romanian steel plants in 2013 and also owned Ductil Steel Buzau, Ductil Steel Otelu Rosu, Mechel Campia Turzii, and Mechel Targoviste, although Mechel still retained some indirect control over the factories because of the large debt still owed to Mechel. Laminorul Braila announced that it would hire 234 people for the first production run of 10,000 t of steel products for

shipyards and the construction industry. In 2014, the number of people employed in the steel industry was 19,300 (Romania-Insider, 2014; Bernovici, 2015; Ministerul Economiei, Comertului si Turismului, 2015, p. 9).

In late 2014, ArcelorMittal Galati, which was Romania's largest steel plant in terms of production, announced that it expected to increase its output in 2015 by 15%, to more than 2 million metric tons per year (Mt/yr) from 1.6 Mt/yr in 2014. The production increase would follow major technical upgrades to its production line made possible by a \$120 million investment program that started in 2011 and included upgrades to the only currently operating blast furnace at the plant and the steel melting shop (Chirileasa, 2014b).

### *Industrial Minerals*

**Cement.**—In Romania, the construction industry was in decline in 2014 owing in part to decreased investment in infrastructure, although investment in residential and nonresidential building projects increased by 32.6% and 16.6%, respectively. Overall, cement consumption increased by 5.6% in 2014 compared to that of 2013. Holcim Ltd. of Switzerland operated a cement production facility in Romania through its subsidiary Holcim (Romania) S.A. Despite a slow recovery in most European economies, Holcim (Romania) reported significant increases in 2014 owing to large projects in the Bucharest area. As of 2014, Holcim (Romania) had 792 employees and a production capacity of 6.1 Mt/yr.

HeidelbergCement AG of Germany owned cement production facilities in Romania through its subsidiary Carpatcement Holding S.A. At the company's Fieni plant, construction was started on an installation to generate electricity from kiln waste heat, which was expected to come online in the second half of 2015. HeidelbergCement's production capacity in 2014 was about 6.0 Mt/yr.

Lafarge S.A. of France, through its subsidiary Lafarge Ciment (Romania) S.A., operated two cement plants and one grinding plant in Romania, which had a combined cement production capacity of 4.9 Mt/yr and a 31% market share in the country. Lafarge's cement output increased by 2% following a 16% decrease in 2013 owing to increased demand in the residential sector. A proposed merger between Lafarge and Holcim was announced in April 2014; the transaction was expected to be completed in July 2015. As part of the merger, Lafarge would sell its assets in Romania (Chirileasa, 2014a; HeidelbergCement AG, 2015a; 2015b, p. 63, 290; Holcim Ltd., 2015, p. 88; Lafarge S.A., 2015, p. 29, 57).

### *Mineral Fuels and Related Materials*

**Coal.**—Romania ranked seventh among the coal-producing EU countries, even though domestic production had decreased in recent years. In 2014, hard (bituminous) coal production decreased by 17% to 1.5 Mt from 1.8 Mt in 2013. Lignite production decreased by 4% to 22.0 Mt in 2014 from 22.9 Mt in 2013. Romania's hard coal resources were estimated to be 2.2 billion metric tons (Gt), of which 592 Mt was commercially exploitable within current lease areas. Most of

the hard coal deposits are located in the Jiu Valley coal basin of southwestern Romania. Lignite resources were estimated to be 11.6 Gt, with proven reserves of 986 Mt. Most lignite deposits (about 95%) are located in the Oltenia mining basin, also in southwestern Romania. More than 80% of these deposits could be exploited by open pit methods. It was estimated that the leased lignite reserves could be exploited for another 15 years at a production level of about 30 Mt/yr, and hard coal deposits could be exploited for 36 years at the current production level of about 1.5 Mt/yr. The production capacity for lignite was about 33 Mt/yr, whereas domestic consumption was only about 22 to 23 Mt/yr, resulting in a production overcapacity of about 10 Mt/yr. In contrast, hard coal production did not meet domestic demand, and Romania imported approximately 1.1 Mt of coal in 2014. Romania's entire output of hard coal and lignite was used for heat and power generation. In 2013, coal-fired powerplants provided 27.25% of the country's total energy needs (National Institute of Statistics, 2014a, p. 84; European Association for Coal and Lignite, 2015, p. 20; Stanciu, 2015).

Restructuring of the hard coal sector, which was completed at the end of 2012, created two operating units—The National Society for Mine Closure Jiu Valley, which would oversee the closure of three unprofitable mines in the valley by 2018 and result in the loss of 2,400 jobs; and The Mining Division of the Hunedoara Energy Complex, which would continue to operate the remaining four coal mines and was expected to be the only hard coal producer in Romania after 2018. Complexul Energetic Oltenia (Oltenia Energy Complex) was Romania's leading producer of coal-based energy and was responsible for 99% of the country's lignite production. In 2014, the company had 19,000 employees (European Association for Coal and Lignite, 2015, p. 14; Stanciu, 2015).

**Petroleum.**—Romania had the fourth-largest crude oil reserves in Europe, with 600 million barrels (Mbbbl) of proved reserves as of January 1, 2014. The country had the fifth-largest natural gas reserves in Europe; proven reserves were estimated to be 105 billion cubic meters as of January 1, 2014. In 2014, Romania produced 29.1 Mbbbl of crude oil and about 11 billion cubic meters of natural gas. The country imported 50 Mbbbl of crude oil and 556 million cubic meters of natural gas in 2014 (National Institute of Statistics, 2014a, p. 84; U.S. Energy Information Administration, 2014).

S.C. OMV Petrom S.A. (Petrom) was the largest integrated oil and gas group in southeastern Europe; it operated 239 commercial oil and gas fields in Romania. Its business segments included crude oil and natural gas exploration and production, power generation, refining, and marketing. OMV Aktiengesellschaft of Austria owned 51% of OMV Petrom. In 2014, Petrom produced 29 Mbbbl of crude oil in Romania, which was the country's entire crude oil production. The company also produced 5.29 billion cubic meters of natural gas, which was approximately 50% of the country's natural gas production. Offshore production accounted for approximately 7% of oil production and 26% of natural gas production. Petrom invested in new technologies and secondary recovery techniques to redevelop mature fields to improve oil and gas recovery and to stabilize declining production rates. In early 2014, a workover program significantly contributed to the stabilization and

gradual increase in hydrocarbon production during the second half of the year. Crude oil recovered through enhanced recovery techniques accounted for approximately 25% of total domestic oil production in 2014. Crude oil produced by OMV Petrom was refined primarily at the company's Petrobrazi refinery, which processed 28 Mbbbl of crude oil in 2014 (the same amount as in 2013). The refinery utilization rate decreased slightly in 2014 to 89% compared with 90% in 2013 owing to a 1-month planned shutdown to complete a \$450 million modernization program. As of yearend 2014, Petrom's proven reserves in Romania were estimated to be 355.6 Mbbbl of crude oil and 48.3 billion cubic meters of natural gas. In 2014, Petrom announced two important discoveries. The Marina 1 exploration well in the Istria block encountered a new oil reservoir, which was under assessment. The Padina Nord 1 exploration well (a joint venture with Hunt Oil), identified a new oil and gas field in Buzau County, which was the largest oil and gas discovery in the Moesian platform within the past 30 years. The company also continued exploration work in the Neptun Block in the Black Sea. In 2014, OMV Petrom employed 16,948 people, which was a 14% decrease from the number employed in 2013 (S.C. OMV Petrom S.A., 2015, p. iii, 5, 9, 11, 31, 32, 35, 39, 40, 51).

**Uranium.**—Romania was one of only two EU countries currently mining uranium—the other was the Czech Republic. In 2014, all Romanian uranium production was from a mine in Suceava County that exploited the Crucea and Botusana deposits. The mine was operated by state-owned Compania Nationala a Uraniuului (CNU). The mine had been in operation for nearly 30 years, and the ore was expected to be depleted and the mine closed in 2015. Looking ahead, the CNU was planning to develop the Tulghes-Grinties deposit in the East Carpathian area. The Government planned to invest about \$130 million in developing the deposit and expected mine output to be 124,000 metric tons per year during a 9-year mine life. The CNU also considered building a new uranium processing and refinement plant in the area using advanced technology. Another uranium deposit was located in the Highis-Drocea Mountains in the west (Stroe, 2013; Radut, 2014; World Nuclear Association, 2014).

The Cernavoda nuclear powerplant, which is located in southeastern Romania, had two operating reactors identified as Units 1 and 2; together, these reactors generated almost 20% of the country's electricity. Additionally, three partially completed reactors were located on the same site. The plant was operated by Societatea Nationala Nuclearelectrica, which was the state nuclear power corporation. In July 2014, a binding and exclusive cooperation agreement was signed between China Nuclear Power Engineering Co. (CNPEC), which was a subsidiary of China General Nuclear Power Group (CGN), and Candu Energy Inc. of Canada, to complete the construction of reactor Units 3 and 4 at the powerplant. The agreement followed on the November 2013 letter of intent signed by CGN and Nuclearelectrica for investment in and development of Cernavoda reactor Units 3 and 4. In mid-2014, the Industrial and Commercial Bank of China agreed to finance the \$8.7 billion project. The new reactors were expected to have operating lives of 30 years with the possibility of a 25-year extension. The first of the new reactors, Unit 3, was expected to be operational in

2023, and Unit 4 was expected to be operational in 2024. Each of these two reactors would have 720 megawatts of electricity-generating capacity (World Nuclear Association, 2014; Euratom Supply Agency, 2015, p. 11).

## Outlook

Romania's economic growth is expected to remain robust in 2015 and 2016. The economy grew by 2.8% in 2014, and real GDP growth is projected to be about 3.4% in 2015 and 3.9% in 2016, driven mainly by the recovery in domestic consumption and strong exports. Performance in the mineral and mining sectors is expected to remain mixed. Steel production, while significantly below the pre-2009 peak levels, was relatively stable during the past 3 years at about 3 Mt. The Invest Nikarom steel plants were undergoing reorganization in 2014 and had limited production during the year. Despite potentially significant gold and silver production and the creation of associated jobs, the lack of public support and of Government progress on favorable mining legislation is likely to hinder growth in this sector in the long term. In 2015, the cement market, and construction activity in general, could increase by an estimated 3% to 5% compared with that of 2014 if the European Commission approves the Transportation General Master Plan in 2015 (Cembureau, 2015, p. 20; International Monetary Fund, 2015; S.C. OMV Petrom S.A., 2015, p. 26).

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

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2010	2011	2012	2013	2014
<b>METALS</b>					
Alumina, calcined, gross weight	450,000 <sup>e</sup>	520,000 <sup>e</sup>	414,000	391,000	363,000
Aluminum:					
Primary <sup>e</sup>	240,000	260,000 <sup>r</sup>	249,000 <sup>r</sup>	250,000	263,000
Secondary	18,282	23,970	16,955	14,531	14,500 <sup>e</sup>
Total <sup>e</sup>	258,000	284,000 <sup>r</sup>	266,000 <sup>r</sup>	265,000	278,000
Copper:					
Mine output, Cu content of concentrate <sup>e</sup>	5,000	6,500	6,300	6,800	7,000
Metal, refined:					
Primary	3,000	--	--	--	--
Secondary <sup>e</sup>	1,000	--	--	--	--
Total	4,000	--	--	--	--
Gold, mine output, Au content <sup>e</sup>	400	--	--	--	--
Iron and steel:					
Metal:					
Pig iron	1,726	1,595	1,580	1,330	1,631
Ferroalloys, electric furnace <sup>e</sup> :					
Ferrochromium	14,000	--	--	--	--
Silicomanganese	20,000	31,000	17,000	--	--
Total	34,000	31,000	17,000	--	--
Steel, crude	3,721 <sup>r</sup>	3,828 <sup>r</sup>	3,292	2,985	3,158
Finished products:					
Pipes and tubes	678	799	781	664	650 <sup>e</sup>
Rolled products	3,762	4,061	3,472	2,845	2,800 <sup>e</sup>
Lead, refined:					
Primary	11,000	6,500	1,500 <sup>e</sup>	1,100 <sup>e</sup>	--
Secondary	4,000	7,000	13,200 <sup>r</sup>	14,000	12,000 <sup>e</sup>
Total	15,000	13,500	14,700 <sup>r,e</sup>	15,100 <sup>e</sup>	12,000 <sup>e</sup>
Manganese, ore: <sup>e</sup>					
Gross weight	--	5	5 <sup>r</sup>	--	--
Mn content	--	1	1	--	--
Zinc metal, refined, primary and secondary	200	220	330	220	220 <sup>e</sup>
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic	7,000	7,846	8,223	7,451	7,850 <sup>e</sup>
Clays:					
Bentonite, marketable	20,000 <sup>e</sup>	18,008	18,127	21,051	22,000
Kaolin, marketable	500	--	--	--	--
Feldspar <sup>e</sup>	5,500	2,500	6,500	6,800	6,000
Fluorspar <sup>e</sup>	15,000	--	--	--	--
Graphite	7,000	--	--	--	--
Gypsum	600 <sup>e</sup>	834	765	676	807
Lime	1,700 <sup>e</sup>	1,679	1,708	1,698	1,700
Nitrogen, N content of ammonia <sup>e</sup>	80	160	115	85	85
Salt: <sup>e</sup>					
Rock	40	40	40	40	40
Other	2,400	2,500	2,200	2,200 <sup>r</sup>	2,200
Total	2,440	2,540	2,240	2,240 <sup>r</sup>	2,240
Sand and gravel	2,700 <sup>e</sup>	5,873	5,015	3,244	6,422
Sodium compounds:					
Caustic soda <sup>e</sup>	300	540	292 <sup>3</sup>	171 <sup>3</sup>	184
Soda ash, 100% Na <sub>2</sub> CO <sub>3</sub> basis	350	420	430 <sup>e</sup>	430 <sup>e</sup>	425 <sup>e</sup>
Sulfuric acid <sup>e</sup>	383	2,100	410	150	150
Talc <sup>e</sup>	307	100	1	-- <sup>3</sup>	--

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2010	2011	2012	2013	2014
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal, bituminous and lignite	30,000 <sup>e</sup>	35,000 <sup>e</sup>	33,902	24,723	23,556
Gas, natural, gross:					
Associated	1,161	1,166	1,150	1,161	1,200 <sup>e</sup>
Nonassociated	9,694	9,733	9,783	9,810	10,200 <sup>e</sup>
Total	10,855	10,899	10,933	10,971	11,439
Petroleum: <sup>e</sup>					
Crude <sup>4</sup>	33,000	31,000	28,800	29,700	29,100
Refinery products <sup>5</sup>	95,000	79,000	78,500	82,600	76,700
Uranium, U <sub>3</sub> O <sub>8</sub> content <sup>e</sup>	90	90	106	90	90

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>f</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through February 10, 2016.

<sup>2</sup>In addition to the commodities listed, a variety of construction materials were produced, and antimony, asbestos, bismuth, and pyrite may have been produced; however, available information was inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>Figures converted to barrels from production in metric tons, which was reported as the following: 2010—4,490,000 (estimate); 2011—4,000,000 (estimate); 2012—3,860,000; 2013—3,984,000; and 2014—3,903,000.

<sup>5</sup>Figures converted to barrels from production in metric tons, which was reported as the following: 2010—12,000,000 (estimate); 2011—10,000,000 (estimate); 2012—9,883,000; 2013—10,402,000; and 2014—9,674,000.

TABLE 2  
ROMANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(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., 86.98%)	Plant at Tulcea, Danube Delta	600
Aluminum:			
Primary	Alro S.A. (Vimetco N.V., 87.50%)	Slatina, 120 kilometers west of Bucharest	265
Secondary	Neferal S.A. (member of Metanef Group)	Bucharest	NA
Cement	Holcim (Romania) S.A. (Holcim Ltd., 99.7%)	Plants at Alesd, Campulung, and Turda	6,100
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	1,500
Do.	do.	Plant at Deva, western Romania	1,500
Do.	Lafarge Ciment S.A. (Lafarge S.A., 98.56%)	Plants at Hoghiz and Medgidia	4,900
Coal:			
Bituminous	Complexul Energetic Hunedoara (Government)	7 mines located near Petrosani	3,500 °
Lignite	Complexul Energetic Oltenia (Government)	Tismana I-II, Garla-Rovinari Est, and Pinoasa opencast mines at Rovinari	8,000 °
Do.	do.	Rosia, Pesteana Nord, and Pesteana Sud-Udari opencast mines at Balteni	6,900 °
Do.	do.	Udari underground mine at Udari	300 °
Do.	do.	Jilt Sud and Jilt Nord opencast mines at Matasari	7,000 °
Do.	do.	Dragotesti underground mine at Matasari	600 °
Do.	do.	Lupoaia and Rosiuta opencast mines at Motru	5,000 °
Do.	do.	Plostina, Horasti, and Lupoaia underground mines at Motru	1,600 °
Do.	do.	Seciuri, Oltet, Berbesti-Vest, and Panga opencast mines near Berbesti	2,000 °
Do.	do.	Albeni underground mine at Bolbocesti	555 °
Do.	do.	Husnicioara-Vest opencast mine near Drobeta Turnu Severin	2,500 °
Do.	do.	Zegujani underground mine about 18 kilometers northeast of Drobeta Turnu Severin	600 °
Do.	Societatea Nationala a Carbului 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 °
Do.	SC Complexul Energetic Craiova SA (Ministry of Economy, 73%)	Prigaria Mine	1,000 °
Copper, ore	S.C. Cupru Min S.A., REMIN S.A., Compania Nationala Minvest, and Moldomin S.A. (Government, 100%)	Borsa Balan, Rosia Poieni Mine; Moldova Noua	9,000
Iron ore	Compania Nationala Minvest SA (Government)	Mining complex at Hunedoara, in 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 2014

(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. [Ministry of Economy, 70%; Fondul Proprietatea, 14.99%; free float (public investors), 15%]	Operated more than 150 reservoirs in Moldavia, Muntenia, and Transylvania regions	5,500 <sup>c</sup>
Do.	do.	S.C. OMV Petrom S.A. [OMV AG, 51.01%; Ministry of Economy, 20.64%; Property Fund S.A. (Government), 18.99%]	Approximately 239 commercial oil and gas fields located in southern and western Romania and offshore in the Black Sea	5,500 <sup>c</sup>
<b>Petroleum:</b>				
Crude		do.	do.	5,000 <sup>c</sup>
Refined		do.	Arpechim refinery, just south of Ploiesti	3,500
Do.		do.	Petrobrazi refinery, just south of Ploiesti	4,500
Do.		Rompetrol Rafinarie S.A. (Rompetrol Group)	Refinery at Navodari	4,500
Do.		Vega Ploiesti Refinery (Rompetrol Group)	Refinery just north of Ploiesti	500
Do.		S.C. RAFO S.A.	Refinery at Onesti	3,000 <sup>c</sup>
Do.		S.C. Petrotel S.A. (OAO Lukoil)	Refinery just east of Ploiesti	2,400
Do.		Astra Refinery	Refinery in Ploiesti	700
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, 99.7%)	Galati, north of Braila	6,000
Do.		ArcelorMittal Hunedoara (ArcelorMittal, 96.4%)	Hunedoara, west-central Romania, near Calan	800
Do.		S.C. Silcotub S.A. (Tenaris S.A., 100%)	Calarasi, southeastern Romania	400
Do.		S.C. TMK-Resita S.A. (OAO TMK, 100%)	Resita, southwestern Romania	450
Do.		Mechel Targoviste S.A. (Invest Nikarom SRL)	Targoviste	630 <sup>c</sup>
Do.		Mechel Campia Turzii S.A. (Invest Nikarom SRL)	Campia Turzii, northwestern Romania	385 <sup>1</sup>
Do.		Mechel Laminorul S.A. (Invest Nikarom SRL)	Braila, southeastern Romania	380
Do.		Ductil Steel S.A. (Invest Nikarom SRL)	Otelu Rosu, southwestern Romania	300 <sup>1</sup>
Do.		do.	Buzau, southeastern Romania	NA
Uranium, U <sub>3</sub> O <sub>8</sub> content	metric tons	Compania Nationala a Uraniului (Government)	Crucea and Botusana deposits, Suceava County	110 <sup>c</sup>
Zinc, ore		Compania Nationala REMIN S.A. (Government)	Vetel Mine, near Deva	45

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

<sup>1</sup>Production suspended since 2013.