



2011 Minerals Yearbook

ESTONIA

THE MINERAL INDUSTRY OF ESTONIA

By Alberto Alexander Perez

In 2011, Estonia's economy continued to recover from the effects of the world financial crisis, Estonia's gross domestic product (GDP) increased by 7.6% in 2011 compared with that of 2010. Mining and quarrying activities accounted for only about 1.2% of the total GDP. Estonia was not rich in natural resources, but the country had one of the world's few rare-earth metals processing plants located outside of China and was one of the few countries in the world that produced oil shale (Statistics Estonia, 2012, p. 30, 188).

Silmet AS began production of rare-earth metals in 1970 and had the capacity to produce up to 3,000 metric tons per year (t/yr) of rare-earth products and 700 t/yr of rare-metal products. The company produced cerium, lanthanum, neodymium, praseodymium, and samarium-europium-gadolinium products as well as niobium and tantalum metal chips, ingots, metallic hydrides, and powders. In April 2011, Molycorp Minerals LLC (a subsidiary of Molycorp, Inc of Mountain Pass, California) purchased a 90.023% share of Silmet AS for about \$89 million (Molycorp, Inc., 2011; Silmet AS, 2012a–d).

The use of oil shale provided Estonia with a relatively high degree of energy security for the region. Esti Energia AS produced about 94% of Estonia's oil shale. A significant amount of carbon dioxide was produced when oil shale was used to produce heat and electricity, and Estonian law restricted mining

of oil shale to 20 million metric tons per year (Mt/yr). One of the objectives the National Development Plan for Oil Shale Use in Estonia for 2008–2015 was to reduce oil shale production to 15 Mt/yr by 2015, so future production of oil shale could be reduced due to environmental concerns (Eesti Energia AS, 2012, p. 17–18; Statistics Estonia, 2012, p. 318).

References Cited

- Eesti Energia AS, 2012, Annual report 2011: Eesti Energia AS, 134 p. (Accessed November 9, 2012, at https://www.energia.ee/-/doc/10187/pdf/concern/annual_report_2011_eng.pdf.)
- Molycorp, Inc., 2011, Molycorp acquires controlling stake in AS Silmet, expands operations to Europe, doubles near-term rare earth oxide production capacity: Molycorp, Inc. press release, April 4. (Accessed February 7, 2012, at [http://us1.campaign-archive1.com/?u=a9e8676e87fad805702b98564&id=f30210c38c&e=\[UNIQID\].](http://us1.campaign-archive1.com/?u=a9e8676e87fad805702b98564&id=f30210c38c&e=[UNIQID].))
- Silmet AS, 2012a, History: Silmet AS. (Accessed February 6, 2012, at <http://www.silmet.ee/default.aspx?m1=48&m2=52&id=28&lang=1.>)
- Silmet AS, 2012b, Overview: Silmet AS. (Accessed February 6, 2012, at <http://www.silmet.ee/default.aspx?m1=48&m2=52&id=28&lang=1.>)
- Silmet AS, 2012c, Production: Silmet AS. (Accessed February 6, 2012, at <http://www.silmet.ee/default.aspx?m1=45&lang=1.>)
- Silmet AS, 2012d, Rare earth metals: Silmet AS. (Accessed February 6, 2012, at <http://www.silmet.ee/default.aspx?m1=45&m2=85&lang=1.>)
- Statistics Estonia, 2012, Statistical yearbook of Estonia 2012: Statistics Estonia, July, 440 p. (Accessed November 2, 2012, at http://www.stat.ee/publication-download-pdf?publication_id=29873.)

TABLE 1
ESTONIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2007	2008	2009	2010	2011	
Cement:						
Clinker (sold production)	302,700	324,000	314,000	209,000	381,000	
Portland, other	937,400	808,000	326,200	375,000	449,000	
Clays:						
For brick	cubic meters	214,000 ^e	138,106	70,000	70,000 ^e	70,000 ^e
For cement	do.	51,900 ^e	33,494	15,000	15,000 ^e	15,000 ^e
Coke, electrode		39,916	35,380	29,900 ^r	22,400	22,000 ^e
Crushed stone used for concrete aggregates, for roadstone, and for other construction use		8,855,800	7,891,000	5,400,300	5,752,600 ^r	6,196,300
Dolomite:						
For building	cubic meters	356,000	329,634 ³	200,000 ³	200,000	200,000
For finishing	do.	2,720	2,519 ³	1,000 ³	1,000	1,000
For industry (technological limestone)	do.	210,000	194,447 ³	100,000 ³	100,000	100,000
Fuel oil		436,600	444,800	489,300	530,000 ^e	530,000 ^e
Gravel, pebbles, shingle and flint	cubic meters	1,229,900	717,000	1,563,300 ^r	1,252,000 ^r	1,251,680
Lead, metal, secondary		10,000	10,000	9,176	10,718	7,840
Lime		43,500	59,400	24,100	27,200	20,200
Limestone:						
For building	cubic meters	2,750,000	2,627,741 ³	1,200,000 ³	1,200,000	1,200,000
For cement	do.	480,000	458,661 ³	200,000 ³	200,000	200,000
For industry (technological limestone)	do.	126,000	120,398 ³	80,000 ³	80,000	80,000
Niobium, metal, chips		NA	NA	NA	NA	NA
Nitrogen, N content of ammonia		66,746	78,912	50,000	50,000 ^e	--
Oil shale	thousand metric tons	16,393	16,117	14,939	17,934	17,900 ^e
Peat, all uses ^{3,4}		964,000	732,700	859,700	965,000	960,000 ^e
Of which:						
For fuel		475,000	213,400	328,000	360,800	360,000 ^e
Briquets		128,400	67,500	45,300	45,000 ^e	45,000 ^e
Rare-earth metals ^e		3,000	3,000	3,000	3,000	3,000
Sand and gravel	cubic meters	5,275,900	4,750,800	3,000,000	3,000,000 ^e	NA
Silica sand (technological sand)	do.	--	--	--	36,000	NA
Sulfuric acid	kilograms	NA	NA	--	--	--
Tantalum, metal, chips		NA	NA	46	36	36 ^e

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. NA Not available. -- Zero.

¹Table includes data available through October 11, 2012.

²In addition to the commodities listed, Estonia produces sulfur, but available information is inadequate to make estimates of output.

³Reported figure

⁴It can be assumed that the portion of total peat production not used as fuel is used in agricultural applications, although this is not specified.