THE MINERAL INDUSTRY OF

AUSTRIA

By Harold R. Newman

Although the mining industry has maintained a long tradition in Austria, the metal mining sector has declined during the past few years owing principally to high operating costs, low ore grades, environmental problems, and increased foreign competition. This was not the case with the industrial minerals sector, which produced a number of important minerals. Austria was considered to be a significant producer of graphite and talc (table 1).

Because of Austria's dependence on foreign trade, its economy was closely linked to the economies of other European Union (EU) member states, particularly Germany. Foreign trade and investment ties with Central European and Eastern European countries played an increasingly important role.

As a result of EU liberalization directives, the Government has moved ahead with privatization legislation in the telecom and energy sectors. The Government was removing many of Austria's restrictions on business and was intent on privatizing state-owned companies. After completing a 10-year privatization program in 1997, the Government introduced another privatization plan in 2000 that included state-owned industries involved in the production of aluminum, petroleum, and steel. In 2001, the Government was reviewing full privatization of its shareholdings in the partly privatized companies Osterreichische Mineralolverwaltung AG (OMV) in petroleum, Voest-Alpine Stahl GmbH in steel, and Voest-Alpine AG in technology (Organisation for Economic Co-operation and Development, 2001§[1]).

During the past several years, the Austrian mineral industry had turned away from base-metal mining. Except for the iron ore operation at Erzberg and the tungsten operation at Mittersill, all the metal mines were closed. Most growth in the mineral resources area was in the private sector production of industrial minerals. Although partial privatization of state-owned industries was underway, a portion of the mineral industry was still under Government control (table 2).

Treibacher Alloymet AG used to make a wide range of ferroalloys, but only ferrovanadium and ferromolybdenum were made in significant quantities in 2001. The main product was ferrovanadium oxide. About 90% of production of both commodities was exported to European tool and high-speed steelmakers. Treibacher was developing a new product called Molyquick® that is more homogeneous than standard molybdenum. Because it is made in briquettes, fewer are fines. It has a lower density and dissolves faster in the steel melt (Buchanan, 2001).

Voest-Alpine Schienen (a subsidiary of Voest-Alpine Stahl AG) announced it would spend $11.7 million to increase the long rail capacity of its Donawitz works to 200,000 metric tons per year (t/yr) from 140,000 t/yr by September 2002. Voest-Alpine Schienen defined long rails as being more than 60 meters (m) in length and ultra-long rails as being more than 100 m in length. The company estimated that 540,000 t/yr of rail is consumed in Europe in 2001. Central European countries, most of which hoped to join the EU, were expanding their grids of high-speed transit railways. Ultralong rails accounted for about 40% of total production (Metal Bulletin, 2001).

The Erzberg Mine of Voest-Alpine Erzberg GmbH produced a beneficiated iron ore that was shipped by rail to the nearby steel mills of Voest-Alpine Stahl for further beneficiation and production of self-fluxing sinter that averaged 50% iron and 3% manganese.

Wolfram Bergbau und Hütten GmbH operated the Western World's largest underground tungsten mine at Mittersill and a tungsten conversion plant at Bergla.

Treibacher Schleifmittel AG, which was the world's largest manufacturer of fused alumina in 2001, expanded its presence in Central Europe with the acquisition of Chemicke Zavody Sokolov (CHZS) of the Czech Republic. CHZS produced about 10,000 t/yr of white fused alumina, mostly in lump form, for the refractories industry. Treibacher announced that it intended to make improvements to the plant's production capabilities (Industrial Minerals, 2001). Ample supplies of calcite, dolomite, and limestone were available to support a viable cement industry in Austria. The market was relatively fragmented; only two of the five major producing companies had more than one plant.

Grafitbergbau Kaiserberg AG operated open pit mines at Kaisersberg and at Trieben. Grafitbergbau's 30,000-t/yr capacity processing plant at Kaisersberg consisted of drying, classification, milling, flotation, and fine grinding sections (table 1).

Austrian salt mines were owned by the Government and regulated by the Ministry of Finance. Exploration, production, and trade were controlled by Österreichische Salinen GmbH. All salt output was from three underground mines and one brine well in central Austria. The Government was proceeding with plans to privatize the operations.

Luzenac Naintsch AG, which was the only producer of talc in Austria, operated three mines in the Styria region and produced a range of talc, chloritic talc, dolomite talc, and chlorite-mica-quartz ores.

The open pit Oberdorf Mine of Graz-Koflacher Eisenbahn und Bergbaugesellschaft GmbH was the only lignite mine with any significant production.

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

[1]A reference that includes a section twist (§) is found in the Internet Reference Cited section.

concentrated in industrial minerals, mainly for domestic consumption. The chances of finding new and workable base-metal deposits are probably small.

References Cited

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Organisation for Economic Co-operation and Development, 2001 (December), Economic survey of Austria, accessed December 17, 2001, at URL http://www.oecd.org/EN/document/0,EN-document-652-8-no-3-26307-652,00.html.

Major Source of Information

Bundesministerium für Wirtschaft und Arbeit
Denisgasse 31
1200 Vienna, Austria

TABLE 1
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity		1997	1998	1999	2000	2001 e/
METALS						
Aluminum, metal, secondary	tons	118,800	116,500	143,000	158,100 r/	150,000
Copper, refined:						
Primary	do.	2,000 e/	1,000	5,000	1,000	1,000
Secondary	do.	74,000 e/	71,000	77,573	78,000 r/	68,000
Total	do.	76,000 e/	72,000	82,573	79,000 r/	69,000
Gold, metal e/	kilograms	100	100	100	100	50
Iron and steel:						
Iron ore and concentrate: e/						
Gross weight		1,800	1,797 2/	1,752 2/	1,850	1,800
Fe content		500	500	553 2/	590	575
Metal:						
Pig iron		3,965	4,022	3,913	4,318	4,375 2/
Ferroalloys, electric furnace e/		11	12	12	12	9
Crude steel		5,196	5,298	5,213	5,725	5,887 2/
Semimanufactures		4,516	4,640	4,657	5,035	5,251 2/
Lead, refined, secondary	tons	22,700	23,100	24,500 e/	24,000 e/	22,000
Manganese, Mn content of domestic iron ore e/	do.	25,000	24,000	20,000	20,000	18,000
Tungsten, mine output, W content of concentrate	do.	1,400	1,423	1,610	1,600 e/	1,600
INDUSTRIAL MINERALS						
Cement, hydraulic		3,852	3,789 r/	3,817 r/	3,799 r/	3,863 2/
Clays:						
Ilite		150 e/	186	190 e/	305	300
Kaolin:						
Crude		180 e/	298	152	119	125
Marketable e/		60	100 2/	50	50	50
Other e/		2,800	2,800	2,600	2,600	2,600
Graphite, crude	tons	12,000 e/	10,738	12,635	12,000 e/	12,000
Gypsum and anhydrite, crude		1,000 e/	961	999	946	1,000
Lime e/		2,000	2,000	2,000	2,000	2,000
Magnesite:						
Crude		650 e/	723	749	726	700
Sintered or dead-burned		300 e/	325	325	270 r/	300
Caustic calcined e/		60	60	60	60	60
Nitrogen, N content of ammonia e/	tons	400	400	450	450	460
Pigments, mineral, micaceous iron oxide e/	do.	7,500	7,000	6,000	6,000	5,000
Pumice (trass)	do.	6,000	6,137	4,272	3,961	4,000
Salt: e/						
Rock		1	1	1	1	1
In brine		400	400	400	400	400
Sand and gravel:						
Quartz sand		6,000 e/	6,329	6,857	6,985	7,000
Other sand and gravel e/		18,000	18,000	18,000	18,000	18,000
Total		24,000 e/	24,329	24,857 r/	24,985	25,000
Sodium compounds, n.e.s., manufactured: e/						
Soda ash		200	150	150	150	150
Sulfate		100	100	100	100	100
Stone: 3/						
Dolomite		9,000 e/	8,978	7,968	7,152	7,200
Quartz and quartzite		282	398	409	372	375
Other:						
Limestone and marble		20,000 e/	20,000 e/	26,409	23,824	24,000
Basalt		647	5,075	5,201	4,933	5,000
Marl		2,000	1,364	1,423	1,559	1,600
Crushed stone e/		12,000	12,000	12,000	12,000	12,000
Total		34,647	38,439 r/	45,033 r/	42,316 r/	42,600
Grand total		43,929	47,815	53,410	49,840	50,175
Sulfur, byproduct of petroleum and natural gas	tons	9,000 e/	9,000 e/	9,468	9,646	9,500
Talc and soapstone, crude	do.	155,730	137,114	129,516	133,060	140,000

See footnotes at end of table.

TABLE 1--Continued
AUSTRIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity		1997	1998	1999	2000	2001 e/
MINERAL FUELS AND RELATED MATERIALS						
Coal, brown and lignite		1,122	1,191	1,054	1,256	1,340 2/
Coke		1,567	1,500	1,596	1,384	1,411 2/
Gas, natural:						
Gross	million cubic meters	1,400 e/	1,568	1,791	1,805	1,800
Marketed e/	do.	1,000	1,000	1,000	1,200	1,200
Oil shale	tons	500 e/	500	496	440	400
Petroleum refinery products:						
Crude	thousand 42-gallon barrels	7,200 e/	7,624	6,879	7,024	7,000
Refinery products:						
Liquefied petroleum gas	do.	400 r/ e/	325	241	186	200
Gasoline	do.	20,120	19,540	18,196	15,413	16,000
Kerosene and jet fuel	do.	3,832	3,960	4,256	4,360	4,500
Distillate fuel oil	do.	29,000 r/ e/	29,019	27,387	25,897	26,000
Residual fuel oil	do.	9,623	9,710	8,521	6,325	6,000
Unspecified	do.	8,000	8,393	8,673	14,748	15,000
Refinery fuel and losses	do.	2,000 e/	4,781	5,497	5,149	5,000
Total	do.	72,975 r/	75,728	72,771	72,078	72,700

e/ Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. r/ Revised.
1/ Table includes data available through March 2002.
2/ Reported figure.
3/ Excludes stone used by the cement and iron and steel industries.

TABLE 2
AUSTRIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2001

(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 Sekundär Aluminium GmbH (Amag Austria Metall, 100%	Secondary ingot plant at Ranshofen	50
Cement	Lafarge Perlmooser AG (Lafarge France, 100%)	Plants at Mannesdorf and Retsnei and grinding plants at Kirchbichl	2,200
Do.	Wietersdorfer Zemenwerke	Plants at Peggau and Wietersdorf	1,000
Do.	Zementwerk Leube	Plant at Gartenau	700
Do.	SPZ Zemenwerke Eiberg	Plant at Eiberg	600
Do.	Gmundner Zement	Plant at Gmundner	580
Coal	Graz-Koflacher Eisenbahn und Bergbaugesellschaft GmbH (Government, 100%)	Oberdorf Mine	1,200
Copper	Austria Metall AG (Metal Mining Corp. of Canada, 41%; Mount Isa Mines of Australia, 41%; and Government, 18%)	Plant at Brixlegg	75
Ferroalloys (FeV, FeMo, FeNi)	Treibacher Alloymet AG (Treibacher Industries AG, 100%)	Plant at 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 (Government, 100%)	Erzberg Mine at Eisenerz	1,000
Lead	Bleiberg Bergwerks-Union AG (Metall Gesellschaft, 74%)	Smelter at Brixlegg	55
Magnesite	Veitsch-Radex AG	Mines at Breitenau, Hochfilzen and Radenthein	600
Do.	Radex Austria AG (Osterreichische Magnesit AG, 100%)	Millstatteralpe Mine	250
Natural gas million cubic meters	Osterreichische Mineralolverwaltung AG (Government, 100%)	Fields in Vienna Basin	1,500
Nitrogen, N content of ammonia	Agrolinz AG	Plant at Linz	498
Salt	Osterreichische Salinen GmbH (Government, 100%)	Mines at Bad Ischl	800
Steel	Voest-Alpine Stahl GmbH (Government, 100%)	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 (Inmet Mining Corp., 100%)	Mittersill Mine at Felbertal, Salzburg, and conversion plant in Bergla	350