



2012 Minerals Yearbook

ESTONIA

THE MINERAL INDUSTRY OF ESTONIA

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In 2012, Estonia's gross domestic product (GDP) increased by 3.2% compared with that of 2011. The GDP composition by sector was as follows: services, 66.4%; industry, 29.7%; and agriculture, 3.9%. In 2011 (the latest year for which data were available), mining and quarrying activities accounted for only about 1.2% of the total GDP (Statistics Estonia, 2012, p. 30, 188; 2013, p. 310; U.S. Central Intelligence Agency, 2013).

Production

Estonia is not rich in natural resources, but the country had one of the world's few rare-earth metals processing plants located outside of China. Estonia was also one of the few countries in the world that produced oil shale. Oil shale production was important for Estonia's economy because 80% of the oil shale extracted was used for the production of electrical and heat energy, and more than 90% of all electricity produced in Estonia was produced by the use of oil shale (Estonian Ministry of the Environment, 2013; Statistics Estonia, 2012, p. 30, 188; 2013, p. 310).

Structure of the Mineral Industry

Estonia was not a significant producer or processor of mineral commodities in the world. The country produced mostly construction materials, secondary lead from battery recycling, oil shale, and peat for domestic consumption. AS Kunda Nordic Tsement, which was a subsidiary of HeidelbergCement Sweden AB of Sweden (a subsidiary of HeidelbergCement AG of Germany) and of CHR Europe Holding BV of the Netherlands, was the only cement plant in Estonia. AS Tootsi Turvas (Tootsi), which was owned by Vapo OY of Finland, was Estonia's leading peat milling and export enterprise, measured by volume of output. In April 2011, Molycorp Minerals LLC (a subsidiary of Molycorp, Inc. of the United States) purchased a 90.023% share of rare-earth minerals producer Silmet AS for about \$89 million; the company was renamed AS Molycorp Silmet. Eesti Energia Tehnoloogiatoostus had two shale oil plants in Narva with a combined capacity of 3,400,000 barrels per year (bbl/yr), and VKG Oil AS (part of Viru Keemia Group AS) had a shale oil plant in Kohtla-Jarve with a capacity of 1,840,000 bbl/yr. In December 2012, AS Nitrofert restarted ammonia and urea production at its plant at Kohtla-Jarve that had been idle for several years (Molycorp, Inc., 2011; Silmet AS, 2012a–d).

Industrial Minerals

Cement.—Kunda Nordic Tsement's plant in Kunda had been producing cement and construction aggregates since 1992. In 1999, the company invested in the construction of a local powerplant that operated on natural gas. In 2011 (the latest year

for which data were available), the company had recorded sales of 838,000 metric tons (t) of cement and clinker (AS Kunda Nordic, 2014).

Nitrogen (Ammonia).—In December, AS Nitrofert (a fertilizer company based in Kohtla-Jarve) reopened plant operations in Ida-Viruma after a closure that had lasted 4 years because of poor economic returns in the ammonia and urea market. The company would again use natural gas imported from Russia as its raw material (Estonian Public Broadcasting, 2012).

Peat.—Tootsi was the major producer of peat in Estonia. In 2011 (the latest year for which data were available), the company produced an estimated 800,000 t of peat (including bales, block, fuel mill, horticultural, and sod). The company produced its peat in Ellamaa, Lavassaare, Peningi, Puhatu, and Ulila (AS Tootsi Turvas, 2014).

Rare Earths.—Molycorp Silmet 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 (Molycorp, Inc., 2011; Silmet AS, 2012a–d).

Mineral Fuels and Other Sources of Energy

Oil Shale.—The volume of oil shale production in Estonia did not change much in the past 2 years. Oil shale was consumed mostly in powerplants and as a raw material for shale oil. Nearly 80% of the production of shale oil was exported, mostly to the Netherlands (34%), Belgium (21%), and Denmark (14%) (Statistics Estonia, 2013, p. 310). Eesti Energia AS produced about 94% of Estonia's oil shale. A significant amount of carbon dioxide is produced when oil shale is used to produce heat and electricity; consequently, Estonian law restricts 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 is to reduce oil shale production to 15 Mt/yr by 2015, so future production for domestic consumption of oil shale is likely to be reduced because of environmental concerns (Eesti Energia AS, 2012, p. 17–18; Statistics Estonia, 2013, p. 318).

Outlook

Estonia's reliance on oil shale is likely to continue unless the country finds an alternative fuel to use to produce electricity. Also, although the National Development Plan for Oil Shale Use calls for a reduction in oil shale production, Estonia's output of oil shale could increase as international demand for the oil produced from it increases and Estonia increases its exports in response.

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TABLE 1
ESTONIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2008	2009	2010	2011	2012 ^e
Cement:					
Clinker (sold production)	324,000	314,000	209,000	381,000	380,000
Portland, other	808,000	326,200	375,000	451,000 ^{r,3}	450,000
Clays:					
For brick cubic meters	138,106	70,000	70,000	70,000	70,000
For cement do.	33,494	15,000	15,000	15,000	15,000
Coke, electrode	35,380	29,900 ^r	22,400	22,000	22,000
Crushed stone used for concrete aggregates, for roadstone, and for other construction uses	7,891,000	5,400,300	5,752,600	6,196,300	6,200,000
Dolomite:					
For building cubic meters	329,634 ³	389,000 ^{r,3}	390,000 ^{r,3}	390,000	390,000
For finishing do.	1,300 ^{r,3}	3,200 ^{r,3}	4,700 ^{r,3}	4,500 ^{r,e}	4,500
For industry (technological limestone) do.	146,000 ^{r,3}	87,000 ^{r,3}	74,000 ^{r,3}	75,000 ^{r,e}	75,000
Fuel oil	444,800	489,300	524,300 ^r	559,900 ^r	560,000
Gravel, pebbles, shingle and flint cubic meters	717,000	1,563,300 ^r	1,252,000 ^r	1,251,680	1,250,000
Lead, metal, secondary	10,000	9,176	10,718	7,840	7,800
Lime	59,400	24,100	27,200	36,100 ^{r,e}	36,000
Limestone:					
For building cubic meters	2,627,741 ³	1,200,000 ³	1,200,000	1,200,000	1,200,000
For cement do.	458,661 ³	200,000 ³	200,000	200,000	200,000
For industry (technological limestone) do.	120,398 ³	80,000 ³	80,000	80,000	80,000
Niobium, metal, chips	NA	NA	NA	NA	NA
Nitrogen, N content of ammonia	78,912	-- ^{r,e}	-- ^{r,e}	--	--
Oil shale thousand metric tons	16,117	14,939	17,934	18,700 ^r	18,700
Peat, all uses ^{3,4}	732,700	859,700	965,000	926,700 ^r	927,000
Of which:					
For fuel	213,400	328,000	360,800	360,000	360,000
Briquets	67,500	45,300	83,600 ^r	74,800 ^r	74,800
Rare-earth metals ^e	3,000	3,000	3,000	3,000	3,000
Sand and gravel cubic meters	4,750,800	3,000,000	3,000,000 ^e	NA	NA
Silica sand (technological sand) do.	--	--	36,000	NA	NA
Sulfuric acid kilograms	NA	--	--	--	--
Tantalum, metal, chips	NA	46	36	36 ^e	36

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

¹Table includes data available through July 30, 2013.

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

TABLE 2
ESTONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facility	Annual capacity
Ammonia		AS Nitrofert	Plant in Ida-Viruma	100
Cement		AS Kundra Nordic Tsement (HeidelbergCement Sweden AB 75%, and CRH Europe Holding BV, 25%)	Plant in Kunda	NA
Peat		AS Tootsi Turvas (Vapo OY, 100%)	Ellamaa, Lavassaare, Peningi, Puhatu, and Ulila	NA
Rare earths	metric tons	AS Molycorp Silmet (Molycorp Minerals LLC, 90.02%)	Plant in Sillamae	3,000
Shale oil	barrels per year	Eesti Energia Tehnoloogiatoostus	2 plants in Narva, of which:	3,400,000
Do.	do.	do.	Enefit140	(1,500,000)
Do.	do.	do.	Enefit280	(1,900,000)
Do	do.	VKG Oil AS (Viru Keemia Grupp AS, 100%)	Plant in Kohtla-Jarve	1,840,000

Do. do. Ditto. NA Not available.