THE MINERAL INDUSTRY OF

ICELAND

By Harold R. Newman

Owing to abundant hydroelectric and geothermal energy and the lack of domestic resources, the mineral industry of Iceland largely comprised metal production from imported materials. Iceland has few proven mineral resources, although deposits of diatomite were being developed. All production of industrial minerals, with the exception of diatomite, was used by local industries. (See table 1.)

Because of geographic proximity to the European Union and existing trade agreements, most of Iceland's trade was with Europe. The Government held most of the shares in the major mineral enterprises. The remaining enterprises were either foreign owned and locally operated or, for smaller businesses, locally owned and operated. (See table 2.)

Nordic Aluminium (Nordural) went on-stream in June 1998 in what was the first phase of operation with a capacity of 60,000 metric tons per year (t/yr). Nordural was in negotiations with electricity generator Landsvirkjun concerning the expansion of the smelter from 60,000 t/yr to 90,000 t/yr. Nordural was permitted by the Icelandic Government to expand to 180,000 t/yr with two 90,000-t/yr pot rooms (Walawalker, 1998a).

Icelandic Aluminium did not operate at full capacity owing in part, to a shortage of electricity, which affected ferroalloy producer Islenska jarnblendendifelagid hf (Icelandic Alloys Ltd.) more severely. This shortage was due to the lowest rainfall in 18 years causing reduction in hydroelectric power generation. The affected companies had signed to secondary power contracts for part of their energy supply, which risked the suspension of supplies if such a shortage of power occurred (MetalNet, 1999, accessed March 1, 1999, at URL http://www.metalnet.co.uk/egi 2/W3Vlibrary/MO=3/CT=B/RI=00004829).

The entire production of diatomite was supplied by Kisilidjan hf (Diatomite Plant Ltd.) near Lake Myvatn. During the summer months when the lake is not frozen, the diatomaceous earth was pumped from the bottom of the lake and dried in kilns using geothermal energy to a 99% solid diatomaceous earth. Production was limited to specific areas of the lake because of adverse effects on sediment displacement.

All production of pumice was concentrated around Mount Hekla. The largest quarry was operated by Eldber hf. The pumice was 4 meters (m) thick, covered by a 1-m overburden. The density of dry loose pumice was 320 kilograms per cubic meter, suitable for light concrete and building blocks.

Iceland's future industrial development depends on using its abundant hydroelectric and geothermal power. The Government was continuing to encourage foreign investment in energy intensive industries, in particular the aluminum and ferroalloy sectors. Norwegian group Norsk-Hydro was reported to be considering construction of a large greenfield aluminum smelter, and an international consortium that also consisted of Alumix S.p.A. Gränges AB and Hoogovens Group has also been reported to have looked at smelter projects in Iceland (Walawalker, 1998b).

An Icelandic Government/international joint venture of Daimler-Chrysler, Norsk Hydro A/S, and Shell International formed a new company, Icelandic Hydro and Chemical Energy Co., to promote the use of hydrogen as an alternate power source. The company will examine the practical application of hydrogen as a fuel for vehicles, including fishing vessels. It will seek safe ways to produce, distribute, store, and utilize hydrogen fuel (U.S. Embassy, Reykjavik, Iceland, 1999).

References Cited

U.S. Embassy, Reykjavik, Iceland, 1999, Company formed in Iceland to promote hydrogen: U.S. State Department Telegram 0241, February 17, p. 1.

Walawalker, Raoul, 1998a, New smelter warms up in Iceland: Metal Bulletin, no. 333, September, p. 19.

———1998b, New smelter warms up in Iceland: Metal Bulletin, no. 333, September, p. 21.

TABLE 1
ICELAND: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity		1994	1995	1996	1997	1998 e/
Aluminum metal, primary 2/		99,294	100,101	103,800	122,900 r/	162,600 3/
Cement, hydraulic 4/		80,856	81,514	88,200	88,000 e/	86,000
Diatomite		24,566	28,142	25,600	26,000 e/	26,000
Ferrosilicon		66,003	71,410	68,000	68,000 e/	50,000
Nitrogen, N content of ammonia e/		8,966 3/	8,800	9,000	9,000	8,000
Pumice and related volcanic material: e/						
Pumice		23,000	30,000	25,000	25,000	25,000
Scoria		500	500	500	500	500
Salt e/		4,500	4,000	4,000	4,000	4,000
Sand:						
Basaltic	cubic meters	300	1,300	1,200 e/	1,200 e/	1,000
Calcareous, shell	do.	81,451	83,651	82,000 e/	82,000 e/	80,000
Sand and gravel e/	thousand cubic meters	3,600	3,600	3,600	3,600	3,600
Silica dust 5/		13,871	14,346	14,000 e/	14,000 e/	12,000
Stone, crushed:						
Basaltic e/		114,000	91,000	90,000	90,000	90,000
Rhyolite	cubic meters	19,355	16,552	16,500 e/	16,500 e/	16,500

e/ Estimated. r/ Revised.
1/ Table includes data available through March 1999.
2/ Ingot and rolling billet production.
3/ Reported.
4/ Sales.
5/ Byproduct of ferrosilicon.

TABLE 2
ICELAND: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand metric tons)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Icelandic Aluminium [ISAL], (Alusuisse-Lonza Holding Ltd., 100%)	Straumsvik	162
Do.	Nordic Aluminium (Nordural) (Columbia Ventures Corp., 100%)	Grundartangi	60
Cement	Sementsverksmidja Rikisins (Government, 100%)	Akranes	115
Diatomite	Kisilidjan hf [Diatomite Plant Ltd.] (Government, 98%)	Myvatnssveit	27
Fertilizer	Aburdarverksmidja Rikisins (Government, 100%)	Gufunes	60
Ferrosilicon	Islenska jarnblendendifelagid hf [Icelandic Alloys Ltd.] (Government, 55% and Elkem A/S, 30%)	Plant at Grundartangi	72
Pumice	Eldber hf (Jardenfnaidnadur hf, 51%)	Mount Hekla	210
Do.	Pumice Products Ltd. (BM Valla Ltd., 100%)	do.	32
Salt	Icelandic Salt Co. (Akzo NV of Netherlands, 58%)	Plant at Svartsengi	5