



# 2008 Minerals Yearbook

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## SWITZERLAND

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# THE MINERAL INDUSTRY OF SWITZERLAND

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Mining, exclusive of industrial minerals for construction, played a minor role in Switzerland's economy. No metal mining took place in 2008 owing to the depletion of metalliferous ores in the past. Metal processing, which was restricted to primary and secondary aluminum, secondary lead, pig iron, and steel, depended on imported raw materials or scrap. Industrial minerals produced by mining and processing included cement, gypsum, and lime, which were used domestically in construction.

Switzerland was a member of the European Free Trade Association, and trade has been the key to prosperity in Switzerland. As the world's 19th ranked exporter, Switzerland shipped \$233 billion worth of exports in 2008. Principal exports in 2008 were agricultural products, chemicals, machinery, metals, and watches. The principal clients were Germany (21.2%), the United States (8.7%), France (8.2%), Italy (7.9%), and Austria (4.5%). Switzerland imported \$213 billion worth of foreign goods in 2008. Major imports included agriculture products, chemicals, fuels, machinery, metals, and vehicles. The principal suppliers were the Netherlands (19.5%), Germany (17.3%), France (11%), the United Kingdom (5.7%), the United States (5.5%), and China (4.1%). In total, Switzerland's international trade amounted to \$446.1 billion (U.S. Central Intelligence Agency, 2009).

## Production

Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Swiss mineral industry was owned privately or by regional governments (Cantons). Regulatory control was administered by the national Government. The 26 regional Cantons granted mining and processing licenses and directly operated electrical generating facilities, gas utilities, and water resource facilities. The final authority for the mineral industry was vested in the Federal Council. Table 2 is a list of major mineral industry facilities with their locations and capacities.

## Commodity Review

### *Metals*

**Aluminum.**—Novelis Inc. of the United States was a global leader in aluminum rolled products. Novelis announced that it had commenced European production using its Novelis Fusion™ technology at its 130,000-metric-ton-per-year (t/yr)-capacity facility in Sierre. With this technology, multiple alloy layers are simultaneously cast into aluminum ingots that will be rolled into sheet products for use mainly by the automobile industry. The facility at Sierre has ingot casting, hot and cold rolling, and heat-treatment capability. The new cast house was considered state of the art for the aluminum industry (Novelis Inc., 2008a).

In 2008, Novelis stated that it had recycled an estimated 39 billion used aluminum beverage cans, which was a new company record. Novelis was the leading recycler of aluminum beverage cans in Europe. By recycling the used containers back into aluminum sheet, Novelis estimated that it reduced its need for primary aluminum by more than 530,000 t/yr, saving about 73 million BTUs of energy and avoiding the production of about 5 million metric tons of greenhouse gases. Used beverage cans accounted for about one-half of all aluminum scrap processed by Novelis each year (Novelis Inc., 2008b).

**Gold.**—Although Switzerland was not a gold miner, it was home to refineries that processed about 40% of the world's newly mined gold. It was reported that there was difficulty in keeping up with demand for gold bullion, as investors were wary of other stores of wealth; this led to long delivery times. The Swiss refineries (Argor-Heraeus S.A. at Mendriso, Produits Artistiques de Métaux Précieux S.A. at Castel San Pietro, and Valcambi S.A. at Balerna) were reported to be operating at full capacity. In Switzerland, which is home to the world's leading private banking industry, demand for gold bars and coins was up sixfold to 21 metric tons in the third quarter of 2008, which was more than any other European country. Also, retail investment in gold rose by 121% in the third quarter of 2008 (Wegmann and Jucca, 2008).

### *Industrial Minerals*

**Cement.**—Holcim (Schweiz) AG was the leading cement, concrete, and gravel producer in Switzerland. Holcim operated seven cement plants and grinding stations and had a production capacity of 3.9 million metric tons per year (Holcim Ltd., 2008).

**Diamond.**—Switzerland was involved in the cutting and polishing of diamond and played a large role in international diamond trade activities. Switzerland was a member of the Kimberley Process Certification Scheme.

From its headquarters in Geneva, the Steinmetz Diamond Group had spread out to the significant diamond markets in the world, which included Belgium, China, India, Israel, Namibia, and South Africa. In 2008, Steinmetz Diamond opened a diamond polishing factory in Gaborone, Botswana, at an estimated cost of \$9 million. At full capacity, the factory could accommodate a workforce of 220 persons (Mining Weekly, 2008).

### *Mineral Fuels*

**Natural Gas.**—In 2008, Iran and Switzerland signed an agreement for Iran to start exporting natural gas to Switzerland. The natural gas agreement was between the Government of Iran and Switzerland's Elektrizitaets-Gesellschaft (EGL). The contract reportedly envisages initially sending about 10 billion cubic meters of gas through the Trans Adriatic Pipeline (TAP) by way of Greece and one of EGL's power stations in Italy. Exports

were expected ultimately to reach a volume of 20 billion cubic meters in 2016. The execution of the agreement, however, depended on the construction of the TAP, which was scheduled to start in 2011. The TAP would connect Greece with Italy and provide better access for Europe to gasfields in the Caspian Sea and the Middle East. The 520-kilometer-long-pipeline was estimated to cost \$2.2 billion (Energy Daily, 2008).

**Petroleum.**—Celtique Energie Ltd.'s 803-square-kilometer Neuchatel permit is located in northwest Switzerland in the Jura region. The permit contained the Cygne Blanc structural prospect. The reservoir objective was the Triassic Bunter Sands, which are thick and porous in nearby wells. An effective top seal is provided by thick overlying lenses of anhydrites and salts. Mean recoverable reserves of 187 million barrels had been estimated. Celtique was planning to drill an exploration well when well permitting approval was obtained (Celtique Energy Ltd., 2008).

### Outlook

The outlook for Switzerland's mineral industry is for little change. Metal mining is not likely to be initiated. Industrial minerals will be produced according to local demand. Limited exploration for natural gas and petroleum is expected to continue. Construction of the TAP is also likely to continue.

### References Cited

- Celtique Energy Ltd., 2008, Operations in Switzerland: Celtique Energie Ltd. (Accessed January 9, 2010, at <http://www.celtiqueenergy.com/operations/switzerland/index.html>.)
- Energy Daily, 2008, Iran and Switzerland sign gas export deal: Energy Daily. (Accessed January 9, 2010, at [http://www.energy-daily.com/reports/Iran\\_Switzerland\\_sign\\_gas\\_export\\_deal\\_999.html](http://www.energy-daily.com/reports/Iran_Switzerland_sign_gas_export_deal_999.html).)
- Holcim Ltd., 2008, Annual report 2008: Holcim Ltd., 199 p. (Accessed January 8, 2010, at [http://www.holcim.com/holcimweb/gc/CORP/uploads/GB\\_08\\_e.pdf](http://www.holcim.com/holcimweb/gc/CORP/uploads/GB_08_e.pdf).)
- Mining Weekly, 2008, Swiss group investing in African sparkle: Creamer Media (Pty) Ltd. (Accessed January 8, 2010, at <http://www.miningweekly.com/print-version-swiss-group-investing-in-africa-sparkle-2008>.)
- Novelis Inc., 2008a, Novelis is the largest recycler of aluminum beverage cans in Europe: Novelis Inc. (Accessed January 8, 2010, at <http://www.novelisrecycling.co.uk/news/2009/95/>.)
- Novelis Inc., 2008b, Novelis starts European production of multi-alloy sheets: Novelis Inc. (Accessed January 8, 2010, at <http://novelis.mediaroom.com/index.php?s=43&item=202>.)
- U.S. Central Intelligence Agency, 2009, Switzerland, *in* The world factbook: U.S. Central Intelligence Agency. (Accessed January 9, 2010, at <https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html>.)
- Wegmann, Arnd, and Jucca, Lisa, 2008, Swiss gold bullion in huge demand as trust in banks dive: Mineweb. (Accessed January 8, 2010, at <http://www.mineweb.co.za/mineweb/view/mineweb/en/page34?0id=75294&sn=Detail>.)

TABLE 1  
SWITZERLAND: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Commodity <sup>3</sup>	2004	2005	2006	2007	2008
<b>METALS</b>					
Aluminum:					
Primary metric tons	44,538 <sup>4</sup>	44,458	40,000	25,000	--
Secondary do.	192	193 <sup>4</sup>	190	175 <sup>r</sup>	50
Iron and steel, metal:					
Crude steel	1,100	1,158 <sup>4</sup>	1,252 <sup>r,4</sup>	1,264 <sup>4</sup>	1,257 <sup>4</sup>
Semimanufactures	700	700	700	700	700
Lead, refined, secondary metric tons	9,000	8,000	9,000	9,000	9,000
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic	3,851 <sup>4</sup>	4,022 <sup>4</sup>	4,000	4,000	4,000
Gypsum	300	300	300	300	300
Lime	75	75	75	75	75
Nitrogen, N content of ammonia	32 <sup>4</sup>	30	30	30	30
Salt	569 <sup>4</sup>	566 <sup>4</sup>	560	560	560
Sulfur, from petroleum refining metric tons	3,000	3,000	3,000	3,000	3,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Petroleum refinery products:					
Liquefied petroleum gas thousand 42-gallon barrels	2,604 <sup>4</sup>	2,285 <sup>r,4</sup>	2,500 <sup>r</sup>	3,000	3,000
Gasoline do.	9,793 <sup>4</sup>	10,695 <sup>r,4</sup>	10,000	10,000	10,000
Distillate fuel oil do.	20,531 <sup>4</sup>	16,180 <sup>r,4</sup>	18,000 <sup>r</sup>	20,000	20,000
Residual fuel oil do.	29,997 <sup>4</sup>	30,000 <sup>r</sup>	30,000 <sup>r</sup>	30,000	30,000
Bitumen do.	800	800	800	800	800
Refinery fuel and losses do.	15,178 <sup>4</sup>	2,321 <sup>r,4</sup>	2,600 <sup>r</sup>	2,500 <sup>r</sup>	2,500
Total <sup>5</sup> do.	78,903 <sup>4</sup>	62,281 <sup>r,4</sup>	63,900 <sup>r</sup>	66,300 <sup>r</sup>	66,300

<sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Table includes data available through January 31, 2010.

<sup>3</sup>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.

<sup>4</sup>Reported figure.

<sup>5</sup>Total of listed products only.

TABLE 2  
SWITZERLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Novelis Inc. (Hindalco Industries Ltd., 100%)	Plant at Sierre	168
Cement	Holcim (Schweiz) AG (Holcim Group, 100%)	Plants (7) at various locations	4,300
Do.	Cementfabrik Holcim AG (Holcim Group, 100%)	Plant at Rekingen	700
Copper metric tons	Schmelzmetall AG	Refinery at Gurtellen	2,400
Gold kilograms	Produits Artistiques de Métaux Précieux S.A. (MKS Finance SA, 100%)	Refinery at Castel San Pietro	425,000
Do.	do. Argor-Heraeus S.A.	Refinery at Mendrisio	NA
Do.	do. Valcambi S.A.	Refinery at Balerna	NA
Lead, secondary	Metallum AG	Smelter at Pratteln (closed)	13
Petroleum, refinery barrels per day	Tamoil (Suisse) S.A. (Colony Capital LLC, 65%, and Government of Libya, 35%)	Refinery at Collombey	72,000
Do.	do. Petroplus Refining Cressier S.A. (The Carlyle Group)	Refinery at Cressier	68,000
Salt	Saline de Bex S.A. (Canton of Vaud, 100%)	Saline plant at Bex	50
Steel	Stahl Gerlafingen AG (Swiss Steel AG, 100%)	Plant at Gerlafingen	650
Do.	von Moos Stahl AG (Swiss Steel AG, 100%)	Plant at Emmenbrucke	300

Do., do. Ditto. NA Not available.

