



2011 Minerals Yearbook

AUSTRIA

THE MINERAL INDUSTRY OF AUSTRIA

By Steven T. Anderson

During 2011, the Erzberg open pit iron ore mine at Eisenerz in the State of Styria and the underground tungsten mine at Mittersill in the State of Salzburg were the only metal mines still in operation in Austria. This was not the case with the industrial minerals sector, however, which still produced dolomite, gypsum, kaolin, lime, limestone, magnesite, salt, silica (quartz) sand, talc, and other industrial mineral products. Excluding production (if any) in the United States¹ in 2011, Austria was estimated to have been the fourth ranked producer of magnesite in the world and the sixth ranked producer of tungsten and to have accounted for 3.4% and 1.5%, respectively, of the world's production. The country was also estimated to have accounted for approximately 1% of the world's production of natural gypsum in 2011 (including production by the United States) (table 1; Crangle, 2012; Kramer, 2012; Shedd, 2012).

Minerals in the National Economy

In 2011, the approximate value of the country's marketed mineral industry production was \$37.5 billion² [about 9% of the gross domestic product (GDP)] compared with \$29.9 billion (about 7.9% of the GDP) in 2010. Of the total in 2011, the value of marketed production by the natural gas and petroleum sector (including production of petroleum refinery products) was about \$16 billion (\$11.9 billion in 2010); the ferrous metals sector (including manufacturing of iron and steel, and possibly including production of ferroalloys), about \$10.4 billion (about \$8.2 billion in 2010); the nonferrous metals sector, \$5.9 billion (about \$5 billion in 2010); the building materials, ceramics, and stone sector, about \$4.5 billion (\$4.2 billion in 2010); and the mining and quarrying sector, \$0.7 billion (about \$0.6 billion in 2010). According to an index of the real value of production with a base year of 2005, the real value of production by the natural gas and petroleum sector increased by about 19% in 2011 compared with that of 2010; that of both the ferrous and the nonferrous metals sectors, by 12%; that of the mining and quarrying sector, by about 6%; and that of the building materials, ceramics and stone sector, by about 1% (International Monetary Fund, 2012; Österreichisches Institut für Wirtschaftsforschung, 2012a; Wirtschaftskammer Österreich, 2012, p. 50).

In 2011, there were 37,655 employees in the mineral industry, and they accounted for 1.1% of the total number of employees in the country compared with 36,916 and 1.1%, respectively, in 2010. In 2011, the ferrous metals sector employed about 14,100 workers (about 13,800 in 2010); the building materials, ceramics and stone sector employed about 13,700 (13,900); the nonferrous metals sector employed about 5,740 (5,100);

the natural gas and petroleum sector employed about 2,370 (2,510); and the mining and quarrying sector employed about 1,750 (1,680). In 2011, employees in the natural gas and petroleum sector earned about \$7,300 per month, on average; those in the mining and quarrying and ferrous metals sectors earned about \$5,400 per month; those in the nonferrous metals sector earned about \$5,200 per month; and those in the building materials, ceramics, and stone sector earned about \$5,000 per month (International Monetary Fund, 2012; Wirtschaftskammer Österreich, 2012, p. 33–36, 42, 51).

In the absence of detailed mineral trade balance data, more-aggregated data were used to indicate that the value of Austria's exports of raw materials (including nonfuel minerals, but also including nonmineral raw materials, like wood) increased to about \$5.5 billion in 2011 from \$4.9 billion in 2010, and that of the country's imports of raw materials increased to about \$9.3 billion from \$7.7 billion. Also, the value of exports of fuels and energy (including mineral fuels, but also including electricity) increased to \$5.7 billion in 2011 from a revised figure of about \$4.7 billion in 2010, and that of imports of fuels and energy increased to about \$22 billion from \$16 billion. Thus, Austria's trade balance for energy, fuels, and raw materials (including most of the mineral trade balance as a subset) was -\$20 billion in 2011 compared with -\$14 billion in 2010. It is not clear whether petroleum refinery products are included in the above trade balance, but other mineral-based manufactured products (such as pig iron and steel) are not. In 2011, the volume of the country's imports of crude petroleum increased by about 7% from that of 2010 (Fachverband der Mineralölindustrie Österreichs, 2012, p. 2, 11; International Monetary Fund, 2012; Wirtschaftskammer Österreich, 2012, p. 60–61).

Processed metals and industrial mineral products accounted for a greater proportion of the total value of output of the country's mineral industry than did mineral raw materials. According to the trade data that were available for nonfuel mineral-based manufactured products specifically, Austria's exports of manufactured ferrous metals (including iron and steel, and possibly including ferroalloys) increased in value to \$10 billion in 2011 from about \$8.1 billion in 2010, and imports of ferrous metals increased in value to about \$5.8 billion from about \$4.5 billion; exports of nonferrous metals (including such products as aluminum and tungsten carbide, metal, and oxide powders) increased in value to \$5.2 billion in 2011 from \$4.4 billion in 2010, and imports of nonferrous metals increased in value to \$6.1 billion from \$4.3 billion; and exports of nonmetallic mineral products (estimated to include such intermediate products as cement and such other industrial mineral products as ceramics and glass) increased in value to about \$2.8 billion in 2011 from \$2.6 billion in 2010, and imports of industrial mineral products increased in value to about \$2.4 billion from \$2.1 billion. Thus, Austria's trade balance

¹U.S. data were withheld to avoid disclosing company proprietary data.

²Where necessary, values have been converted from euro area euros (€) to U.S. dollars (US\$) at an annual average exchange rate of €0.7536=US\$1.00 for 2010 and €0.7187=US\$1.00 for 2011. All values are nominal, at current prices, unless otherwise stated.

for mineral-based manufactured products had a net decrease to about \$3.7 billion in 2011 compared with about \$4.2 billion in 2010 (International Monetary Fund, 2012; Wirtschaftskammer Österreich, 2012, p. 60–61).

Government Policies and Programs

The basis of Austria's mining law is the Mineralrohstoffgesetz (MinroG) (Federal Law BGBl. I. no. 38/1999), or "Mineral Resources Law," which came into effect on January 1, 1999, in replacement of the country's previous mining law (BGBl. 259/1975) that had been in effect since April 11, 1975. As of the end of 2011, the MinroG had been amended by Federal Laws BGBl. I no. 21/2002, BGBl. I no. 112/2003, BGBl. I no. 85/2005, BGBl. I no. 84/2006, BGBl. I no. 113/2006, BGBl. I no. 115/2009, BGBl. I no. 65/2010, and BGBl. I no. 111/2010; and by the publication BGBl. I no. 83/2003. The MinroG applies to the exploration for, production of, and processing of minerals in the country; the use of workings of unused mines; and the exploration for, locating of, and evaluation of the suitability of such geologic structures as caverns for holding or storing substances, such as liquid and gaseous mineral fuels. Three environmental laws that were directly applicable to mining and other mineral production and processing operations in the country were the Remediation Act of 1989 (BGBl. no. 299/1989), as last amended in 2008 by BGBl. I no. 40/2008; the Environmental Information Act of 1993 (BGBl. no. 495/1993), as last amended in 2005 by BGBl. I no. 6/2005; and the Environmental Impact Assessment Act of 2000 (BGBl. no. 697/1993), as last amended in 2006 by BGBl. I no. 149/2006 (Bundeskanzleramt Österreich, 2010; Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 23–30; undated; Schmelz and Rajal, 2012; Rohöl-Aufsuchungs Aktiengesellschaft, undated).

According to the MinroG, Austrian mineral resources are divided into three main categories, as follows:

- **Bergfreie**—For resources in this category, the holder of the mining license has ownership of those minerals in the deposit for which the holder has a license to mine. The mineral raw materials in this category that are currently being produced in Austria are metallic ores, such as iron ore and tungsten (scheelite); oil shale; and many industrial minerals, including clays (such as bentonite and kaolin), diabase, graphite, gypsum, kaolin, limestone and marble that contain at least 95% calcium carbonate, magnesite, talc, and silica sand that contains at least 80% SiO₂.

- **Bundeseigene**—The resources in this category are state-owned, no matter who is awarded a license to extract and produce them. Mineral fuels, such as oil and natural gas, and related materials, such as uranium, are included under this classification. Also, all salt, whether contained in brines, in solution, or in rock salt, is owned by the state.

- **Grundeigene**—The resources in this category are owned by the owner of the land. They include the stone, sand, and gravel not included in the first category and feldspar. The owner of the land must still obtain a license before he or she can produce any of these mineral commodities.

(Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 6–12).

As a member of the European Union (EU), Austria participated in developing mineral security and energy strategies for the EU, and the country's own policies in this realm were affected by the publication of the European Commission (EC) Communication [COM (2011) 25] titled "Commodity Markets and Raw Materials: Challenges and Solutions," which was adopted by the EC on March 9, 2011. The Austrian Government welcomed certain objectives of EC Communication [COM (2011) 25], including increasing transparency and monitoring of markets for raw materials, creating new financial instruments and somewhat reducing the economic risk for mineral resource projects, and requiring greater (re)use of old and waste materials. With respect to critical minerals defined by the EC's Ad-Hoc Working Group on Defining Critical Minerals, the Austrian Government had considered revising the country's mineral resources plan to define mineral protection zones for potentially economic deposits of antimony, graphite, and magnesite (Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 1–6).

In April 2009, the ministers of two Austrian Federal Government ministries convened a working group to develop measures as part of a new Austrian energy strategy that would enable the country to develop a sustainable energy system. These measures could make energy services available for private consumption as well as for businesses in the future while still implementing EU rules. The core objectives of the new Austrian energy strategy were as follows:

- **Energy efficiency**—Improve energy efficiency at all stages of the provision and use of energy
- **Renewable energy**—Focus on hydropower (including pump storage), wind power, and biomass and photovoltaic sources of power
- **Security of supply**—Increase the security of supply and aim at the highest possible degree of cost effectiveness.

The working group also suggested that Austria's targets for 2020 should be that 34% of Austrian energy consumption comes from renewable resources, and that greenhouse gas emissions are reduced by 16% below 1990 levels in sectors that do not participate in the EU's Emissions Trading System. In order for the demand for energy services in Austria to be met in a way that is compatible with the EU climate and energy targets for 2020, the Austrian working group recommended that the new Austrian energy strategy set the target for total energy consumption in Austria in 2020 to be no more than 1,100 petajoules (Bundesministerium für Wirtschaft, Familie und Jugend, 2010).

Production

Data on Austria's mineral production are in table 1. In 2011, production of secondary aluminum was estimated to have decreased by 20% compared with that of 2010 owing to an expected decrease in secondary aluminum smelter feed following the termination of the scrapping bonus paid by the Government for automobiles over 13 years old. Production of secondary refined lead was estimated to have decreased by about 12% owing to an expected decrease in the availability of automobile batteries for recycling. The production of tungsten in concentrate (W content) decreased by about 12% compared with

that of 2010. Wolfram Bergbau und Hütten AG (a subsidiary of Sandvik AB of Sweden) had apparently been mining slightly lower tungsten ore grades at the Mittersill Mine since 2009, and the company decreased production of tungsten ore in 2011 compared with that of 2010 in order to increase the mine's productive lifespan and optimize the recovery of tungsten from the ore (table 1; Austrian Times, 2009; Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 6–14; 2012, p. 30–31).

In 2011, production of graphite was estimated to have increased by 19% compared with that of 2010, and this was owing to an expected increase in investment and production by Grafitbergbau Kaisersberg GmbH. In 2011, the value of marketed production in the construction sector of Austria increased by 4.9% from that of 2010, and reported production of hydraulic cement increased by about 4.1%, which correlates with the expected increase in domestic demand for construction materials. Likewise, the country's production of some clays, gypsum, sand (other than silica sand) and gravel, and crushed and worked stone (including granite, limestone, marl, and quartzite) was estimated to have increased in close correlation with that of cement, in response to an estimated increase in the value of active construction projects in Austria in 2011 (table 1; Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 7–14, 34, 68–69; Fachverband der Stein- und Keramischen Industrie Österreich, 2011, p. 7–9, 11–13, 19; ICR Research, 2011; Österreichisches Institut für Wirtschaftsforschung, 2012b).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities. Many mineral producers and processors (including most of the producers of industrial minerals in Austria) are not listed in table 2 owing to the lack of available information concerning the production capacities of the many small- and medium-scale (“Mittelstand”) family-owned companies that produce minerals in the country. In 2010 (the latest year for which this information was available), there were reportedly 1,184 mining and quarrying operations and 3 operations that produced natural gas and (or) crude petroleum. Of the mining operations, 1,181 produced industrial minerals, including 1,165 open pit mines or quarries, 11 underground (nonsalt) industrial mineral mines, and 5 underground salt mines; 2 mines produced iron ore and micaceous iron oxide; and 1 mine produced nonferrous metals (tungsten). Almost all the mineral companies operating in Austria were privately owned, but the Government owned 100% of the currently nonproducing coal company Graz-Köflacher Eisenbahn und Bergbaugesellschaft and 31.5% of the oil and gas company OMV Austria Exploration & Production GmbH (table 2; Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 13).

In 2007, Constantia Packaging AG acquired 90% of the shares of Austria's leading aluminum producer Austria Metall AG (AMAG), and AMAG became a privately held company, Austria Metall GmbH; Constantia Packaging was in turn acquired by One Equity Partners LLC (an acquisitions subsidiary of JPMorgan Chase & Co. of the United States) in 2010; and JPMorgan Chase supported an initial public offering of shares in AMAG on the Vienna Stock Exchange on April 8, 2011 (listed under the new name of AMAG Austria Metall AG). The

leading institutional investor in AMAG at the end of 2011 was CP Group 3 B.V. of the Netherlands, which owned 34.1% of the shares in the company (table 2; One Equity Partners LLC, 2010; AMAG Austria Metall AG, 2012, p. 10, 18, 68, 82).

On August 1, 2011, Imerys S.A. of France acquired the Luzenac Group (the leading processor of talc in the world) from Rio Tinto plc of the United Kingdom, including the mines and plants operated by Naintsch Mineralwerke GmbH in Austria. Estimated capacities to produce tungsten carbide and metal by Wolfram Bergbau und Hütten at its refining plant at St. Martin were added to table 2. These production capacities are greater than the W content of the company's production capacity at the Mittersill Mine because the company uses its own concentrates plus concentrates sourced globally from other companies (supplemented by the recycling of secondary tungsten-bearing raw materials) to produce refined products at its plant in Austria. On July 28, 2011, Lafarge S.A. of France and STRABAG SE of Austria formed a joint-venture company named Lafarge Cement CE Holding GmbH to manage their combined cement production activities in Austria, the Czech Republic, Hungary, Slovakia, and Slovenia. The joint venture is headquartered in Vienna and is 70% owned by Lafarge and 30% owned by STRABAG. As a result of this agreement, STRABAG also acquired 30% of Lafarge's Austrian cement production subsidiary Lafarge Perlmooser GmbH (table 2; Lafarge S.A., 2010; Feytis, 2011; ICR Research, 2011; O'Driscoll and Watts, 2011; Imerys S.A., 2012, p. 15, 20–21, 42–44; STRABAG SE, 2012, p. 19–20, 135; Wolfram Bergbau und Hütten AG, undated).

Commodity Review

Metals

Aluminum.—By 2015, AMAG planned to complete construction of a new hot-rolling aluminum plant and expand the production capacity at its existing aluminum production facilities in Ranshofen. The company expected these investments to result in an increase of its Austrian production capacity to slightly more than 225,000 metric tons per year (t/yr) of aluminum metal compared with 150,000 t/yr in 2011 (AMAG Austria Metall AG, 2012, p. 8–9, 17, 26–28, 46, 52; Gesamtverband der Aluminiumindustrie e.V., 2012).

Industrial Minerals

Magnesium Compounds.—In 2011, sales of refractory materials to the worldwide steel manufacturing sector (including to the Austrian steel producer voestalpine AG) accounted for 62% of RHI AG's global revenues compared with 64% in 2010. The company's production of raw materials (including the mining and processing of magnesite and the production of higher value-added refractory materials like sintered magnesium aluminum oxide [“spinel”]) accounted for 12% of total revenues in 2011 compared with 11% in 2010; 82% of the revenues for the company's raw materials division in 2011 were intragroup revenues for supplying the company's own demand for raw materials compared with 83% in 2010. Particularly during the first half of 2011, RHI benefited from strong growth in steel production in Austria and elsewhere and increased the

total tonnage of products sold by 9% in 2011 compared with that of 2010. Specific company sales and production data for just within Austria were not available, but 30% of company revenues were from sales in Western Europe; 19%, North America (including Mexico); about 17%, the Asia and the Pacific region; 12%, Eastern Europe; and the remainder was from sales in Africa, the Middle East, and South America. RHI continued to increase its production of magnesium compounds according to a plan to account for 80% of the raw materials it uses to produce refractory products with the company's own production of raw materials (including magnesite) by the end of 2012. In 2011, magnesite mine and plant expansions took place mainly at company sites in Brazil, China, and Turkey, although it could also have included some expansion of magnesite production in Austria. In addition, RHI acquired magnesite raw material production facilities in Ireland and Norway in 2011 (Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 36–37; O'Driscoll, 2011; RHI AG, 2012, p. 4–6, 22–23, 27–29, 32–35, 38–40).

Outlook

Based upon data available through September 2012, Austria is expected to decrease production of crude steel to about 7.2 Mt in 2012. Production of magnesium compounds in Austria could decrease slightly in 2012 compared with that of 2011, although RHI's production outside of Austria could increase significantly given the company's target of 80% self-reliance in magnesite raw materials by the end of 2012. In 2012 and beyond, Wolfram Bergbau und Hütten is expected to produce about 1,000 t/yr of tungsten in concentrates (W content) at the Mittersill Mine, and the company signed an offtake agreement to acquire some future production of tungsten in concentrates from Wolf Minerals Ltd.'s planned Hemerdon Mine in the United Kingdom, which could enable Wolfram Bergbau und Hütten to increase its production of value-added tungsten metal products. Wolf Minerals expected to complete redevelopment of the Hemerdon Mine by sometime in 2013 (table 1: Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 32–33; 2012, p. 30–31; Swanepoel, 2012; World Steel Association, undated).

A new public investment program in road and railroad construction projects from 2011 through 2016 was announced by Austria's Ministry of Transportation in November 2010, and construction activity in the civil engineering sector is expected to continue to increase in 2012 compared with only a moderate increase in 2011. Commercial (industrial) construction and other structural engineering construction projects could also increase more in 2012 and beyond, and the Government planned to subsidize thermal refurbishment of (commercial) buildings through 2014. Residential construction in Austria is not expected to increase much in 2012 (and beyond), however, because building permits for construction of both single family homes and multistory accommodation units are expected to continue to decrease slightly or remain about the same. In 2012 and beyond, Government programs are expected to have a more noticeable effect on increasing demand for industrial minerals used in construction, and on Austria's production of these minerals and mineral products, possibly including cement, clays (such as brick clay and clays used in manufacturing

ceramics for buildings and households), diabase, gypsum, construction sand and gravel, and stone (Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 34–36; Fachverband der Stein- und Keramischen Industrie Österreich, 2011, p. 7–12, 19; ICR Research, 2011).

Investment in increasing and stabilizing Austria's production of mined graphite is expected to continue in 2012, possibly including additional increases in production by Grafitbergbau Kaisersberg GmbH at the company's Kaisersberg Mine, but accurate information concerning the expected quantitative effects of this investment on the country's production of graphite or expected timelines for any resulting increases in production was not available. The closure of natural graphite mines in China in 2011 could provide economic incentives for Austria to increase domestic production of graphite in 2012 (Bundesministerium für Wirtschaft, Familie und Jugend, 2011, p. 34–36; Fachverband der Stein- und Keramischen Industrie Österreich, 2011, p. 7–12, 19; Moores, 2011).

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TABLE 1
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity	2007	2008	2009	2010	2011 ^c	
METALS						
Aluminum, metal, secondary	metric tons	150,000 ^e	158,958	282,944	374,837 ^f	300,000
Copper, metal, secondary:						
Smelter	do.	80,200	94,200	90,800	92,200	92,200 ^{p,2}
Refined	do.	81,400	106,700	96,200	113,700	112,500 ^{p,2}
Iron and steel:						
Iron ore, including micaceous iron oxide:						
Gross weight	do.	2,153	2,033	2,002	2,069	2,050
Fe content	do.	689	650	641	662	655
Metal:						
Pig iron	do.	5,908	5,795	4,353	5,621	5,815 ²
Ferrous alloys, electric arc furnace, unspecified	do.	708 ^f	723 ^f	588 ^f	637 ^f	650
Crude steel	do.	7,578	7,594	5,662	7,206	7,474 ²
Semimanufactures, hot-rolled products	do.	6,816	6,850	5,394	6,621	6,800
Lead, refined, secondary	metric tons	28,564	26,902	22,197	25,499	22,500
Manganese, Mn content of domestic iron ore ^e		NA ^f	NA ^f	NA ^f	NA ^f	NA
Nickel, including Ni content of ferroalloys ^e	metric tons	900	800	700	600	600
Tungsten ore and concentrate:						
Ore:						
Gross weight	do.	435,006	434,296	344,851	429,748	423,790 ²
W content ^e	do.	1,270	1,270 ^f	1,010 ^f	1,110 ^f	975
Concentrate:						
Gross weight	do.	4,343	4,627	3,436	3,812	3,380 ²
W content	do.	1,117	1,122	887	977 ^f	861 ²
INDUSTRIAL MINERALS						
Aluminum oxide, fused ^e	metric tons	15,000	15,000	10,000	11,500	12,000
Cement:						
Clinker	do.	3,992	3,996	3,428	3,097	3,200
Hydraulic	do.	5,203	5,309	4,646	4,254	4,427 ²
Clays:						
Kaolin, crude	metric tons	56,690	49,527	83,980	58,956	60,000
Unspecified, possibly including bentonite, brick clay and illite	do.	2,465	2,473	1,866	1,860	2,000
Diabase (of basaltic rocks)	do.	2,372	2,410	2,098	1,762	1,800
Feldspar, byproduct of silica processing ^e	metric tons	27,000	27,000	27,000	27,000	27,000
Graphite, crude	do.	--	250	750	420	500
Gypsum and anhydrite, crude	do.	1,064	1,087	911	872	900
Lime, including quicklime	do.	497	909	725	774 ^f	780
Of which, marketed	do.	491	612	507	492 ^f	500
Magnesite:						
Crude	do.	812	837	545	757	800
Sintered or dead burned	do.	288	290	230	264	280
Caustic calcined	do.	51	50	21	52	50
Mica ^{e,3}	metric tons	3,510	3,420	2,840	3,420	3,400
Nitrogen, N content of ammonia ^e	do.	380	400	370	400	400
Salt (NaCl):						
Brines, gross	thousand cubic meters	2,468	2,912	3,460	3,608	3,500
Evaporated, mechanical heating process	do.	726	867	1,035	1,072	1,000
Rock	metric tons	1,172	503	50	95	100
Mine output, NaCl content	do.	742	874	1,038	1,083	1,000
Sand and gravel:						
Dolomite, loose rocks and gravel	do.	3,212	3,151	2,790	2,620	2,500
Quartz (silica) sand	do.	1,915	2,175	1,200	939	1,000
Sand and gravel, unspecified	do.	26,825	27,718	25,722	24,128	25,000
Sodium compounds, manufactured, n.e.s. ^{e,4}	do.	250 ^f	250 ^f	275 ^{r,2}	286 ^{r,2}	280

See footnotes at end of table.

TABLE 1—Continued
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity	2007	2008	2009	2010	2011 ^c
INDUSTRIAL MINERALS—Continued					
Stone:					
Amphibolite	1,693	1,808	1,780	1,670	1,700
Basalt, not included in diabase	1,905	1,797	1,744	1,473	1,500
Dolomite	4,452	4,409	3,967	3,915	3,900
Gneiss	1,526	1,668	1,431	1,505	1,500
Granite and granulite	2,577	3,315	3,078	2,340	2,300
Limestone, including marble	22,820	23,758	22,074	21,190	22,000
Marl	2,115	1,826	1,508	1,149	1,200
Quartz, quartzite, and pegmatite	311	327	377	294	300
Serpentinite	1,869	1,690	1,751	2,013	2,000
Other, including conglomerate and sandstone	48	61	22	38	40
Sulfur, byproduct of petroleum and natural gas	10,786	8,016	12,007	9,873	10,000
Talc and leucophyllite (white mica), crude	153,409	154,577	111,388	138,367	140,000
MINERAL FUELS AND RELATED MATERIALS					
Coke	1,422	1,410	1,281	1,388	1,400
Natural gas:					
Marketable (net)	1,835	1,544	1,559	1,713	1,750
Natural gas liquids ⁵	868	836	972	927	900
Oil shale	4	114	144	176	180
Petroleum:					
Crude ⁶	6,009	6,066	6,371	6,167	6,000
Refinery products: ⁵					
Liquefied petroleum gas	813	1,134	1,068	1,011	1,000
Gasoline	14,500	14,400	14,100	12,300	12,500
Kerosene and jet fuel	4,800	3,750	2,480	3,780	3,700
Distillate fuel oil	5,760	5,280	5,870	6,970	7,000
Residual fuel oil	4,050	6,600	5,540	5,070	5,000
Unspecified	39,600	39,600	35,600	31,700	31,500
Refinery fuel and losses	173	154	824	316	300
Total	69,696	70,918	65,482	61,147	61,000

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

NA Not available. -- Zero.

¹Table includes data available through February 7, 2013.

²Reported figure.

³Estimated from reported exports minus imports of mica.

⁴Not elsewhere specified. Data could include production of soda ash and sodium sulfate.

⁵Figure converted to barrels from metric tons according to a conversion factor and reflects the significant digits of the conversion factor. Source: U.S. Energy Information Administration, 2008, International Energy Annual—Table C.1, General Conversion Factors: Washington, DC, U.S. Energy Information Administration. June-December. (Accessed March 7, 2010, at <http://www.eia.doe.gov/emeu/iea/tablec1.html>.)

⁶All figures were converted to barrels from metric tons according to a conversion factor of 7.040 barrels of crude oil per metric ton. Source: U.S. Energy Information Administration, [undated], International Energy Statistics—Austria: Washington, DC, U.S. Energy Information Administration. (Accessed March 7, 2010, at <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=94&pid=57&aid=32>.)

TABLE 2
AUSTRIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina, fused	Treibacher Schleifmittel GmbH (Imerys S.A., 100%)	Plant at Villach, State of Carinthia	60
Aluminum	AMAG Austria Metall AG (CP Group 3 B.V., 34.1%; Raiffeisenlandesbank Oberösterreich AG, 11.5%; AMAG Arbeitnehmer Privatstiftung, 11.1%; Oberbank Industrie- und Handelsbeteiligungsholding GmbH, 5%; AMAG-Management 0.4%; free floating shares, 37.9%)	Secondary ingot plant at Ranshofen, State of Upper Austria	150
Do.	Hammerer Aluminium Industries GmbH	Secondary extrusion plant at Ranshofen, State of Upper Austria	80
Do.	Hydro Aluminium Nenzing GmbH (Norsk Hydro ASA, 100%)	Secondary plant at Nenzing, State of Vorarlberg	59
Do.	Speedline Aluminium Giesserei GmbH (Swiss Alu Trading AG, 100%)	Secondary plant at Schlins, State of Vorarlberg	49
Do.	Aluminum Lend GmbH (Salzburger Aluminium AG, 100%)	Secondary ingot plant at Lend, State of Salzburg	40
Do.	NEUMAN Aluminium Austria GmbH (CAG Holding GmbH, 100%)	Secondary plant at Markt, State of Styria	16
Do.	Bavaria Industriekapital AG	Secondary plant at Gleisdorf, State of Styria	NA
Do.	Georg Fischer Automotive AG	Secondary plant at Altenmarkt, State of Salzburg; Secondary plant at Herzogenburg, State of Lower Austria	NA
Do.	Nemak Linz GmbH (Tenedora Nemak S.A. de C.V., 100%)	Secondary plant at Linz, State of Upper Austria	NA
Do.	Almaxal Brüder Tschirk GmbH	Secondary plant at Neudoerfl, State of Burgenland	NA
Do.	Almeta Metallschmelzwerk GmbH	Secondary plant at Vienna; secondary plant at Sollenau, State of Lower Austria	NA
Calcium carbonate, ground	Omya GmbH (Omya AG, 100%)	Plant at Gummern, State of Carinthia	2,500
Do.	do.	Plants at Golling, State of Salzburg; Neu Pirka, State of Styria; and Ulmerfeld-Hausmending, State of Lower Austria	NA
Cement	Lafarge Perlmooser AG (Lafarge S.A., 70%, and Strabag SE, 30%)	Plant at Mannersdorf, State of Lower Austria; plant at Retznei, State of Styria; grinding plant at Kirchbichl, State of Tirole	2,200
Do.	Wietersdorfer & Peggauer Zementwerke GmbH	Plant at Peggau, State of Styria; Plant at Wietersdorf, State of Carinthia	1,100
Do.	Gmundner Zement Produktions- und Handels GmbH	Plant at Gmundnen, State of Upper Austria	800
Do.	Kirchdorfer Zementwerk Hofmann GmbH	Plant at Kirchdorf, State of Upper Austria	800
Do.	Zementwerk LEUBE GmbH	Plant at Gartenau, State of Salzburg	770
Do.	Wopfinger Baustoffindustrie GmbH	Plant at Wopfing, State of Lower Austria	300
Do.	Holcim (Wien) GmbH (Holcim Ltd., 100%)	Plant at Vienna	300
Do.	Holcim (Vorarlberg) GmbH (Holcim Ltd., 100%)	Loruens grinding plant and cement plant at Bludenz, State of Vorarlberg	200
Chalk	Mühlendorfer Kreidefabrik Margit-Hoffman Ostenhof KG (Omya AG, 100%)	Plant at Muellendorf, State of Burgenland	NA
Clays, including brick clay	Wienerberger AG	Clay mines at Goellersdorf, State of Lower Austria; at Rotenturm and Stoob, State of Burgenland; and at Apfelberg and Weisskirchen, State of Styria	NA
Clays, kaolin, and silica sand	Österreichische Kaolin- und Montanindustrie AG	Mines at Weinzierl and Kriechbaum; processing plant at Aisthofen, State of Upper Austria	170
Coal	Graz-Koflacher Eisenbahn und Bergbaugesellschaft GmbH (Government, 100%)	Oberdorf Mine, Baernbach, State of Styria (closed)	1,200
Copper, refined, secondary	Montanwerke Brixlegg AG (A-Tec Industries AG, 100%)	Plant at Brixlegg, State of Tirole	110

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
Diabase, basalt	Diabaswerk Saalfelden GmbH (STRABAG SE, 100%)	Mine and plant at Saalfelden, State of Salzburg	NA	
Do.	Klöcher Basaltwerke GmbH & Co KG (ASAMER Holding AG, 100%)	Mines and plants at Kloech and Oberhaag, State of Styria	NA	
Feldspar	Quarzwerke Österreich GmbH (Quarzwerke GmbH, 100%)	Mine and plant at St. Georgen an der Gusen, State of Upper Austria	NA	
Ferroalloys, FeV, FeMo, FeNi	Treibacher Industrie AG	Plant at Althofen, State of Carinthia	15 ^e	
Graphite, natural	Graphitbergbau Mühdorf Mörth GmbH	Trandorf Mine at Weinberg and extended to Weinbergwald, State of Lower Austria; mine at Eichenwald, State of Styria	15	
Do.	Grafitbergbau Kaisersberg GmbH	Kaisersberg Mine, State of Tirole	3	
Gypsum and anhydrite, natural	Moldan Baustoffe GmbH & Co. KG (Salzburger Sand- & Kieswerke GmbH, 100%)	Abtenau and Mooslegg Mines, near Kuchl bei Hallein, State of Salzburg	300	
Do.	Saint-Gobain Rigips Austria GmbH (Compagnie de Saint-Gobain, 100%)	Mine at Grundlsee and main plant at Bad Aussee, State of Styria; Mine and plant at Puchberg, State of Lower Austria	250	
Do.	Knauf GmbH	Hinterstein Mine, Spital am Pyhrn, State of Upper Austria; Mines at Doerfelstein and Tragoess-Oberort, and plant at Weissenbach bei Liezen, State of Styria	160	
Do.	Gipswerk Schretter & Cie. GmbH	Mine at Weissenbach am Lech and plant at Vils, State of Tirole	NA	
Iron ore	VA Erzberg GmbH (voestalpine AG, 100%)	Erzberg Mine at Eisenerz, State of Styria	3,000	
Iron oxide, micaceous	Kärntner Montanindustrie GmbH	Mine near Waldenstein, State of Carinthia	NA	
Lead	Bleiberg Bergwerks-Union AG (Metall Gesellschaft, 74%)	Smelter at Brixlegg, State of Tirole	55	
Lime	voestalpine Stahl AG (voestalpine AG, 100%)	Limestone mine near Kremsmauer mountain, and plant at Steyring, State of Upper Austria	360	
Do.	Zementwerk LEUBE GmbH	Plant at Gartenau, State of Salzburg	150 ^e	
Magnesite, crude	Veitsch-Radex GmbH & Co. (RHI AG, 100%)	Mine and plant at Breitenau, State of Styria; Mine at Eichberg, State of Lower Austria; Am Buergl Mine, area near Weissenstein, State of Tirole; mine and processing plant at Millstaetter Alpe, State of Carinthia	800	
Do.	Styromagnesit Steirische Magnesitindustrie GmbH	Angerer, Kaintaleck and Wieser Mines, and plant near Oberdorf an der Laming, State of Styria; Wald Mine in the Schoberpass, State of Styria	75	
Do.	CEMEX Austria AG (CEMEX S.A.B. de C.V., 100%)	Mine and plant at Veitsch, State of Styria	NA	
Do.	PRONAT Steinbruch Preg GmbH (Schotter- und Betonwerk Karl Schwarzl Betriebsgesellschaft m.b.H., 100%)	Magnesite and dunite (olivine rock) mine at Gulsen, and plant at Preg, State of Styria	NA	
Natural gas	million cubic meters	OMV Austria Exploration & Production GmbH [OMV Aktiengesellschaft (Free floating shares, 48.5%; Government, 31.5%; International Petroleum Investment Co. 20%), 100%]	Main fields in the Vienna Basin, State of Lower Austria, and some fields in the State of Upper Austria	1,500
Do.	do.	Rohöl-Aufsuchungs Aktiengesellschaft (EVN AG, 50.025%; E.ON Ruhrgas E&P GmbH, 29.975%; Steirische Gas-Wärme GmbH, 10%; Salzburg AG, 10%)	Main fields in the State of Upper Austria, and some fields in the State of Lower Austria and the State of Salzburg	550 ^e
Nitrogen, N content of ammonia	Agrolinz AG	Plant at Linz, State of Upper Austria	498	
Oil shale	Tiroler Steinölwerke Albrecht GmbH & Co. KG	Mine in the Baechental, near Pertisau am Achensee, State of Tirole	NA	

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum, crude	thousand 42-gallon barrels	OMV Austria Exploration & Production GmbH [OMV Aktiengesellschaft (Free floating shares, 48.5%; Government, 31.5%; International Petroleum Investment Co., 20%), 100%]	Main fields in the Vienna Basin, State of Lower Austria, and some fields in the State of Upper Austria	5,500 ^e
Do.	do.	Rohöl-Aufsuchungs Aktiengesellschaft (EVN AG, 50.025%; E.ON Ruhrgas E&P GmbH, 29.975%; Steirische Gas-Wärme GmbH, 10%; Salzburg AG, 10%)	Main fields in the State of Upper Austria, and some fields in the State of Lower Austria and the State of Salzburg	750 ^e
Rare-earth chemicals and oxides		Treibacher Industrie AG	Plant at Althofen, State of Carinthia	NA
Salt, NaCl content		Salinen Austria AG	Mines at Bad Ischl and Hallstatt, and evaporite saltworks at the Ebensee, State of Upper Austria; mine at Hallein-Duernberg, State of Salzburg; mine at Hall in Tirol, State of Tirole; mine at Altaussee, State of Styria	1,100
Silica sand		Krempelbauer-Quarzsandwerk St. Georgen Hentschläger & Co. KG.	Burger and Knoll-Wizany Mines at Luftenberg, Krempelbauer and Poscher Mines at St. Georgen, and Treffling Mine at Aigen-Engerwitzdorf, State of Upper Austria	NA
Do.		Quarzwerte Österreich GmbH (Quarzwerte GmbH, 100%)	Mine and plant at Melk, State of Lower Austria; mine and plant at St. Georgen an der Gusen, State of Upper Austria	NA
Do.		Quarzsande GmbH (Zementwerk LEUBE GmbH, 100%)	Mine and plant at Eferding, mine at Bruck-Waasen, and mine at Wolfsegg, State of Upper Austria	NA
Steel, crude		voestalpine Stahl GmbH (voestalpine AG, 100%)	Plant at Linz, State of Upper Austria	6,000
Do.		voestalpine Stahl Donawitz GmbH Co & KG (voestalpine AG, 100%)	Plant at Donawitz (near Leoben), State of Styria	1,500
Do.		Breitenfeld Edelstahl AG	Plant at Mitterdorf in Muerztal, State of Styria	300
Do.		Böhler Edelstahl GmbH & Co KG (voestalpine AG, 100%)	Plant at Kapfenberg, State of Styria	150 ^e
Talc and leucophyllite (white mica)		Naintsch Mineralwerke GmbH (Imerys S.A., 100%)	Talc mines at Lassing and Rabenwald, and plant at Oberfeistritz, State of Styria; talc and mica mine at Kleinfestritz, and a plant at Weisskirchen, State of Styria	200 ^e
Do.		Aspanger Bergbau und Mineralwerke GmbH & Co. KG (Wietersdorfer & Peggauer Zementwerke GmbH, 100%)	Leucophyllite mine and mica processing plant at Aspangberg-Zoeben, State of Lower Austria	NA
Tungsten:				
Ore (scheelite), gross weight		Wolfram Bergbau und Hütten AG (Sandvik AB, 100%)	Mine at Mittersill and processing plant at Bergla, in the Felbertauerntal, State of Salzburg	475 ^e
Concentrate, W content	metric tons	do.	do.	1,800 ^e
Carbide, powders	do.	do.	Primary and secondary chemical treatment and sintering plant at St. Martin, in the Sulmtal, State of Styria	3,000 ^e
Carbide and metal, powders	do.	Treibacher Industrie AG	Plant at Althofen, State of Carinthia	NA
Metal, powders	do.	Plansee SE (Plansee Holding AG, 100%)	Plants at Liezen, State of Styria, and at Reutte, State of Tirole	NA
Do.	do.	Wolfram Bergbau und Hütten AG (Sandvik AB, 100%)	Primary and secondary chemical treatment and sintering plant at St. Martin, in the Sulmtal, State of Styria	3,600 ^e
Oxides	do.	do.	do.	NA

^eEstimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.