

Ecological environment

Waste management in Estonia

Rubbish is something we come into contact with every day – it is something all of us produce. In order to maintain the value of our living environment and to ensure that it is environmentally friendly, it is vital that we bring waste management into compliance with current requirements.

Waste management is an issue that the Ministry of the Environment has paid special attention to over the last three years. New legislation has been developed, as has the network of waste management centres around the country. The new Waste Act came into force on 1 May 2004 (www.riigiteataja.ee/ert/act.jsp?id=12894710), and a new Packaging Act was introduced exactly one month later (www.riigiteataja.ee/ert/act.jsp?id=918049). These Acts and their attendant regulations were adopted from European Union legislation on waste.

The special focus between 2003 and 2006 was one the implementation of measures designed to introduce new waste-based legislation, including the promotion of recycling and reuse and the establishment of new waste management centres meeting the latest environmental requirements. Another issue was implementing producer's responsibility on certain waste flows such as those from packaging, waste electric and electronic equipment, end-of-life vehicles and end-of-life tires, waste batteries and accumulators.

The number of waste centres not meeting requirements has decreased significantly in recent years. While only three of the 59 dumps and other waste management facilities that were operating at the beginning of 2003 met all of the requirements, eight of the 30 operating at the end of 2006 were in full compliance. Work has begun on three new modern regional household waste centres since 2004, in Ikala, Tallinn and Paikre. Construction of these centres has seen the development of complex waste management, with sorting of waste and composting of biodegradable materials in addition to ordinary landfill. A large number of old landfills and centres that did not meet requirements have been closed (the largest of these are Pääsküla landfill in Tallinn, Kotinuka landfill in Jõhvi and the landfill of Pärnu). Particularly wide-ranging work has been undertaken as well to rehabilitate the radioactive waste storage facility in Sillamäe. Moreover, 15 waste management stations have been built for the collection and distribution of waste to recycling centres or landfill. Several more are currently under construction or in the planning phase. More than 750 million EEK was invested in the development and organisation of waste management between 2003 and 2006, from a number of sources, including the Environmental Investment Centre, the state budget, the European Union and project developers themselves.

There has been a continuous increase in the sorted collection of waste, and the proportion of waste delivered to dumps for landfill has decreased. Whereas in 2000 almost all household waste was used for landfill, that figure has now fallen to two-thirds. The remainder is recycled or exported for reuse elsewhere.

A national system for the collection of dangerous waste has also been implemented. Larger centres have their own collection points, where anybody can deposit their dangerous household waste (such as light bulbs, old batteries, chemicals, oil and medicines). At the beginning of 2003 there were 41 companies licensed to treat dangerous waste in Estonia, but since then that number has risen to 107, with 27 of them being licensed demolition teams (2006).

2005 was the year of initiation of the national system of collection and recycling of packaging waste. Work in this area was begun by three packaging material recycling groups accredited by the Ministry of the Environment – the non-profit organisations Eesti Taaskasutusorganisatsioon and Eesti Pakendiringlus, and the company OÜ Eesti Pandipakend – to whom packaging companies could hand over packaging and packaging waste collection and recycling duties. In order to achieve the aims of the Packaging Act, a returns system was implemented as an economic measure on 1 May 2005 as part of which refunds would be issued on glass and plastic bottles and tin cans for beer, low-ethanol alcoholic drinks and soft drinks. 1 July 2005 saw the adoption of packaging excise on all types of sales packaging, not just alcoholic and soft drinks, if not recycled in the amount set out in legislation. A European Union-funded twinning project, *Development of a collection and recycling system for packaging and packaging waste in Estonia*, was carried out in association with the Austrian Environmental Agency between 2005

and 2006. The project focused on setting strategic goals in this area and developing an information system (a packaging register). A training programme for officials connected to the field was held, which mainly looked at supervision and European reporting. Experts from Austria's Environmental Agency, Ministry of the Environment and ARA recycling organisation and from Vienna City Government shared their experiences with their local colleagues. A media campaign entitled *Keep packaging moving* was also launched in the course of the project. The primary focus was on raising the awareness of local government officials, but a related website was also established for both Estonian and Russian speakers (www.taaratark.ee) and an educational film was made for school students.

Consumer information on the website www.tartutarbija.ee :

- 1) *How can you influence on climat changes? What can you do to decrease climat change?* <http://ec.europa.eu/environment/climat/campaign/index-et.htm>
- 2) *Sustainable water consumption* www.keskkonnaveeb.ee/keskkonnasõber
- 3) *Save the water* Kuidas saaksid Sina vett kokku hoida
- 4) *How do decrease water pollution Veereostuse vähendamise*
- 5) *The sea begins from your bathroom* Roheline pesutaus
- 6) *How do decrease the production of waste?* www.keskkonnaveeb.ee keskkonnasõber
- 7) *Leaflet Prefer environmental friendly products instead of dangerous chemicals* Voldik Eelista loodussõbralikke tooteid ohtlike kemikaalide asemel
- 8) *Environmetal friendly washing detergents* www.keskkonnaveeb.ee/keskkonnasõber/kks.php?artk=2_3
- 9) *Opinion of consumer about GM crops* Tarbija arvamused GM-põllukultuuridest
- 10) *Collect dangerous waste separately, Dangerous waste* www.keskkonnaveeb.ee keskkonnasõber

Radioactive waste in Estonia

On the territory of the Republic of Estonia is not any working nuclear power station and according to the program of energy management building of these stations is not planned. There aren't also any training reactors and any other buildings and plants that recycle nuclear fuel, however in Estonia is an old military nuclear object in Paldiski which is a relict from Soviet Union and in Tammiku, North-Eastern Estonia is a storage of radioactive waste which is not in correspondence with nowadays regulations.

Amounts of radioactive waste and their activities that arise from industry, medicine and scientific research are small in Estonia at present time. Only action that produces waste containing natural radio nuclides is production of rare earths by Silmet Group Limited Company.

Considerable amount of radioactive waste arise also in the process of deactivation and dismantling of Paldiski object. 26.09.1995 the Paldiski object was given over to the Republic of Estonia from the Federation of Russia. According to the agreement, Federation of Russia removed nuclear fuel from reactors and dismantled training stands. Only both submarine sections containing nuclear reactors were leaved. Sarcophaguses of reinforce concrete were built around these reactors. Dismounting and building works that were done by Federation of Russia before the object was given over to the Republic of Estonia must guarantee safety and stability of reactors at least for 50 years. However, analysis and estimations provided after the object was given over showed that depository conditions of reactors are not in accordance with contemporary international safety regulations.

In 1999 started a project of European Commission with the purpose to ascertain possible continuities for the sarcophages and also to give evaluations about the cost of these continuities. According to preliminary recommendations of this project from the viewpoint of radiation safety is useful to wait at least 50 years so that main radio nuclides can decay. Supplementary was underlined that the state of sarcophages needs certainly improvement, especially when a prolonged storage period is planned. On

the basis of this investigation and according to the recommendation of the commission of experts about the treatment of radioactive waste in December 2005, within the frames of a EU PHARE Project, designing and building of the Paldiski object started. The purpose of this work is to ensure really secure storage of reactors and radioactive waste for at least 50 years. The final purpose is long-lasting action plan for former nuclear object of Paldiski is to relocate radioactive waste, including the radioactive waste that comes from dismantling of reactor sections, into the final depository of radioactive waste that must be built for this purpose.

Precursor of the Silmet Group Limited Company was enterprise No P-6685. Radiation practice in 1946-1995 was directly not related with the manufacturing of uranium but nevertheless this practice included raw materials that contained radioactive waste. Beginning from the end of 70-ties till to the middle of 90-ties mainly loparite was manufactured in the plant. At present Silmet Group Limited Company deals with the production of rare earths.

The storage of uranium and rare earths production waste is situated in East-Virumaa in the southern part of Sillamäe town at close distance from the coast of Finnish Gulf. Territory of storage is approximately 40 hectares and it contains about 12 million tons production waste and shale ash.

In the summer of 1997 Estonian Government together with Silmet Group started a sanitating project. For the purpose to make harmless the storage of radioactive waste of Sillamäe the Ökosil Limited Company was founded, where the government takes part together with private capital. Elimination of Sillamäe radioactive waste storage is financially supported by EU PHARE LSIF and by Nordic Countries

Utilisation and conservation of radioactive waste is regulated by the Law (in Estonian only)

Keskkonnaministri määrus nr.8 9.veebr.2005 "Radioaktiivsete jäätmete klassifikatsioon, registreerimine, käitlemise ja üleandmise nõuded.... www.riigiteataja.ee/ert7act.jsp?id=850616

Waste management in Sweden

Waste management in Sweden is greatly improved over the last ten years in terms of its resource efficiency and environmental impact. This is the outcome of a number of powerful policy instruments, including producer responsibility and restrictions on landfilling, and landfill taxes. Sweden's entry into the EU has also had an impact. The volume of waste, however, has continued to grow.

Besides producing regulations and guidance on waste management, the Swedish EPA has a monitoring role in ensuring that waste management is environmentally acceptable, socially efficient, and straightforward for the consumer. The waste management statistics which are reported to the EU every two years are also produced.

- **Objectives, strategies and results:** Less waste is going into landfills now, while more is being recycled, biologically treated, and incinerated. But the environmental impact of the waste could be reduced still further by properly applying and reviewing existing rules and policy instruments.
- **Management and treatment of waste:** The Swedish EPA continues to fine-tune the rules for different types of waste management as well as producing guidance. Less waste is being dumped in tips, and more is being recycled. Some waste is reprocessed into products for road-building and other types of construction. More organic waste is being composted and digested. A certain amount each year is still dumped at sea, a procedure for which an exemption is required. Swedish EPA continues to fine-tune the rules for different types of waste management as well as producing guidance.

Incineration, land filling, and hazardous waste management are all governed by EU regulations, while for biological treatment we have national guidance for minimizing impacts on the environment.

- **Producer responsibility**

Producer responsibility makes producers responsible for the collection and disposal of their discarded products. It is a policy instrument for achieving the national environmental objectives and for encouraging producers to develop resource-saving products, which are easier to recycle and free from environmentally hazardous substances.

Swedish law lays down producer responsibility obligations in five areas:

- Packaging;
- Tyres;
- Newsprint;
- Vehicles;
- Electrical and electronic products.

A voluntary producer responsibility agreement has also been negotiated for office paper.

Recycling rate of 60 percent for packaging

The overall recycling rate, including materials and energy, for all packaging in 2005 was approximately 60 percent.

The target from 1 January 2005 is a material utilisation rate of 65 percent for packaging made of paper, paperboard, cardboard and corrugated cardboard. It is a target that producers are meeting easily: the utilisation rate for this product group in 2005 was 72 percent. The highest utilisation rate was achieved for corrugated cardboard.

The target for vehicles was met

A total of 69,000 tonnes of tyres was converted into scrap material during 2005. None were disposed of to landfill. This means that producers are meeting the requirements of the ordinance.

In 2005 producers met their producer responsibility obligation for vehicles, meaning that 85 percent of the weight of scrapped vehicles was recycled in Sweden.

Waste statistics

Some 119 million tonnes of waste was generated in Sweden in 2004. Around half of this, or 58 million tonnes, was mining waste.

Household waste

The volume of waste generated by Sweden's households in 2004 was around 4.8 million tonnes, or 530 kg for every person.

The volume of household waste has been growing steadily for the last twenty years, roughly keeping pace with the rise in consumption of goods.

The waste that we flush down the toilet (except on properties with septic tanks) goes to municipal waste water treatment facilities. What is left after treatment is a sludge which is usually processed by digestion ("digested sludge", or "sewage sludge"). About 880,000 tonnes of sewage sludge was generated in 2004.

Waste generated by households includes food waste, packaging, paper, glass, textiles, items of metal, wood and plastic, garden waste etc. Some of this waste can endanger the environment or human health and is therefore known as hazardous waste. Examples are batteries, fluorescent tubes, other electrical and electronic waste, scrapped motor vehicles, medicines, house paint and solvents.

A Non-Toxic Environment is one of Sweden's 16 environmental quality objectives

The environment must be free from man-made or extracted compounds and metals that represent a threat to human health or biological diversity.

The overall goal is that, one generation from now, the major environmental problems currently facing us will have been solved.

The Swedish Parliament has decided on more detailed specification and on six interim targets for A Non-Toxic Environment.

Follow-up, evaluation, co-ordination and indicators

Municipalities, county administrative boards and responsible central agencies take part in work on the environmental objectives. As the agency responsible for the environmental quality objective, the Swedish Chemicals Agency has to push ahead development towards A Non-Toxic Environment and co-ordinate work on the environmental objective.

An in-depth evaluation is made once every four years, with proposals to the Government. A follow-up of A Non-Toxic Environment and the other environmental objectives is made to the Government and Parliament once a year. Indicators are used as aids in the follow-up.

Working for A Non-Toxic Environment: a shared responsibility

Everyone concerned needs to take their share of the responsibility if A Non-Toxic Environment is to be achieved. Enterprises, operators, authorities and consumers can make important contributions.

We need:

- Better knowledge of the impact of chemical substances on the environment and health.
- Better information on the chemical substances we use.
- To get away from the use of particularly hazardous substances.
- To handle chemical substances more safely.