

Country report Finland

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Introduction and organic waste situation

In Finland mostly municipally owned local waste management companies are responsible for the collection and treatment of MSW. Finland has in the recent past made a step from landfilling towards waste incineration, with an emphasis on energetic use of waste. At present there are seven MSW incinerators operating and another three planned or under construction. The Finnish MSW strategy anyhow is based on the source separation of biowaste whenever suitable (environmental effect, costs) and incineration of the residual waste. The biowaste treatment is mainly based on composting. In addition there are five anaerobic digestion plants in Finland, which usually treat biowaste together with sewage sludge. The new waste legislation prohibits landfilling of waste with more 10 % organics from 1.1.2016

Legal framework of the organic waste stream and compost production

In Finland easily degradable wastes originating from plants or animals, including for example paper, are classified as biological wastes. These wastes are generated in households, schools, restaurants, hospitals and in other similar sources or in trade and food industry. The wastes from agriculture and forestry are not classified as biowaste. Biowaste is intended to be collected and treated separately from other waste fractions. The process has already started in the 90's and it will be accelerated by the Government decisions and regulations. The Finnish landfill regulation demands, that over 50 % of the recyclable part of waste has to be separated before landfilling. The biowaste strategy from 2003 contents the same goals for recycling of biodegradable waste as the European legislation. The new waste legislation prohibits landfilling of waste with more 10 % organics from 1.1.2016

According to the Waste Tax Act (495/96) at the moment a tax of 70 euro/ton tax for the waste landfilled. In order to support the progress of biological treatment of separately collected biowastes and sludges from municipal waste water treatment plants, the treatment is not subjected to taxation.

Source separation situation

The efforts for and the intensity of source separation of biowaste depends much on the population density. In 108 (of total 450) municipalities waste regulations demand separate biowaste collection. In Finland the biowaste consists mainly of household kitchen waste, commercial biowaste and catering waste. Separate biowaste collection is usually obligatory for houses with more than 5-10 apartments, in some regions more than 2 apartments. Biowaste is collected typically in 240 l/plastic bins, in some cases protected inside with paper or biodegradable polymer sack. In some regions deep collection system is also applied. Brushes, leaves, garden and other park waste can be delivered directly to composting plants or major drop off sites. Home composting is encouraged for single houses and for the garden waste. Home composting for kitchen waste is allowed in closed, insulated composting equipment. Biowaste bins are collected with a maximum one week collection cycle during the summer time. Collection is carried out usually with a rear loading vehicle. Usually the bins are washed by a separate vehicle one to two times a year. In some new settlement

areas a vacuum waste collection system has been installed, where different waste types are collected in different colored bags. In 2012 has been collected 363 000 t municipal biowaste separately. This is about 25 to 35 % of the potential.

Treatment of organic waste

At present there are about 20 in-vessel composting plants operating. Most of them are closed composting plants. The range of existing in-vessel treatment capacity varies from 5 000 t/a to 50 000 t/a. The most common technique is tunnel composting. Also some drum and combined drum and tunnel plants exist. There are additionally about fifteen anaerobic digestion plants with capacities from 4 000 to 84 000 t/a, treating partly both biodegradable waste and sludge.

Standards and quality assurance

Compost products sold as fertilisers for agriculture or landscaping, are under the supervision of the Finnish Plant Production Inspection Centre. According to the Finnish legislation, only officially certified products can be put to market. The certified products are controlled on a regular basis for pathogens, heavy metals and nutrients.

Application and markets

Compost is used directly in agriculture or mixed with other soil components as a filling soil for parks, private gardens and landscaping. The way of marketing is depending largely on the volume of building and road construction in the area. Still a part of the compost products is used in closing structures and landscaping of the landfills. Digestate is directly or dewatered used as fertilizer in agriculture. Due to the long winter period huge storage capacities for the digestate are necessary.

Expected trends and developments

The intensity of separate biowaste collection depends mainly on the view the municipal waste management companies have on the advantages of incineration or biological treatment. This is nowadays often investigated by a Life Cycle Analysis (LCA). Because LCA often puts a great emphasis on green house gases, biological treatment often loses. Also in Finland the awareness for the need of nutrient recycling is rising. For that reason biological treatment especially anaerobic digestion gained importance. The interest in biogas as a renewable energy source is increasing. It is expected that the volume of biological treatment of household kitchen waste will rise in the future.

Contacts and sources of information

Christoph Gareis
PL 100
00066 HSY
Tel +358 40 829 6572
Email christoph.gareis@hsy.fi
Internet www.biolaitosyhdistys.fi



Finnish association
for biological waste
treatment



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About ECN

The European Compost Network is a membership organisation with 70 members from 28 European Countries. Members include all European bio-waste organisations and their operating plants, research, policy making, consultants and authorities. ECN represents 22 bio-waste organisations (compost and digestate quality assurance organisations) from 14 European Countries and two from abroad, 25 companies producing bio-based products (organic fertilisers, soil improvers, growing media and, biodegradable plastics), 9 non-governmental organisations of environmental protection organisations, 11 academic (research) institutes in environmental, agricultural and natural sciences and 3 environmental agencies.

Via the member organisations, ECN represents more than 3000 experts and plant operators with more than 30 million tonnes of biological waste treatment capacity.