

# THE MINERAL INDUSTRY OF SWITZERLAND

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The mineral industry of Switzerland was limited mainly to commodities required for construction and infrastructure.

In 1994, all metal production in Switzerland was either from imported raw materials (aluminum and steel) or from scrap (lead). Production of industrial minerals was affected by the building industry, and remained about the same as in 1993. (*See table 1.*)

Switzerland relied on imports for many mineral commodities, due to self-imposed environmental restrictions and lack of natural resources. Its most prominent trading partners, in order of importance, were Germany, France, the United Kingdom, and the United States.

The individual mineral industry enterprises were owned either privately or by regional governments (cantons). Regional governments granted mining or processing licenses and directly operated electrical powerplants, gas utilities, and local transportation facilities, and managed water resources.

The final executive authority in mineral industry was vested in the Federal Council, composed of regional delegates and representatives of the four major political parties. (*See table 2.*)

In 1994, the Alusuisse-Lonza Holding AG (Aktien Gesellschaft) was the only aluminum producer in Switzerland. According to an industry source, the 50,000-metric-ton-per-year (mt/a) primary aluminum smelter in Steg, originally scheduled to close in 1994, will remain in operation until 1996, due to improved market conditions. However, 1994 production of 31,019 metric tons (mt) was well below capacity. As a consequence, most of the primary aluminum for downstream production came from the wholly owned Icelandic Aluminium Co. and the jointly owned Sor-Norge Aluminium Co. A/S in Norway. Additional aluminum ingot was purchased on the open market. Due to reduced primary metal production, some of the bauxite production from the wholly owned Mokanji Mine in Sierra Leone and alumina from Gove, Australia (70% Alusuisse-Lonza and 30% Gove Alumina Ltd.) was sold to third parties.

A secondary lead smelter operated in Pratteln, 70 kilometers (km) west from Zurich close to French and German border. The capacity in 1994 was 12,700 mt/a for wet batteries, using 2 rotary furnaces and 3 kettles with respective capacities of 18 mt, 11 mt, and 4.5 mt.<sup>2</sup> The 1994

output of about 6,350 mt consisted of antimonial and calcium lead, plus a small amount of soft solder in bars.

The steel industry in Switzerland was characterized by a relatively small domestic market and a high degree of specialization. At the beginning of 1994, the rebar and wire rod producer Ferrowohlen AG reportedly closed its 150,000-mt/a capacity plant at Wohlen. The remaining three steelworks, Von Moos Stahl AG (300,000-mt/a capacity), and Von Roll Group (two plants with total 750,000-mt/a capacity) covered nearly 50% of domestic consumption. About 30% of consumption consists of rebar and reinforcing mesh. Consequently, Von Roll expected to close its Monteforno minimill in Bodio and its forge plant in Gerlafingen and intensify production of rebars at the 650,000-mt/a-capacity, newly modernized and expanded plant in Gerlafingen.<sup>3</sup>

Salt was produced by two companies in Switzerland. The 50,000-mt/a-capacity mine at Bex was the exclusive domestic salt supplier for the Vaud Canton. The rest of the country was supplied by the 350,000-mt/a-capacity mine at Schweizerhalle, near Basel in the Alps, managed by the Salt Council, which also controlled the distribution and import of salt. Revenues derived from a set sale price were distributed between cantons according to consumption.

Switzerland is a highly developed country with an excellent network of highways and railways. Because of its geographical location, Swiss highways, totaling 62,145 kilometers (km), bear a high portion of transit traffic. To reduce air pollution, mainly in the Alpine valleys, the Swiss Government proposed a total ban on transit truck traffic by the year 2004. It will be replaced by an expansion of the national rail system, presently measuring 4,418 km. Expansion plans include building a new 57-km-long tunnel under Gotthard pass, extending the tunnel under Simplon pass, and upgrading existing rail lines. These improvements would also help the domestic trucking industry, where a weight limitation (maximum of 28 mt per vehicle) makes road transport comparatively expensive.

<sup>1</sup>Text prepared Apr. 95.

<sup>2</sup>Telefax from Metallum AG. Apr. 25, 1995.

<sup>3</sup>The Economist. "Swiss Industry Mettle Tested." Aug. 27, 1994, pp.58-59.

TABLE 1  
SWITZERLAND: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993 e/	1994 e/
<b>METALS</b>					
<b>Aluminum:</b>					
Primary tons	71,600	65,900	52,100	36,400 r/ 4/	31,000 4/
Secondary do.	34,400	35,800	10,700	4,200 r/	--
<b>Iron and steel:</b>					
Pig iron	129 r/	105 r/	110 r/	110 r/	110
Electric-furnace ferroalloys e/	5	5	5	5	5
Steel, crude	1,110 r/	1,110 r/	1,240 r/	1,260 r/ 4/	800
Semimanufactures, rolled products e/	1,100	1,000	1,000	1,000	700
Lead, refined, secondary tons	5,700	5,000	6,400	6,000 r/	6,350 4/
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic	5,210	4,700	4,260	4,000	4,000
Gypsum e/	230	230	200	200	200
Lime e/	26 4/	40	30	40	40
Nitrogen: N content of ammonia	32	33	31	28 4/	30 4/
Salt	254	250 /e	276	300	300
Sulfur, from petroleum refining tons	3,700 e/	4,000	3,160	3,000	3,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
<b>Petroleum refinery products:</b>					
Liquefied petroleum gas thousand 42-gallon barrels	1,610	2,260	1,990	2,000	2,000
Gasoline do.	6,450	9,810	8,330	8,500	8,500
Naphtha do.	80	--	--	--	--
Jet fuel do.	1,830	2,100	1,960	2,000	2,000
Kerosene do.	15	--	--	--	--
Distillate fuel oil do.	8,480	10,200	9,540	9,500	9,500
Residual fuel oil do.	3,550	6,180	5,520	5,500	5,500
Bitumen do.	872	916	812	800	800
Other refinery products do.	1	--	--	--	--
Refinery fuel and losses do.	882	1,990	2,180	2,200	2,200
Total 5/ do.	23,800	33,500	30,300	30,500	30,500

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; may not add to totals shown.

2/ Table includes data available through May 1995.

3/ In addition to the commodities listed, a variety of crude construction materials (common clay, sand and gravel, and stone) were produced, but output was not reported, and available general information was inadequate to make reliable estimates of output levels.

4/ Reported figure.

5/ Total of listed products only.

TABLE 2  
SWITZERLAND: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Aluisse-Lonza Holding AG	Smelter at Stag	48
Cement	Bundr Cementwerke AG (Holderbank Management and consulting Ltd 100%)	Plant at Untervaz	700
Do.	Cementfabrik Holderbank AG	Plant at Rekingen	700
Lead, secondary	Metallum AG	Smelter at Pratteln	13
<b>Refinery, petroleum</b>			
billion barrels per day	Reffinerie du Sud-Ouest SA (Compagnie Francaise des Petroles 49% and British Petroleum 49%)	Refinery at Collombey	40,000
Do.	Reffinerie de Cressier SA (Kninklijke Nederlandsche Petroleum Maatschappij NV 100%)	Refinery at Cressier	36,000
Salt	Zentralbureau des Vereins der Schweizerischen Rheinsalinen (Government 100%)	Saline at Schweizerhalle	350
Do.	La Societe des Mines (Canton of Vaud 100%)	Saline at Bex	50
Steel	Monteforno Acciaierie e Laminatoi SA (Von Roll Group 93.6%)	Plant at Bodio	380
Do.	Von Roll Group	Plant at Gerlafingen	370
Do.	Von Moss Sthal AG	Plant at Emmenbrucke	300