ECN 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 nine MSW incinerators operating and another two 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 has been mainly based on composting, but the role of anaerobic digestion is strengthening. 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 more than 100 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 waste treatment areas. 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 2017 has been collected about 391 000 t municipal biowaste separately, of about 239 000 t were treated in the composting plants and about 130 000 t in the anaerobic digestion plants.

Treatment of organic waste

At present there are about 20 in-vessel composting plants operating (for biowaste). 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. In addition to the composting plants treating biowaste, there are also about 160 composting plants that are used mainly for post-composting of sewage sludge. There are additionally about 30 anaerobic digestion plants with capacities from 4 000 to 84 000 t/a, treating both biodegradable waste and sludge. In addition, there are about 60 anaerobic digestion plants that treat other organic waste fractions than municipal waste.

Standards and quality assurance

Organic fertilisers and soil conditioners both from composting process and from combined anaerobic digestion + composting process, sold as fertilisers for agriculture or landscaping, are under the supervision of the Finnish Food Authority.

On 2018-2019 The Finnish Biocycle and Biogas Association together with The Finnish Water Utilities Association is developing a voluntary quality system and quality label for organic fertiliser products. The quality system aims at improving marketing conditions of the organic fertiliser products, increasing the use of recycled nutrients, taking advantage of the waste streams from other sectors, and reducing the eutrophication of water bodies. The intention is to launch the first products to comply with the new quality system onto the market at the beginning of 2020.

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 mainly used directly or dewatered as fertilizer in agriculture. Due to the long winter period huge storage capacities for the digestate are necessary.

Expected trends and developments

The national implementation of the updated waste directives take place in 2019-2020, leading to the revision of most of the key waste laws and decrees. The role of separate collection is strengthening in the

national waste policy; hence it is expected that the volume of biological treatment of biowaste (MW and other) will rise in the future. 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. Both biogas and nutrient recycling are mentioned in the Finland's government program that was published in June 2019. Practical outcomes of the government programme are revision of the waste taxation regime by 2021 and the development of the national action plan of biogas that is takes place between September 2019 and January 2020.

On 2018 The National Waste Plan was published. It is a strategic plan adopted by the Government laying down the objectives and measures for waste management and prevention in Finland to 2023. The four key areas in the Plan are: construction and demolition waste, biodegradable waste, municipal waste, and waste electrical and electronic equipment. Detailed targets have been set for these key areas and measures are presented to reach the targets. Some remarkable targets to biodegradable waste:

- diminishing the food waste to 50 % of the present state
- 60 % from all the biowaste included in municipal waste has to be circulated
- increasing the use of organic fertilizers and soil conditioners

Contacts and sources of information

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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.