



# 2014 Minerals Yearbook

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## SPAIN

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# THE MINERAL INDUSTRY OF SPAIN

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The gross domestic product (GDP) of Spain, measured at market prices, was \$1.39 trillion<sup>1</sup> in 2014 compared with \$1.38 trillion in 2013, for a nominal rate of growth of 1%. The country also reported an unemployment rate of 24.4% and a workforce of 22.95 million, with the majority employed in the services, construction, and industrial sectors. Sixty-eight percent of Spain's GDP was generated by the services sector, whereas the industrial sector generated 15.5%; the construction sector, 5%; the agricultural sector, 2.3%; and various other economic activities in the economy, the remaining 9.2%. The output of the industrial sector recorded a 1.2% increase in 2014 compared with the previous year, whereas that of the construction sector decreased by 2.1%. The country's debt increased by 7% compared with that of 2013, to \$1.38 trillion, or the equivalent of about 101% of the GDP. The Government's budget deficit amounted to 4.4% of the GDP and was the fifth largest deficit among the countries of the European Union (EU) (Banco de España, 2016a, b; Instituto Nacional de Estadística, 2016a, p. 239, 242, 317, 318; U.S. Central Intelligence Agency, 2016).

Spain is endowed with metallic mineral resources, such as copper, gold, iron, lead, nickel, silver, tungsten, and zinc, and nonmetallic resources, such as clays, diatomite, feldspar (sixth-ranked world producer), fluorspar (sixth-ranked world producer), gypsum, salt, strontium (second-ranked world producer), and talc. In 2014, Spain was ranked 16th among the world's producers of crude steel, accounting for about 0.8% of world production (table 1; World Steel Association, 2015, p. 9; McRae, 2016; Ober, 2016; Tanner, 2016).

## Minerals in the National Economy

In 2014, the output of the extractive industries sector (which includes the mining sector, as defined by the Spanish statistical services) remained at about the same level as in 2013, slowing a decreasing production trend that had seen the output of the sector decrease by 46.7% since 2010. In comparison, Spain's manufacturing sector increased production in 2014 by 2%, reversing an average decrease in sector output of 8.3% since 2010. Spain employed 217,113 people in its extractive industries (including energy, water, and sewage); 278,659 people in metallurgy and the manufacture of metallic products (except machinery); and 85,695 people in the extraction and manufacture of nonmetallic mineral products. In 2014, Spain produced energy from the following sources [in thousand metric tons of oil equivalent (ktoe)]: coal (1,577), crude oil (311), and natural gas (21) as well as nuclear power sources (14,933) and renewable energy sources, including wind, solar, and geothermal sources (7,617), hydroelectric sources (3,361), and biomass,

biocarburants, and residuals (5,804) (Instituto Nacional de Estadística, 2016a, p. 405, 411, 423).

## Government Policies and Programs

Spain's mineral and energy industries are regulated by the Mining Law of July 21, 1973, and the Hydrocarbon Law of October 7, 1998, respectively. The Ministerio de Industria, Energía y Turismo (MIET) was created by the Royal Decree of February 10, 2012, and is responsible for proposing and implementing Government policies on energy, telecommunications, tourism, and industrial development. The Secretaría de Estado de Energía, which is a subunit of the MIET, is responsible for the development of energy and mining policy. The Instituto Geológico y Minero de España (IGME), which is a subunit of the Ministerio de Economía y Competitividad, is the principal Government mineral-resource agency. IGME was created by the Royal Decree of July 12, 1849. IGME is responsible for the research of mineral raw materials by studying and characterizing rocks and mineral deposits of potential economic interest. IGME also contributes to environmental mine planning, recovery, and remediation. Sociedad Estatal de Participaciones Industriales (SEPI), which is a Government-owned holding company that includes mining, was created by Law 20 of June 5, 2006. In the mineral sector, SEPI owned 100% of Hulleras del Norte, S.A. (HUNOSA), a coal producer; 60% of Enusa Industrias Avanzadas, S.A. (ENUSA), a nuclear energy producer; 20% of Red Eléctrica Corporación, S.A. (RECSA), an electricity producer; and 5% of Enagás, S.A. (ENAGAS), a natural gas producer (Instituto Geológico y Minero de España, 2015).

## Production

Mineral production data for 2014 were limited; therefore, the majority of the 2014 mineral commodity production data in table 1 have been estimated. In 2014, primary blister copper production increased by 34% to 285,000 metric tons (t); refined primary copper production, by 28% to 274,000 t; mined lead production, by 17% to 7,000 t; and mined zinc production, by 9% to 38,000 t. Natural gas production decreased by 60%, estimated secondary blister copper production decreased by 27% to 9,000 t, and crude petroleum production decreased by 12% (table 1).

## Structure of the Mineral Industry

Spain's mineral industry was composed of domestic private companies and international companies that had direct investments in Spanish companies or had subsidiaries in Spain. Repsol YPF, S.A. was the leading mineral fuels company in Spain. Other significant companies were

<sup>1</sup>Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at an average rate of EUR0.7489=US\$1.00 for 2014 and EUR0.73=US\$1.00 for 2013.

Alcoa Inespal S.A. (AISA), which was a subsidiary of Alcoa Inc. of the United States (Alcoa) and the only producer of aluminum in the country; Alumina Española S.A. [a joint venture of Alcoa (60%) and Alumina Ltd. of Australia (40%)], which owned and operated the San Ciprian alumina refinery; and Orvana Minerals Corp. (OMC) of Canada, which owned Kinbauri España, S.L.U. (Kinbauri), which, in turn, owned and operated El Valle-Boinás and Carlés (EVBC) underground gold-copper-silver mines in the Rio Narcea gold belt of northern Spain. Table 2 is a list of major mineral industry facilities.

## Mineral Trade

The total value of Spain's exports was about \$321.2 billion in 2014 compared with \$342.7 billion in 2013. The total value of Spain's imports was about \$354.6 billion in 2014 compared with \$344.4 billion in 2013, and Spain had a net trade deficit of \$33.3 billion in 2014. Exports of mineral products amounted to \$27 billion in 2014 compared with \$24.6 billion in 2013, and imports of mineral products amounted to \$78.5 billion in 2014 compared with \$80.1 billion in 2013. Exports of metals and metal manufactures amounted to \$27.8 billion in 2014 compared with \$25.8 billion in the previous year, whereas imports of these products amounted to \$22.9 billion in 2014 and \$21 billion in 2013. Stone manufactures, cement, and ceramic exports from Spain amounted to \$7.2 billion in 2014, whereas in 2013 they totaled slightly more than \$7 billion; imports of stone manufactures, cement, and ceramic products amounted to \$2.8 billion in 2014 and \$2.3 billion in 2013 (Instituto Nacional de Estadística, 2016a, p. 353–354; 2016b).

Spain exported \$214 billion worth of goods and services to Europe in 2014, which amounted to 67% of the country's total exports, compared with \$201 billion in 2013, which was 66% of its total exports. The country imported \$205 billion worth of goods and services from Europe in 2014, which amounted to 58% of Spain's total imports compared with \$183.4 billion and 56% of all imports in 2013. Spain's exports to Africa in 2014 amounted to \$21.8 billion, which was 7% of its exports, compared with \$21.4 billion in 2013, which amounted to slightly more than 7%. Spain's imports from Africa amounted to \$37.6 billion in 2014, which was more than 10% of its total imports (Instituto Nacional de Estadística, 2016a, p. 355).

Spain's exports to the American continent (defined as North America and South America by Spain's statistical service), amounted to \$35.1 billion in 2014, or 11% of its total exports, compared with \$33.4 billion in 2013. Spain's imports from the American continent amounted to \$39.9 billion in 2014, or 11% of its total imports, compared with \$40 billion in the previous year. Spain exported \$37 billion worth of goods and services to Asia in 2014, or 12% of its total exports, compared with \$34.2 billion in 2013. The country imported \$68.7 billion worth of goods and services, or 19% of its total imports from Asia in 2014, compared with \$63 billion in 2013 (Instituto Nacional de Estadística, 2016a, p. 355).

United States exports to Spain were valued at about \$10.2 billion in 2014 compared with about \$10.2 billion in 2013. Petroleum products, including crude oil and fuel oil, accounted for about \$697 million; coal and related fuels, about

\$213 million; nonferrous metals, about \$170 million; natural gas liquids, about \$71 million; iron and steel products, about \$70 million; drilling and oilfield equipment, about \$66 million; nonmetallic minerals, \$2 million; nonmonetary gold, about \$275,000; and copper, \$43,000. Total United States imports from Spain were valued at about \$14.5 billion in 2014 compared with \$11.7 billion in 2013; these included about \$2.4 billion in fuel oil and petroleum products; about \$229 million in iron and steel mill products; \$97 million in drilling and oilfield equipment; about \$83 million in natural gas; about \$20 million in other nonferrous metals; about \$18.6 million in nonmonetary gold; about \$15.4 million in bauxite and aluminum; and about \$3 million in copper (U.S. Census Bureau, 2016a, b).

## Commodity Review

### Metals

**Aluminum and Bauxite and Alumina.**—Alcoa Inespal had smelters in Aviles in the Province of Asturias, La Coruña in the Province of Galicia, and San Ciprian in the Province of Lugo. Alcoa had 60% ownership in Alumina Española S.A. (with the remainder owned by Alumina Ltd. of Australia), which owned an alumina refinery also at San Ciprian. Alcoa planned to convert the alumina refinery in San Ciprian from fuel oil to natural gas, which, according to the company, would yield a \$20 per metric ton in savings by 2016; also, the company reported that three gas supply contracts were signed with Union Fenosa Gas S.A., Endesa S.A., and BP p.l.c., respectively. The San Ciprian alumina refinery had a nameplate capacity of 1,500,000 metric tons per year (t/yr) whereas the smelter had a nameplate capacity of 228,000 t/yr. The La Coruña and Aviles smelters had nameplate capacities of 87,000 t/yr and 93,000 t/yr, respectively (Alcoa Inc., 2016, p. 11–12, 24).

**Copper.**—Cobre Las Cruces S.A. [owned by First Quantum Minerals Ltd. (FQM) of Canada] owned and operated the Las Cruces copper mine and refinery located about 20 kilometers (km) northwest of the city of Seville. In 2014, the company installed three pressure filters to improve copper recovery, and it planned to install new cooling towers by 2016 to extend the life of these pressure filters and to further support their performance by helping to address the overall water balance in the processing plant. Las Cruces processed 1,539,000 t of ore in 2014 with a grade of 5.1% copper. The company reported that it had 90% copper recovery from the ore in 2014 (First Quantum Minerals Ltd., 2016, p. 20).

**Tungsten.**—Saloro SLU (a subsidiary of Ormonde Mining plc of Ireland) owned the Barruecopardo tungsten project, which was located near Salamanca in the Castilla y Leon region. In November 2014, Saloro reported that it had been granted the mining concession for the tungsten project, which covered an area of about 6 square kilometers (km<sup>2</sup>), including the Barruecopardo deposit and any potential strike extension. The concession was granted for 30 years with the potential to be renewed twice for 30 years each. Ormonde completed a feasibility study for the Barruecopardo project, which had the potential to be developed as an open pit mine and to produce about 227,000 t/yr of WO<sub>3</sub> during the first 9 years of

operation. Ormonde's environmental impact assessment of the Barruecopardo project was approved by the Salamanca Provincial authorities of the Castilla y Leon region in early 2014. In March, the company signed an offtake agreement with Noble Group of Singapore to sell all the tungsten concentrate production from Barruecopardo to Noble for the first 5 years of operation (Ormonde Mining plc, 2014).

### **Industrial Minerals**

**Cement.**—At least 10 companies were engaged in the production of cement in the country; these included Grupo Alfonso Gallardo (through its subsidiary A.G. Cementos Balboa S.A.), Votorantim Group of Brazil (through its subsidiary Cementos Cosmos S.A.), Cementos Mexicanos S.A.B. de C.V. of Mexico (CEMEX) (through its subsidiary CEMEX España Operaciones, S.L.U.), CRH plc of Ireland (through its subsidiary Cementos Lemona S.A.), Cementos Molins, S.A. (through its subsidiary Cementos Molins Industrial, S.A.U.), Cementos Portland Valderrivas Group (through its subsidiary Cementos Portland Valderrivas, S.A.), Corporación Masaveu (through its subsidiary Cementos Tudela Veguín, S.A.), Holcim Ltd. of Switzerland [Holcim (España) S.A.], Lafarge Cementos S.A. of France, and Italcementi Group of Italy (Sociedad Financiera, S.A.). These companies had a combined cement production capacity of 35.3 million metric tons per year (table 2).

**Potash.**—Iberpotash S.A., which was owned by Israel Chemical Ltd. (ICL) of Israel, was the only producer of potassium salts in the country. In 2014, two sites produced potash—the Cabanasses Mine in Suria and the Vilafruns Mine in Balsareny. By 2015, Iberpotash was expected to export about 80% of its production to Asia, Europe, North Africa, and South America. Iberpotash employed about 1,200 workers (Barcelona Centre Logistic, 2015; Iberpotash S.A., 2016).

**Strontium.**—Spain had two active celestite mines—the Aurora Mine, which is located in the Montevives in the region of Granada, and the Escuzar Mine, which is located about 24 km from the city of Granada and about 7 km from the Aurora Mine. The Aurora Mine was owned by Canteras Industriales S.L.; the company had previously stopped operations at the mine for 3 years but had resumed operations at the site in 2012. The Escuzar Mine was owned by Solvay Minerales S.A. (a subsidiary of the Solvay Group of Belgium). The Escuzar Mine produced celestite at a grade of 54% SrSO<sub>4</sub> and 0.5% barium. The final concentrate was 90% SrSO<sub>4</sub> and was exported principally to Germany to be processed at the Solvay plant in Bad Honningen.

The reserves of celestite (based only on those of the Escuzar plant, which were the only reserve data available) were about 1 million metric tons (Mt), and resources were 12 Mt. The estimated production of celestite concentrate for 2014 was about 91,000 t (Instituto Geológico y Minero de España, 2015, p. 1–7; Societe Chimique de France, 2015; Solvay Group, 2016).

### **Mineral Fuels and Related Materials**

**Crude Oil.**—Repsol YPF, S.A. owned the exploitation rights for 23 blocks, 13 of which were in the exploration stage and covered a surface area of 5,113 km<sup>2</sup> and 10 of

which were in the development and production stages and covered a surface area of 332 km<sup>2</sup>. Repsol produced a total of 1.3 million barrels (Mbbbl) of crude oil and 200 million cubic feet of natural gas in Spain, mostly in the areas of Casablanca, Lubina, and Montanazo in the Mediterranean Sea. Repsol reported that the company's proven crude petroleum reserves were 5.7 Mbbbl (U.S. Energy Information Administration, 2015; Repsol S.A., 2016, p. 52).

**Uranium.**—Berkeley Resources Ltd. of Australia, through its wholly owned subsidiary Berkeley España S.A., owned 100% interest in the Salamanca project, which included the Alameda, the Gambuta, and the Retortillo deposits. As of October 2014, total indicated and inferred mineral resources were estimated to be 37.3 Mt at an average grade of 367 parts per million (ppm) U<sub>3</sub>O<sub>8</sub> at Retortillo and 462 ppm at Alameda. A prefeasibility study for the Alameda and the Retortillo deposits indicated that the project had the potential to be developed as an open pit mine and to produce an average of about 1,225 t/yr of U<sub>3</sub>O<sub>8</sub> during the initial 11 years of mine operation (Berkeley Resources Ltd., 2014, p. 4–8; 2015).

### **Outlook**

Spain's GDP is expected to increase in 2015 and to continue its economic recovery from the recent protracted recession (Banco de España, 2015). Spain's power sector is likely to continue to be dependent on coal, crude oil, and nuclear power in the short term. Owing to the country's strong dependence on imported energy sources, the Government is expected to continue to support investments in renewable energy, such as biofuels, geothermal, solar, and wind. Spain's recently adopted national renewable energy action plan, which is in accordance with the EU renewable energy directive, specifies that renewable energy sources must account for at least 20% of member countries' final energy consumption, including a contribution of 10% to transportation, by 2020. Expansion at several of its mining projects and deposits is likely to attract foreign investment in the mineral sector and especially to increase interest in the nonfuel mineral sector.

### **References Cited**

- Alcoa Inc., 2016, Unlocking value—Annual report 2015: Pittsburgh, Pennsylvania, Alcoa Inc., 220 p. (Accessed March 8, 2017, at <https://www.sec.gov/Archives/edgar/data/4281/000119312514051516/d634164d10k.htm>.)
- Banco de España, 2015, Producto interior bruto [Gross interior product], in Indicadores económicos [Economic indicators]: Madrid, Spain, Banco de España, table 1.1. (Accessed December 31, 2015, at <http://www.bde.es/webbde/es/estadis/infoest/e0101.pdf>.)
- Banco de España, 2016a, Administraciones públicas—Deuda según el protocolo de déficit excesivo (PDE) [Public administrations—Debt according to the excessive deficit protocol (PDE)]: Madrid, Spain, Banco de España, table 6.2. (Accessed July 28, 2016, at <http://www.bde.es/webbde/es/estadis/infoest/e0602.pdf>.)
- Banco de España, 2016b, Estado—Recursos y empleos según la contabilidad nacional—España [State—Resources and jobs according to national accounts—Spain]: Madrid, Spain, Banco de España. (Accessed July 28, 2016, at <http://www.bde.es/webbde/es/estadis/infoest/e0603.pdf>.)

- Barcelona Centre Logistic [Catalunya], 2015, Iberpotash currently exports close to 80% of its products to Europe, Asia, and South America and is opening new markets in Africa and North America: Barcelona Centre Logistic, May 14. (Accessed September 9, 2016, at <http://www.bcncel.es/en/comunicacion/iberpotash-currently-exports-close-to-80-of-its-products-to-europe-asia-and-south-america-and-is-opening-new-markets-in-africa-and-north-america-n200>.)
- Berkeley Resources Ltd., 2014, Annual report 2014: London, United Kingdom, Berkeley Resources Ltd., October 24, 92 p.
- Berkeley Resources Ltd., 2015, Resources: London, United Kingdom, Berkeley Resources Ltd., October 7. (Accessed December 31, 2015, at <http://berkeleyenergia.com/mineral-resources/>.)
- First Quantum Minerals Ltd., 2016, Annual report: First Quantum Minerals Ltd. (Accessed September 10, 2016, at [http://s1.q4cdn.com/857957299/files/doc\\_downloads/2016/Annual-Report.pdf](http://s1.q4cdn.com/857957299/files/doc_downloads/2016/Annual-Report.pdf).)
- Iberpotash S.A., 2016, Creando valor [Creating value]: Iberpotash S.A. (Accessed September 8, 2016, at <http://www.icliberia.com/page/icl-iberia-suria-sallent>.)
- Instituto Geológico y Minero de España, 2015, Estroncio 2013—Geological Survey of Spain: Instituto Geológico y Minero de España. (Accessed September 7, 2016, at [http://www.igme.es/PanoramaMinero/actual/ESTRONCIO\\_13.pdf](http://www.igme.es/PanoramaMinero/actual/ESTRONCIO_13.pdf).)
- Instituto Nacional de Estadística, 2016a, Anuario estadístico de España 2016 [Statistical yearbook of Spain 2016]: Madrid, Spain, Instituto Nacional de Estadística, 617 p. (Accessed July 28, 2016, at [http://www.ine.es/produser/pubweb/anuarios\\_mnu.htm](http://www.ine.es/produser/pubweb/anuarios_mnu.htm).)
- Instituto Nacional de Estadística, 2016b, Foreign trade: Madrid, Spain, Instituto Nacional de Estadística. (Accessed July 27, 2016, at <http://www.ine.es/jaxi/tabla.do?type=pcaxisath=/t38/bme2/t42/p05/11/&file=1800012.px>.)
- McRae, M.E., 2016, Fluorspar: U.S. Geological Survey Mineral Commodity Summaries 2016, p. 62–63.
- Ober, J.A., 2016, Strontium: U.S. Geological Survey Mineral Commodity Summaries 2016, p. 160–161.
- Ormonde Mining plc, 2014, Barruecopardo—Granting of mining concession: Ormonde Mining plc press release, November 21. (Accessed December 12, 2015, at [http://ormondemining.com/uf/ORM%20Barruecopardo\\_Award%20of%20Mining%20Concession\\_20141121\\_Final.pdf](http://ormondemining.com/uf/ORM%20Barruecopardo_Award%20of%20Mining%20Concession_20141121_Final.pdf).)
- Repsol S.A., 2016, Annual report 2015: Repsol S.A. (Accessed September 10, 2016, via <http://www.informeannual.repsol.com/>.)
- Société Chimique de France, 2015, Sulfate de strontium: Société Chimique de France. (Accessed September 12, 2016, at <http://www.societechimiquedefrance.fr/extras/donnees/mine/SrSO4/cadSrSO4.htm>.)
- Solvay Group, 2016, Solvay España—Escuzar: Solvay Group. (Accessed September 9, 2016, at <http://www.solvay.es/es/solvay-in/locations/Escuzar.html>.)
- Tanner, A.O., 2016, Feldspar and nepheline syenite: U.S. Geological Survey Mineral Commodity Summaries 2016, p. 60–61.
- U.S. Census Bureau, 2016a, U.S. exports to Spain from 2006 to 2016 by 5-digit end-use code: U.S. Census Bureau. (Accessed August 4, 2016, at <http://www.census.gov/foreign-trade/statistics/product/enduse/exports/c4700.html>.)
- U.S. Census Bureau, 2016b, U.S. imports from Spain from 2004 to 2015 by 5-digit end-use code: U.S. Census Bureau. (Accessed August 4, 2016, at <http://www.census.gov/foreign-trade/statistics/product/enduse/imports/c4700.html>.)
- U.S. Energy Information Administration, 2015, Spain—Overview data for Spain: U.S. Energy Information Administration. (Accessed December 5, 2015, at <http://www.eia.gov/countries/country-data.cfm?fips=sp#ng>.)
- World Steel Association, 2015, World steel in figures 2015: World Steel Association. (Accessed December 31, 2015, at <http://www.worldsteel.org/dms/internetDocumentList/bookshop/2015/World-Steel-in-Figures-2015/document/World%20Steel%20in%20Figures%202015.pdf>.)

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

(Metric tons unless otherwise specified)

Commodity <sup>2,3</sup>	2010	2011	2012	2013	2014 <sup>c</sup>	
<b>METALS</b>						
<b>Aluminum:<sup>c</sup></b>						
Alumina	1,500,000	1,500,000	1,500,000	1,400,000	1,400,000	
Metal, primary	340,000	365,000	230,000	235,000 <sup>r</sup>	230,000	
<b>Copper:</b>						
Mine output, Cu content	50,830	75,057	99,884	107,000 <sup>r</sup>	106,000	
<b>Metal:<sup>c</sup></b>						
<b>Blister:</b>						
Primary	236,000	231,000	270,000	212,000	285,000	
Secondary	19,000	21,700	25,000	12,300	9,000	
Total	255,000	253,000	295,000	224,000	294,000	
<b>Refined:</b>						
Primary	236,000	226,000	251,000	214,000	274,000	
Secondary	83,000	86,000	88,000	68,000	73,000	
Total	319,000	312,000	339,000	282,000	347,000	
Gold, mine output, Au content	kilograms	--	529	1,529	1,800	
<b>Iron and steel, metal:<sup>4</sup></b>						
Pig iron	thousand metric tons	3,572	3,540	3,081	3,949	3,958 <sup>5</sup>
Crude steel	do.	16,343	15,504	13,639	13,740	14,249 <sup>5</sup>
<b>Ferroalloys, electric furnace:<sup>c</sup></b>						
Ferrosilicon		76,300	69,700	68,600	80,500	80,000
Silicon metal		31,500	34,800	27,200	24,200	24,000
<b>Lead:</b>						
Mine output, Pb content		379	7,813	3,763	6,000 <sup>c,r</sup>	7,000
Metal, refined, secondary <sup>c</sup>		165,000	177,000	160,000	157,000	166,000
Nickel, Ni content of concentrate		5,402	--	2,397	7,574	7,600
Silver, mine output, Ag content	kilograms	--	1,505	4,363	5,400	5,500
Tungsten, mine output, W content		240	497 <sup>6</sup>	542 <sup>6</sup>	510 <sup>6</sup>	500
<b>Zinc:</b>						
Mine output, Zn content		17,358	33,199	28,634	35,000 <sup>c,r</sup>	38,000
Metal, primary and secondary <sup>c</sup>		515,000	524,000	521,000	521,000	527,000
<b>INDUSTRIAL MINERALS</b>						
Barite, BaSO <sub>4</sub> content		2,000	--	--	--	--
Cement, hydraulic	thousand metric tons	26,217	22,178	15,939	13,600 <sup>r</sup>	13,500
<b>Clays:</b>						
Attapulgitite		27,841	26,021	23,537	25,439	25,400
Bentonite		157,001	110,731	96,605	112,887	112,900
Common	thousand metric tons	12,185	9,940	8,240	8,200 <sup>c</sup>	8,000
Kaolin, crude and washed		184,000	195,000	247,000	247,000 <sup>c</sup>	247,000
Refractory		117,000	139,000	78,000	78,000 <sup>c</sup>	78,000
Sepiolite		557,862	566,270	622,000	622,000 <sup>c</sup>	622,000
Diatomite and tripoli		64,346	54,000	60,777	53,713	53,700
Feldspar		691,894	662,418	530,238	602,908	603,000
<b>Fluorspar, CaF<sub>2</sub> content:</b>						
Acid-grade		123,562	106,294	98,374	86,115	86,000
Ceramic-grade		1,213	1,599	6,699	5,056	5,000
Metallurgical-grade		2,873	4,275	2,250	4,320	4,000
Total		127,648	112,168	107,323	95,491	95,000
Gypsum and anhydrite, crude	thousand metric tons	6,990	7,825	6,360	7,125	7,000
Magnesite, crude		195,893	239,131	274,551	275,000 <sup>c</sup>	275,000
Mica		4,034	3,609	3,518	3,462	3,400
Peat <sup>7</sup>		64,962	86,571	61,379	91,806	91,000
Potash, K <sub>2</sub> O equivalent		514,222	520,555	632,477	711,272	711,000
Pumice		432,364	303,462	194,655	195,000 <sup>c</sup>	195,000

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity <sup>2,3</sup>	2010	2011	2012	2013	2014 <sup>c</sup>	
<b>INDUSTRIAL MINERALS—Continued</b>						
<b>Salt:</b>						
Rock	thousand metric tons	3,116	3,096	2,786	2,902	2,900
Marine and other	do.	1,334	1,407	1,323	1,376	1,400
Sand and gravel, silica sand <sup>8</sup>	do.	5,057	5,073	3,416	3,400	3,400
<b>Sodium compounds, n.e.s.,<sup>9</sup> sulfate, natural:</b>						
Glauberite, Na <sub>2</sub> SO <sub>4</sub> content		1,146,000	1,049,000	1,276,130	1,329,514	1,300,000
Thenardite, Na <sub>2</sub> SO <sub>4</sub> content		135,000	107,000	175,726	234,353	235,000
<b>Stone:</b>						
Basalt	thousand metric tons	2,352	1,919	1,281	1,118	1,100
Chalk	do.	796	665	645	640	650
Dolomite	do.	13,210	10,942	6,926	6,900	7,000
Granite, ornamental	do.	17,208	14,066	10,032	9,200	9,000
Limestone	do.	160,920	129,610	89,332	89,300	90,000
Marble, ornamental	do.	1,452	2,104	1,754	1,382	1,300
Marl	do.	8,316	5,937	5,581	4,486	4,500
Ophite	do.	3,658	2,398	1,520	1,425	1,400
Phonolite	do.	1,018	612	619	620	600
Porphyry	do.	2,028	2,095	1,468	1,073	1,000
Quartz	do.	1,032	892	1,023	949	900
Quartzite	do.	3,017	3,018	2,082	2,058	2,000
Sandstone	do.	2,485	2,072	1,382	1,385	1,400
Slate	do.	365	416	336	377	400
<b>Strontium:</b>						
Celestite concentrate <sup>f</sup>		83,035	97,102	96,688	90,972	91,000
SrSO <sub>4</sub> content		74,732	87,392	87,019	84,950	88,000
Talc and steatite		51,897	12,000	8,857	9,000	9,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
<b>Coal, marketable:</b>						
Anthracite	thousand metric tons	5,990	4,265	3,910	2,543	2,500
Bituminous	do.	2,444	2,358	2,275	1,827	1,800
Total	do.	8,434	6,623	6,185	4,370	4,300
<b>Gas, natural</b>						
Produced	thousand cubic meters	62,707	53,040	64,751	56,664 <sup>r</sup>	22,656 <sup>s</sup>
<b>Petroleum:</b>						
Crude <sup>10</sup>	thousand 42-gallon barrels	905	744	1,069	2,665 <sup>r</sup>	2,336 <sup>s</sup>
<b>Refinery products:<sup>11</sup></b>						
Naphtha	do.	14,400	14,100	2,610	2,840	2,800
Gasoline, motor <sup>12</sup>	do.	112,000	111,000	61,600	63,700	64,000
Kerosene	do.	63,400	67,600	66,000	66,700	66,600
Petroleum coke	do.	6,460	8,800	17,000	18,900	19,000
Lubricants	do.	1,910	1,570	1,160	1,340	1,400
Total	do.	198,000	203,000	148,000	154,000	154,000

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

<sup>1</sup>Table includes data available through December 30, 2015.

<sup>2</sup>In addition to the mineral commodities listed, lime, sulfur, and refinery products, such as distillate fuel oil, jet fuel, liquefied petroleum gas, refinery fuel, and residual fuel oil were produced, but information was inadequate to make reliable estimates of output.

<sup>3</sup>Sources: Industria y Minería. Ministerio de Industria, Turismo y Comercio—Secretaría General de Energía. Instituto Geológico y Minero de España.

<sup>4</sup>Source: World Steel Association.

<sup>5</sup>Reported figure.

<sup>6</sup>Source: Almonty Industries Inc.

<sup>7</sup>Peat production was only used for agriculture.

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

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<sup>8</sup>Includes sand obtained as a byproduct of feldspar and kaolin production.

<sup>9</sup>Not elsewhere specified.

<sup>10</sup>Production has been converted to barrels from metric tons by using the U.S. Energy Information Administration factor of 7.440 barrels per metric ton (bbl/t) of crude petroleum.

<sup>11</sup>Production has been converted from metric tons to barrels by using the U.S. Energy Information Administration's factor of 5.51 barrels per metric ton (bbl/t) for petroleum coke; 8.53 bbl/t for gasoline; 7.73 bbl/t for kerosene; 7.00 bbl/t for lubricants; and 8.22 bbl/t for naphtha.

<sup>12</sup>Includes other gasolines.



TABLE 2  
SPAIN: 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 <sup>c</sup>
Alumina	Alumina Española, S.A. (Alcoa Inc., 60%, and Alumina Ltd., 40%)	Refinery at San Ciprian, Lugo Province	1,500
Aluminum	Alcoa Inespal S.A. (AISA) (Alcoa Inc., 100%)	Smelter at Aviles, Asturias Province	93
Do.	do.	Smelter at La Coruña, Galicia Province	87
Do.	do.	Smelter at San Ciprian, Lugo Province	228
Cement	A.G. Cementos Balboa S.A. (Grupo Alfonso Gallardo)	Alconera, Badajoz Province	1,600
Do.	Cementos Cosmos S.A. (Votorantim Group)	Pontevedra, Lugo Province	650
Do.	do.	Toral de los Vados, Leon Province	1,600
Do.	Cemex España Operaciones, S.L.U. (Cemex S.A.B. de C.V.)	Alcanar, Tarragona Province	2,185
Do.	do.	Alicante, Levante Province	1,400
Do.	do.	Buñol, Valencia Province	1,361
Do.	do.	Castillejo, Toledo Province	1,730
Do.	do.	Lloseta, Balearic Islands	700
Do.	do.	Morata de Jalon, Zaragoza Province	1,400
Do.	Cementos Lemona S.A. (CRH plc, 98.86%)	Lemona, Vizcaya Province	1,250
Do.	Cementos Molins Industrial, S.A.U. (Cementos Molins, S.A.)	Sant Vicenç dels Horts, Barcelona Province	1,780
Do.	Cementos Portland Valderrivas, S.A.	Alcala de Guidaira, Seville Province	1,450
Do.	do.	Venta de Baños, Palencia Province	815
Do.	do.	Mataporquera, Cantabria	830
Do.	Cementos Tudela Veguín, S.A. (Masaveu Group)	Careño, Oviedo, Asturias Province	2,400
Do.	do.	La Robla, Leon Province	850
Do.	do.	Tudela Veguín, Oviedo Province	200
Do.	Holcim (España), S.A. (Holcim Ltd.)	Carboneras, Almeria Province	1,500
Do.	do.	Gardor, Almeria Province	1,000
Do.	do.	Jerez de la Frontera, Cadiz Province	1,000
Do.	do.	Yeles, Toledo Province	975
Do.	Lafarge Cementos S.A.	Montcada i Reixac, Barcelona Province	900
Do.	do.	Sagunto, Valencia Province	1,700
Do.	do.	Villaluenga de la Sagra, Toledo Province	2,350
Do.	Sociedad Financiera, S.A. (Italcementi Group)	Añorga, Gipuzkoa Province	1,050
Do.	do.	Arrigorriaga, Vizcaya Province	1,125
Do.	do.	Malaga, Malaga Province	1,575
Coal	Alto Bierzo S.A.(Grupo Lamelas Vitoria)	Various mines	NA
Do.	Carbonar, S.A.	Mines at Vega de Rengos, Asturias Province	NA
Do.	Carbones Arlanza S.L	Minas at Solita y Bravo	NA
Do.	Carbones del Puerto S.A.	Mines at Esmeralda	NA
Do.	Carbones San Isidro y Maria S.L.	Mines at San Isidro	NA
Do.	Cia General Minera de Teruel S.A.	Mines at Elvira	NA
Do.	Coto Minero Cantabrico S.A.	Mines at Coto, Cantabrico, and Unica	NA
Do.	Empresa Nacional de Electricidad S.A.	As Pontes Mine and Andorra Mine, A Coruña	NA
Do.	Empresa Carbonifera del Sur, Encausar, S.A.	Mine at Puertollano	NA
Do.	Hijos de Baldomero Garcia S.A (Grupo Lamelas Vitoria)	Mines at Villablino, Leon Province	NA
Do.	Hulleras del Norte S.A. (HUNOSA)	Various mines and plant	NA
Do.	La Carbonifera del Ebro S.A.	Mines at Sant Jordi	NA
Do.	Minera Catalano Aragonesa S.A.	Mines at Ariño	NA
Do.	Sociedad Anonima Hulleras Vasco-Leonesa S.A.	Santa Lucía Mine, Leon Province	NA
Do.	Union Minera del Norte, S.A.	Various mines	NA
Copper:			
Mine output, Cu content	Cobre Las Cruces, S.A. (First Quantum Minerals Ltd., 100%)	Las Cruces Mine at Seville Province	210
Do.	Kinbauri España, S.L.U. (Orvana Minerals Corp., 100%)	El Valle-Boinás and Carlés Mines (EVBC), Asturias Province	7
Do.	Minas de Aguas Teñidas, S.A.U. (MATSA) (Trafigura Beheer B.V)	Mines and plant at Almonaster la Real, Huelva Province	30
Do.	Rio Narcea Recursos, S.A. (Lundin Mining Corp., 100%)	Aguablanca Mine, Extremadura Region	7

See footnotes at end of table.

TABLE 2—Continued  
 SPAIN: 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 <sup>c</sup>
<b>Copper—Continued:</b>				
Metal		Atlantic Copper S.A. (Freeport MacMoRan Copper & Gold Inc., 100%)	Smelter at Huelva Province	330
Do.		Cobre Las Cruces, S.A. (First Quantum Minerals Ltd., 100%)	Refinery at Seville Province	70
Do.		Elmet S.L.U. (Metallo Chimique N.V.)	Smelter at Berango, Biscay Province	96
Dunite		Pasek España S.A.	Mines and plant at Landoy, Ortigueira, La Coruña Province	1,000
Fluorspar		Minerales y Productos Derivados S.A. (MINERSA)	Mine and plant at Ribadesella, Asturias Province	140
Do.		Minera Orgiva SL	Mine at Lujar, Granada Province	NA
Gold	kilograms	Kinbauri España, S.L.U. (Orvana Minerals Corp., 100%)	El Valle-Boinás and Carlés Mines (EVBC), Asturias Province	2,000
Lead, mine output, Pb content		Minas de Aguas Teñidas, S.A.U. (MATSA) (Trafigura Mining Group)	Mines and plant at Almonaster la Real, Huelva Province	7
Magnesite		Magnesitas Navarras S.A. (Groupe Roullier, 40% and Grecian Magnesite S.A., 40%)	Mine at Eugui, plant at Zubiri, Navarra Province	170
Do.		Magnesitas de Rubián S.A.	Plant at Monte Castelo	70
Nickel, mine output, Ni content		Río Narcea Recursos. S.A. (Lundin Mining Corp., 100%)	Aguablanca Mine, Extremadura Region	8
<b>Petroleum:</b>				
Crude		Repsol YPF, S.A.	Oilfield at Albatros	NA
Do.		do.	Oilfield at Poseidon Norte and Sur	NA
Do.		do.	Oilfields at Angula, Boqueron, Casablanca, and Rodaballo	NA
Do.	42-gallon barrels per day	Repsol YPF, S.A., 100 %	Oilfield at Lubina	2,500
Do.	do.	Repsol YPF, S.A., 68.67%	Oilfield at Montanazo	2,500
Refined	do.	BP p.l.c., 100%	Castellon Refinery, Iberia	45,000
Do.	do.	Compañía Española de Petróleos S.A [International Petroleum Investment Co., 100%]	Refinery at Gibraltar-San Roque, Cadiz Province	245,000
Do.	do.	do.	Refinery at La Rabida, Huelva Province	194,000
Do.	do.	do.	Refinery at Tenerife, Santa Cruz de Tenerife Province	92,000
Do.	do.	Refinería de Petróleos del Norte S.A. [Repsol YPF, S.A., 85.98%]	Refinery at Muskiz, Biscay Province	245,000
Do.	do.	Repsol YPF, S.A.	Refinery at A Coruña Province	120,000
Do.	do.	do.	Refinery at Cartagena, Murcia Province	220,000
Do.	do.	do.	Refinery at Puertollano, Ciudad Real Province	150,000
Do.	do.	do.	Refinery at Tarragona Province	186,000
Potash, ore		Iberpotash S.A. (ICL Chemical Ltd.)	Mine and plant at Suria and Balsareny, Barcelona Province	1,000
Sepiolite		Grupo Tolsa S.A.	Mine and plant at Madrid Province	600
Do.		Minería y Tecnología de Arcillas (Grupo SAMCA)	Mines at Zaragoza Province	120
Silver	kilograms	Kinbauri España, S.L.U. (Orvana Minerals Corp., 100%)	El Valle-Boinás and Carlés Mines (EVBC), Asturias Province	5,500
Sodium sulfate		Grupo Industrial Crimidesa S.L.	Mine and plant at Cerezo de Río Tiron, Burgos Province	700
Steel		ArcelorMittal Corp.	Plants at Aviles and Gijon, Asturias Province; Sagunto, Valencia Province; Sestao, Biscay Province	8,000
Do.		Compañía Española de Laminacion S.L. (Celsa Group, 100%)	Plant at Barcelona Province	2,500
Do.		Corporación Gerdau Sidor S.A. (Sidenor) (Gerdau Group, 50%)	Plant at Basaur, Biscay Province	2,500

See footnotes at end of table.

TABLE 2—Continued  
 SPAIN: 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 <sup>e</sup>
Steel—Continued	Corporación Gerdau Sidor S.A. (Sidor) (Gerdau Group, 50%)	Plant at Reinoso, Cantabria Province	NA
Do.	do.	Plant at Azkoitia, Gipuzkoa Province	NA
Do.	do.	Plant at Vitoria, Alava Province	NA
Strontium	Solvay Minerales S.A.	Mines and plant at Escuzar, Granada Province	90
Do.	Canteras Industriales S.L.	Mine and plant at Montevives, Granada Province	50
Tungsten	Daytal Resources Spain S.L. (Almonty Industries Inc.)	Los Santos Mine, Salamanca Province	400
<b>Zinc:</b>			
Mine output, Zn content	Minas de Aguas Teñidas, S.A.U. (MATSA) (Trafigura Beheer B.V)	Mines and plant at Almonaster la Real, Huelva Province	58
Metal	Asturiana de Zinc S.A. (Glencore plc, 100%)	Electrolytic zinc plant at San Juan de Nieva, Castrillon, Asturias Province	511

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