

2005 Minerals Yearbook

AUSTRIA

THE MINERAL INDUSTRY OF AUSTRIA

By Harold R. Newman

Although the mining industry had a long tradition in Austria, metal mining sector activity has declined during the past few years owing principally to environmental issues, high mining costs, low ore grades and reserves, and increased foreign competition. All metal mines, except the open pit iron ore operation at Erzberg and the underground tungsten operation at Mittersill, were closed. With the exception of secondary lead, recycling activities were decreasing. Most of the growth in the mineral industry was in the private sector production of industrial minerals. This sector produced a number of important minerals, such as gypsum, magnesite, salt, and talc (table 1).

Austria is a landlocked country and has an area of 82,444 square kilometers; it borders the Czech Republic, Germany, Hungary, Italy, Slovenia, and Switzerland. The major river for navigation is the Danube. In 2005, the gross domestic product based on purchasing power parity was \$275 billion, and the per capita income based on purchasing power parity was \$33,615. The inflation rate was 2.1%, and the unemployment rate was 5.2% (International Monetary Fund, 2006§¹).

Environmental issues were forest degradation caused by air pollution from emissions by coal and oil-fired power stations and industrial plants. Soil pollution resulted from the use of agricultural chemicals. Natural hazards were avalanches, earthquakes, and landslides (U.S. Central Intelligence Agency, 2006§).

Österreichische Industrieholding AG (ÖIAG) was the investment and privatization agency of the Government. In line with its Government mandate, ÖIAG employs a double strategy—it both stimulates increases in the value of investments for which it is responsible and examines exit scenarios for the partial or complete privatization of those companies for which privatization is envisaged. Privatization of state-owned industries was continuing. For information on the structure of the mineral industry, see table 2.

Austria is dependent on foreign trade and has an open economy that is closely linked to the economies of other European Union (EU) member states. In 2005, imports of goods increased by 4.8% to 95.4 billion euros (€) (\$118.3 billion²). Exports rose by 4.6% to €94 billion (\$116.6 billion). The most important EU trading partners were Germany, with imports from Austria of €40.5 billion (\$50.2 billion) and exports to Austria of €29.9 billion (\$37.1 billion), and Italy with imports from Austria of €6.4 billion (\$7.9 billion) and exports to Austria of €8.2 billion (\$10.2 billion). The most important non-EU trading partner was the United States, with imports from Austria of €3.2 billion (\$3.9 billion) and exports to Austria of €5.3 billion (\$6.6 billion) (Statistik Austria, 2005§).

Austria Metall AG was Austria's leading producer of aluminum semifinished products and casting alloys for industrial processors. Austria Metall's production program included aircraft and automotive products, brazing sheet, cathode sheet, packaging, and products with sports applications. Cast alloys were used in the automobile industry and in the fields of electronics and mechanical engineering (Thompson Gale, 2005a§).

Montanwerke Brixlegg AG specialized in the production of copper. Montanwerke extracted pure metals, salts, and oxides from such copper-containing secondary materials as scrap metals, alloys, and residues through the refining process and was the only copper producer in Austria. Montanwerke exported more than 80% of its products (Montanwerke Brixlegg AG, 2005§).

The Province of Styria had the largest deposits of mineral resources in Austria. Voestalpine Erzberg GmbH produced about 2 million metric tons per year (Mt/yr) of iron ore with a content of 32% iron and 2% manganese by open pit mining from the Erzberg Mine. The main ore minerals were ankerite, ferrous dolomite, and siderite. Because of the high manganese content, the iron ore was rated as a high-quality raw material. The ore was no longer smelted at Eisernez but was shipped by rail to the steel mills of Voestalpine Stahl GmbH at Donawitz and Linz for further beneficiation and production of self-fluxing sinter that averaged 50% iron and 3% manganese (Bureau de Recherches Géologiques et Minières, 2005§).

Treibacher Industrie AG's Steel and Foundry Products Unit was a market leader for ferroalloys, such as ferromolybdenum and ferrovanadium. At the facility in Althofen, Treibacher processed spent catalysts and residues from the petrochemicals industry that contained molybdenum, nickel, and vanadium (Treibacher Industrie AG, 2005a§). Treibacher signed a long-term contract with one of the world's leading refineries, Total SA, which is located in Antwerp, Belgium. Total would supply Treibacher with spent catalysts that contained molybdenum, nickel, and vanadium to be processed in Treibacher's recycling facilities in Althofen (Treibacher Industrie AG, 2005b§).

Voestalpine Stahl GmbH was continuing with its Linz 2010 project, which would increase the production capacity for flat products to 5.5 Mt/yr from 4.4 Mt/yr by the end of 2008. Voestalpine announced that it had signed a long-term rail delivery agreement with Network Rail, which was the owner and operator of the former British Rail railway infrastructure. The contract value amount in the first year would be between €18 million and €24 million (\$22 million and \$30 million), which corresponds to a market share of about 25% of the United Kingdom's railway market (Voestalpine AG, 2005§).

ÖIAG sold the remaining shares of Voestalpine in August 2005, which marked an important chapter in the history of Austrian privatization. Voestalpine was a successful company and was one of the eight leading companies that trade on the Austrian Stock Exchange (ATX). Its stock value has almost

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¹References that include a section mark (§) are found in the Internet References Cited section.

²Where necessary, values have been converted from European Union euros (€) to U.S. dollars (US\$) at the rate of €1.00=US\$1.24.

tripled since the shares were first introduced on the ATX in 1995 (Österreichische Industrieholding AG, 2005§).

Wolfram Bergbau und Hütten GmbH (WBH) operated one of the western world's leading tungsten mines at Mittersill and a tungsten conversion plant at Bergla. The production line started at the mine in Mittersill where scheelite (calcium tungstate) was extracted in an underground mining operation. The crude ore was transported to the ore-dressing plant in Bergla by an underground conveyor belt through a 3-kilometer-long tunnel. At the ore-dressing plant, the crude ore was converted into a scheelite concentrate using a flotation process. This concentrate met the bulk of the raw material demand for WBH and provided a source of concentrate that was both independent and secure (Wolfram Bergbau und Hütten GmbH, 2005a§).

Tungsten recycling was of increasing importance to WBH. The conversion of secondary materials is an important factor in both cost efficiency and reduced dependence on virgin raw materials. WBH treated tungsten-bearing secondary materials by means of chemical conversion and manufactured products according to customer requirements (Wolfram Bergbau und Hütten GmbH, 2005b§).

Increased building activity in 2005 was a benefit to the cement industry. Cement demand was met mostly by domestic production; imports constituted about 12.5% of the consumption of the building industry. Concrete was one of Austria's most popular building materials (Cement Austria AG, 2005§).

Lafarge Perlmooser AG was part of the Lafarge Group and was Austria's leading manufacturer of cement. Lafarge Perlmooser had cement plants at Mannesdorf and Retsnei and a grinding plant at Kirchbichl. The operations produced about 1.5 Mt/yr (Lafarge Perlmooser AG, 2005§).

GKB-Bergbau GmbH mined gravel, lignite, and mixed ores. The company was responsible for the Styrian Erzberg and the West-Styrian lignite mining areas. ÖeBAG conducted the execution of all mine closings and assurance measures, which included restoration. GKB-Bergbau was the holding company for ÖeBAG (Thompson Gale, 2005b§).

OMV Aktiengesellschaft was Austria's leading industrial company. It explored for natural gas and petroleum, and imported, transported, and stored natural gas.

OMV Austria Exploration & Production, which was a wholly owned subsidiary of OMV, made a second major gas discovery in 2005 in the Vienna Basin following the discovery of the Strasshof T4 well in April. The discovery was made during the drilling of the exploration well Ebenthal Tief 1 at a depth of about 3,400 meters. OMV estimated reserves to be 1.5 billion cubic meters, which is equal to about one-fifth of Austrian annual natural gas consumption. Ebenthal Tief 1 is located about 30 kilometers northeast of Vienna in the vicinity of the Matzen Field, which is the biggest contiguous oilfield in central Europe (Alexander's Gas & Oil Connections, 2005§).

Outlook

Because of Austria's long history of minerals exploration and a strong mining tradition, geologic conditions are fairly well known. Future mining activities will most likely be concentrated in industrial minerals, mainly for domestic consumption. The chances of finding new and workable base-metal deposits are probably small as the country has been well explored.

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Major Source of Information

Bundesministerium für Wirtschaft und Arbeit Denisgasse 31 1200 Vienna, Austria

$\label{eq:table 1} \textbf{AUSTRIA: PRODUCTION OF MINERAL COMMODITIES}^1$

(Thousand metric tons unless otherwise specified)

Commodity	2001	2002	2003	2004	2005 ^e
METALS					2
Aluminum, metal, secondary metric tons	149,900	151,100	155,000	160,000 ^e	151,200 2
Copper, refined, secondary do.	68,642	64,932	65,084	74,245	72,316 ²
Gold, metal ^e kilograms	50	50	25	15	15
Iron and steel:					
Iron ore and concentrate:					2
Gross weight	1,843	1,936	2,119	1,882 ^r	$2,048^{-2}$
Fe content	581	621	678	602 ^r	655
Metal:					
Pig iron	4,375	4,669	4,677	4,847 ^r	5,444 ²
Ferroalloys, electric arc furnace ^e	9	5	5	6	6
Crude steel	5,887	6,208	6,261	6,530 e	7,031 2
Semimanufactures	5,251	5,300	5,300 e	5,400 e	5,500
Lead, refined, secondary ^e metric tons	22,000	21,000	18,000	24,000 ^r	22,000 ²
Manganese, Mn content of domestic iron ore do.	18,000	16,000	16,000	16,000	16,000
Tungsten, mine output, W content of concentrate do.	1,237	1,384	1,332	1,400 e	1,350
INDUSTRIAL MINERALS					
Cement, hydraulic	3,802 ^r	3,918 ^r	3,886	3,976	4,736 ²
Clays:					
Ilite	300 e	60	1,708 ^r	2,013 ^r	2,000
Kaolin:					
Crude	90 ^e	100	100 ^r	67 ^r	56 ²
Other ^e :	2,600	2,600	2,600	2,600	2,500
Graphite, crude metric tons	116				
Gypsum and anhydrite, crude	929	962	1,004	1,039 ^r	1,113 2
Lime ^e	2,000	2,000	2,000	2,000	2,000
Magnesite:					
Crude	681	728	767	715 ^r	694 ²
Sintered or dead-burned	202	200	200 ^e	267 ^r	304 ²
Caustic calcined ^e	60	60	165 ^r	161 ^r	98 ²
Nitrogen, N content of ammonia ^e metric tons	440	400	400	440	400
Pigments, mineral, micaceous iron oxide ^e do.	5,000	5,000	5,000	5,000	5,000
Pumice (trass) do.	4,000 e	4,000	2,865 ^r	2,900 ^r	2,943 ²
Salt:	1,000	.,000	2,000	2,,,,,	_,,
Rock ^e	1	1	1	1	1
In brine thousand cubic meters	2,986	3,212	3,422	3,430 ²	3,409 ²
Sand and gravel:	2,700	5,212	5,.22	5,.50	-,
Quartz sand	700 ^e	835	944	864 г	1,704 ²
Other sand and gravel	18,000 °	5,261	6,079	5,886 ^r	6,000
Total	18,700 °	6,096	7,023	6,750 ^r	7,704 ²
Sodium compounds, n.e.s., manufactured. ^e	10,700	0,070	7,023	0,730	7,70.
Soda ash	150	150	150	150	100
Sulfate	100	100	100	100	100
Stone: ³	100	100	100	100	100
Dolomite Dolomite	6,172	5,836	5,468 ^r	5,907 ^r	6,291 2
Quartz and quartzite	402	362	283	3,907 294 ^r	249 ²
Total	6,574	6,198	5,751	6,201 ^r	6,540 ²
	0,374	0,198	3,/31	0,201	0,540
Other:	23,799	24 994	24 477	24,158 ^r	25,576 ²
Limestone and marble		24,884	24,477		3,166 ²
Basalt	5,000 e	4,533	4,669	5,197 ^r	1,479 ²
Marl	1,569	1,534	1,069	1,747 ^r	1,479 4,917 ²
Crushed stone ^e	12,000	12,000	12,000	5,858 ^r	35,138 ²
Total	42,368	42,951	42,215	36,960 ^r	
Grand total	48,942	49,149	47,966 ^r	43,161 ^r	41,678 ²

See footnotes at end of table.

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$\label{eq:table 1--Continued} \mbox{AUSTRIA: PRODUCTION OF MINERAL COMMODITIES}^1$

(Thousand metric tons unless otherwise specified)

Commodity		2001	2002	2003	2004	2005 ^e
INDUSTRIAL MINERALSContinued						
Sulfur, byproduct of petroleum and natural gas me	tric tons	10,912	9,444	10,400 ^r	8,458 ^r	$10,205^{-2}$
Talc and soapstone, crude	do.	137,776	138,195	137,596	136,305 ^r	137,000
MINERAL FUELS AND RELATED MATERIALS						
Coal, brown and lignite		1,194	1,413	1,152	235 г	6 ²
Coke		1,411	1,394	1,400 e	1,414 ^r	1,400
Natural gas:						
Gross million cubic	emeters	1,954	2,015	2,030	2,011 ^r	1,654 2
Marketed ^e	do.	1,200	1,200	1,200	1,200	1,200
Oil shale me	tric tons	408	336	432	855 ^r	891 2
Petroleum:						
Crude thousand 42-gallor	n barrels	7,178	7,176	6,976	6,728 ^r	6,413 2
Refinery products:						_
Liquefied petroleum gas	do.	4 ^r	159	580 ^r	661 ^r	1,241 2
Gasoline	do.	17,155 ^r	17,017	15,394	14,773 ^r	15,283 ²
Kerosene and jet fuel	do.	4,380 ^r	3,888	3,576	3,534 ^r	$4,596^{-2}$
Distillate fuel oil	do.	29,638 ^r	27,457	26,987	27,000	27,000
Residual fuel oil	do.	8,359 ^r	6,732	7,009	6,061 ^r	6,141 2
Unspecified	do.	13,834 ^r	30,387	29,169	33,075 ^r	31,654 ²
Refinery fuel and losses	do.	6,862 ^r	4,550	4,739	5,068 ^r	4,627 ²
Total	do.	80,232 ^r	90,190	87,454 ^r	91,809 ^r	90,542

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through May 2006.

²Reported figure.

³Excludes stone used by the cement and iron and steel industries.

${\bf TABLE~2}$ AUSTRIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina, fused	Treibacher Schleifmittel AG	Plant at Villach	100.
Aluminum	Aluminum Lend GmbH (Salzburger Aluminium AG, 100%)	Secondary ingot plant at Lend	25.
Do.	Austria Metall AG	Secondary ingot plant at Ranshofen	50.
Cement	Lafarge Perlmooser AG (Lafarge Group, 100%)	Plants at Mannesdorf and Retsnei, grinding plant at Kirchbichl	2,200.
Do.	Wietersdorfer & Peggauer Zementwerke GmbH	Plants at Peggau and Wietersdorf	1,000.
Do.	Zementwerk Leube GmbH	Plant at Gartenau	700.
Do.	SPZ Zementwerke Eiberg GmbH	Plant at Eiberg	600.
Do.	Gmundner Zement	Plant at Gmundner	580.
Coal	Graz-Koflacher Eisenbahn und Bergbaugesellschaft GmbH (Government, 100%)	Oberdorf Mine, Barnbach (closed)	1,200.
Copper, secondary	Montanwerke Brixlegg AG (A-Tec Industries, 91.6%)	Plant at Brixlegg	75 cathode, 66 billet.
Ferroalloys, FeV, FeMo, FeNi	Treibacher Industrie AG	Plants at Althofen and Treibach	10.
Graphite	Industrie und Bergbaugesellschaft Pryssok & Co KG	Trandorf Mine at Mühldorf	15.
Do.	Grafitbergbau Kaiserberg AG	Kaisersberg Mine	3.
Do.	do.	Trieben Mine	3.
Gypsum	Erste Salzburger Gipswerk-Gesellschaft Christian Moldan KG	Abtenau and Moosegg Mines	300.
Do.	Rigips Austria GmbH	Grundlsee, Puchberg, Unterkainisch, and Weisenbach Mines	250.
Do.	Knauf Gesellschaft GmbH	Hinterstein Mine	160.
Iron ore	Voest-Alpine Erzberg GmbH	Erzberg Mine at Eisenerz	3,000.
Lead	Bleiberg Bergwerks-Union AG (Metall Gesellschaft, 74%)	Smelter at Brixlegg	55.
Magnesite	Veitsch-Radex GmbH	Mines at Breitenau, Hochfilzen, Radenthein, Trieben, and Veitsch	800.
Natural gas million cubic meters	Osterreichische Aktiengesellschaft (Government 100%)	Fields in Vienna Basin	1,500.
Nitrogen, N content of ammonia	Agrolinz AG	Plant at Linz	498.
Salt	Österreichische Salinen GmbH (Invest Holding GmbH, 100%)	Mines at Bad Ischl	800.
Steel	Voest-Alpine Stahl GmbH	Plants at Donawitz and Linz	4,500.
Talc	Luzenac Naintsch AG	Mines at Lassing, Rabenwald, and Weisskirchen, and plants at Oberfeistitz and Weisskirchen	160.
Tungsten	Wolfram Bergbau und Hütten GmbH	Mittersill Mine, Felbertal, Salzburg; conversion plant at Bergla	350.

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