



2006 Minerals Yearbook

ESTONIA, LATVIA, AND LITHUANIA

THE MINERAL INDUSTRIES OF ESTONIA, LATVIA, AND LITHUANIA

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ESTONIA

In 2006, Estonia continued its economic expansion with the gross domestic product (GDP) increasing by 9.8% compared with that of 2005 (U.S. Department of State, 2007). Estonia's mining industry was primarily engaged in extracting oil shale, peat, and industrial minerals, which included clays, limestone, and sand and gravel.

The AS Silmet plant in northeastern Estonia was one of the leading rare metals and rare-earth metal producers in Europe. Silmet employed about 550 people. The plant included a factory for rare-earth metals separation, a factory for rare metals production, and a metallurgical factory. The factory for rare-earth metals separation produced such products as fluorides, hydroxides, oxides, carbonates, and solutions, as well as liquid nitric fertilizers. The factory for rare metals produced rare metals, hydroxides, oxides, and ammonium bifluoride. The metallurgical factory produced metallic products, which included niobium and tantalum chips, metallic powders and hydrides, and rare-earth metal products, which included neodymium metal ingots, neodymium ferroboration alloys, and mischmetal. About 99% of the raw materials used in production at Silmet were imported and 99% of the products sold were exported (AS Silmet, 2008).

Estonia met more than 90% of its electricity needs with locally mined oil shale. The country imported all its natural gas and petroleum, which equaled about 30% of its total energy consumption, from Russia. Alternative energy sources, which included biomass, peat, and wood, made up about 9% of primary energy production. An undersea electricity cable commissioned in December 2006 allowed Estonia to export electricity to Finland (U.S. Department of State, 2007).

Estonia had 64 ports along its coast, 31 of which handled commercial shipping and were open to vessels from other countries. Oil refinery products from Russia made up more than 50% of the cargo handled at the country's ports. The Port of Tallinn was the country's largest port in terms of freight handled. In the area of mineral shipments, Muuga Harbor, which was the main cargo handling harbor for the Port of Tallinn, handled crude oil and petroleum refinery products. Paldiski South Harbor of the Port of Tallinn handled scrap metal, Paljassaare Harbor of the Port of Tallinn handled petroleum refinery products and coal, Kunda Port handled cement, Sillamäe Port handled metals and petroleum refinery products, and AS Parnu Sadam Port handled peat (Enterprise Estonia, 2008).

Production

Silmet, which was Estonia's main metal-producing enterprise, annually produced up to 3,000 metric tons (t) of rare-earth products and 700 t of rare metal products (AS Silmet, 2008). Silmet was reportedly one of the world's leading producers of

niobium metal chips (Sillamäe, 2007). Estonia was the leading producer of oil shale in Europe and had been mining high-grade marine oil shale (kukersite of Ordovician age) for many years. In 2006, more than 14 million metric tons (Mt) of oil shale was mined from several underground and open pit mines (table 1). About 85% of the oil shale was burned as fuel in several large electric powerplants in northeastern Estonia. The remainder was retorted for shale oil, which is used in the manufacture of fuels and petrochemicals (Dyini and Johnson, 2006). Oil shale production decreased by about 3% in 2006 compared with that of 2005. Cement production increased in 2006 in line with the country's economic growth; production data for other construction materials was lacking for 2006, although annual data had been reported in the past.

Structure of the Mineral Industry

Most of Estonia's mineral production was privately owned. Silmet was privatized in 1997 (AS Silmet, 2008). In 2005, the Estonian Silmet Group sold its majority holding in Silmet to Zimal SA of Switzerland, which controlled the Revda loparite mine (located in Russia) and the Solikamsk magnesium works (also located in Russia) through the Russian holding company Mineral Group (Estonian Economy, 2006). Oil shale production was under the control of Eesti Energia, which was a state-owned company engaged in the production, sale, and transmission of electric power. The oil shale, which was extracted from mines owned by Eesti Energia, was the company's main raw material for energy production (Eesti Energia, 2008). Oil shale production was conducted by Eesti Põlevkivi [Estonian Oil Shale Company], which was a subsidiary of Eesti Energia (Oil Shale Symposium 2009).

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LATVIA

Latvia had the Baltic states' only steel mill. Other mineral commodity production was confined to industrial minerals used in construction, peat extraction, and production of a small amount of natural gas. In 2006, the country's GDP increased by 11.9% compared with that of 2005 (U.S. Central Intelligence Agency, 2008).

Latvia's major role in the world mineral economy was as a transshipper of mineral products. The country's three main ports are Liepaja, Riga, and Ventspils, all of which mostly transited cargoes to and from the Commonwealth of Independent States (CIS) countries.

In terms of the volume of transshipments, Ventspils was the largest port in Latvia as well as on the Baltic Sea. Ventspils handled more than 25 Mt of cargo in 2006, which included crude oil, petroleum products, and potash. Ventspils Nafta Terminal LTD was the Baltic Sea region's leading oil and petroleum product transshipment terminal. Crude oil and petroleum products are received by pipeline and railways. The tank farm capacity of the enterprise exceeded 1 million cubic meters, which enabled the clients of the terminal to store products in case there was no immediate transshipment possibility owing to conditions (such as weather) or in expectation of a better market price. The terminal also included among its services chemical analysis of oil and petroleum products in the company laboratory (Ventspils Freeport Authority, 2008).

The Freeport of Riga, which is the country's second largest port, handled such cargo as mineral fertilizers, petroleum products, and various metals. About 80% of the products handled were transshipped to and from the CIS (Riga Freeport Authority, 2008).

The Port of Liepaja handles one-third less cargo than the Freeport of Riga. Its mineral product cargo is mainly metals and mineral fertilizers.

Production

The growth in Latvia's economy appeared to spur an increase in the production of mineral commodities used in infrastructure development, although information on the production of cement and steel was not reported for 2006. Data on mineral production are provided in table 1.

Structure of the Mineral Industry

The Ports of Riga and Ventspils operated as freeports and the Port of Liepaja was part of the Liepaja Specialized Economic Zone. The country's only steel mill, Liepajas Metalurg, was the country's main mineral industry enterprise; it was a public joint-stock company (Liepajas Metallurģs, 2007).

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LITHUANIA

Lithuania's main mineral commodity production enterprises were its nitrogen fertilizer enterprise in Jonava and its petroleum refinery near Mazeikiai. The country also produced industrial mineral products, which included cement, clays, and sand and gravel, and mineral fuels, which included peat and crude petroleum. Lithuania had the Baltic states' only nuclear powerplant at Ignalina, which generated more than 85% of the electric power produced in Lithuania. The reactors at the plant, however, are of the RBMK-2 model, which is the model that was involved in the accident at the Chernobyl plant in Ukraine (Energy Daily, 2007).

The country's Port of Klaipeda was a major transshipment center for mineral products, and, in particular, fertilizers and crude oil and petroleum products. The completion of upgrades at the Butinge terminal at the Port of Klaipeda, which is connected to the Russian oil pipeline system, increased the country's ability to export crude oil and petroleum refinery products from Russia (U.S. Energy Information Administration, 2006).

Production

In 2006, Lithuania's GDP grew at a rate of 7.5%, which stimulated production of construction materials used in building the country's infrastructure. Most industrial minerals used in construction experienced an increase in output compared with that of 2005. Production of most fuels decreased somewhat in 2006, however, compared with that of 2005. In June, Russia cut off pipeline supplies to Lithuania's Mazeikiu Nafta refinery reportedly owing to technical problems caused by an accident on the pipeline that supplied the refinery. The accident took place shortly after the sale of the refinery to the Polish refiner PKN Orlen (Graham, 2006). The refinery then had to transport oil from Butinge—a distance of 90 kilometers (Interfax Central Europe News Agency, 2007). Additional data on mineral production are provided in table 1.

Achema AB, a nitrogen fertilizer and chemical products manufacturer, was the country's other major mineral production enterprise. Its production of fertilizers exceeded 2 Mt/yr and included compound and nitrogenous fertilizers (Achema AB, 2008a).

Structure of the Mineral Industry

Yukos International UK BV, a United Kingdom-based subsidiary of the Russian oil producer Yukos Oil, sold its Lithuanian refinery Mazeikiu Nafta to the Polish refiner PKN Orlen in December 2006. PKN Orlen was the leading oil refiner in Central Europe and was part-owned by the Polish Government. PKN Orlen owned a number of refineries and gas stations in the Czech Republic, Germany, and Poland. Mazeikiu Nafta, which was one of Lithuania's most important strategic assets, had been purchased by the Yukos Oil subsidiary in 2002. In December 2003, Yukos' head office in Russia was presented with the first of several very large tax bills, which bankrupted Yukos within a year. The Russian state oil firm Rosneft purchased much of Yukos' debt and demanded a say in any potential sale of Mazeikiu Nafta. Yukos' UK subsidiary contested Rosneft's claim in a legal dispute that was decided in favor of the sale to PKN Orlen (Moldova.org, 2006).

Achema AB, Lithuania's nitrogen fertilizer enterprise, was privatized in 1994; Achema AB employed more than 1,600 employees in 2006 (Achema AB, 2008b).

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TABLE 1
ESTONIA, LATVIA, AND LITHUANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity	2002	2003	2004	2005	2006	
ESTONIA²						
Cement:						
Clinker	169,800	157,300	113,100	88,800	65,100	
Portland, other	465,900 ^r	506,200	614,600 ^r	726,000 ^r	848,900	
Clays:						
For brick	thousand cubic meters	149,200	134,900	136,600	151,800 ^r	NA
For cement	do.	19,000	27,300	31,600	37,200 ^r	NA
Coal	thousand metric tons	12,401	14,896	13,989	14,588	14,188
Coke, electrode		30,000	30,000	35,600	38,700	40,000
Dolomite:						
For building	cubic meters	NA	291,200	323,400	261,700	NA
For finishing	do.	NA	3,200	1,300	2,000	NA
For industry (technological limestone)	do.	NA	150,800	171,900	155,300	NA
Fuel oil		301,800	317,600	338,500	367,400	389,200 ^p
Gravel, pebbles, shingle and flint	cubic meters	NA	NA	NA	597,100	NA
Lead, metal, secondary		NA ^r	NA ^r	3,000	7,000 ^e	9,000 ^e
Lime		32,000	31,000	34,000	37,000	39,700
Limestone:						
For building	cubic meters	NA	1,255,000	1,547,000	1,922,000	NA
For cement	do.	366,200	372,200	430,500	335,100 ^r	NA
For industry (technological limestone)	do.	NA	62,500	93,900	86,300	NA
Natural gas, dry	million cubic meters	NA	NA	NA	NA	1,456 ^p
Nitrogen, N content of ammonia		38,700	80,800	166,000	170,000	170,000 ^e
Oil shale	thousand metric tons	12,400	14,618 ^r	13,910 ^r	14,534 ^r	14,138
Peat	do.	1,519 ^r	1,089 ^r	769 ^r	1,034 ^r	1,196
For fuel	do.	626	534	418	490	585 ^p
Briquettes	do.	128	120	65	61	97 ^p
Rare-earth products ^c		3,000	3,000	3,000	3,000	3,000
Sand and gravel	thousand cubic meters	2,033	4,470	3,131	2,186 ^r	NA
Silica sand, industrial		22,500	41,300	49,800	53,800 ^r	38,000 ^e
Sulfur		NA	NA	NA	NA	NA

See footnotes at end of table.

TABLE 1—Continued
ESTONIA, LATVIA, AND LITHUANIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity	2002	2003	2004	2005	2006
LATVIA					
Cement	260,397	295,205	283,647	280,000	280,000 ^c
Crushed rock	NA	NA	NA	414,305	586,607
Gravel, pebbles, shingle and flint of a kind used for concrete aggregates; for road or for railway and other ballast	--	3,070,709	2,094,017	2,817,287	3,824,965
Gypsum	217,074	159,133	225,742	220,000 ^c	230,000 ^c
Limestone	393,285	431,590	443,987	420,000 ^c	NA
Natural gas, dry million cubic meters	NA	NA	NA	NA	1,876 ^p
Peat	1,484,970	1,076,142	823,938	829,865 ^r	931,103
Sand and gravel	761,614	1,981,431	1,875,494	3,242,199 ^r	2,132,779
Silica sand, industrial ^f	50,000	50,000	50,000	50,000	50,000
Steel, crude	507,194	545,626	553,684	550,000 ^c	550,000 ^c
LITHUANIA					
Cement, portland, other	605,800	596,900	753,100	832,076 ^r	1,065,367
Clays	NA	240,800	228,100	289,500	385,300
Granules, chippings and powder of stones, excluding marble	NA	NA	NA	4,316	10,390
Limestone	984,300	944,600	1,385,600	1,242,200	1,776,300
Marble granules, chippings and powder	NA	NA	NA	666	1,167
Natural gas, dry million cubic meters	NA	NA	NA	NA	2,884 ^p
Nitrogen, N content of ammonia	468,300	461,800	424,000	431,700	453,300
Peat	513,000	366,900	367,900	536,200 ^r	471,400
Petroleum:					
Crude	433,700	382,800	301,900	216,634 ^r	180,894
Refinery products	6,447,700	6,703,000	7,682,600	8,518,500	7,709,800
Sand and gravel:					
Construction sands	NA	NA	NA	3,689,217	4,342,743
Gravel, pebbles, shingle and flint	NA	NA	NA	3,345,185	3,290,568
Silica sand, industrial	63,000	49,700 ^r	58,300 ^r	46,500 ^r	42,600

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

¹Table includes data available through November 30, 2007.

²In addition to the commodities listed, Estonia produces niobium, sulfur, and tantalum, but available information is inadequate to derive estimates.