



Aalto University
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Waste Management and Recycling

Definitions and Legislation

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Why waste needs to be managed?



Why waste needs to be managed?

The purpose of Waste Act (646/2011, FIN):

Is to prevent the hazard and harm to human health and the environment posed by waste and waste management, to reduce the amount and harmfulness of waste, to promote the sustainable use of natural resources, to ensure functioning waste management, and to prevent littering.

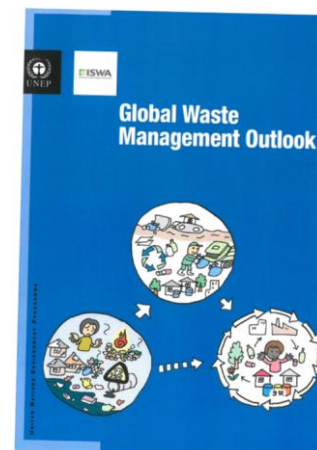


- EU Directive 2008/98/EC on Waste
 - Implemented in Finnish legislation as Act and Decrees

Waste management Outlook

<http://www.iswa.org/nc/home/news/news-detail/article/press-release-global-waste-management-outlook-gwmo/109/>

- Includes a wide overview to global waste management



What is Waste and what It is not?

According to Waste Act (646/2011, FIN):

- **Waste** means any substance or object which the holder discards, intends to discard or is required to discard
- A substance or object is not **waste** but a **by-product**, if it results from a production process whose primary aim is not the production of that substance or object and:
 - further use of the substance or object is certain;
 - the substance or object can be used directly as is, or without any further processing other than normal industrial practice;
 - the substance or object is produced as an integral part of a production process; and
 - the substance or object fulfils all relevant product requirements and requirements for the protection of the environment and human health for the specific use thereof and, when assessed overall, its use would pose no hazard or harm to human health or the environment

Waste plans and programs

According to EU Directive 2008/98/EC on Waste:

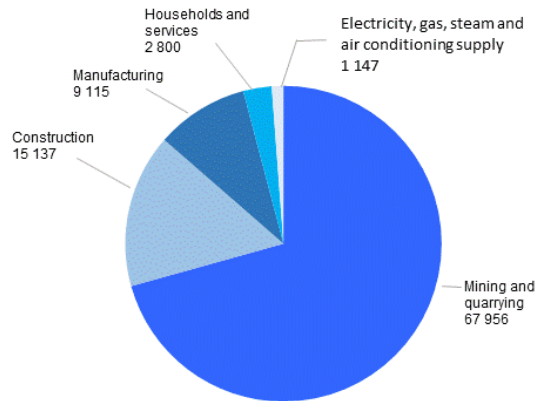
The waste management plans shall set out an analysis of the current waste management situation in the geographical entity concerned, as well as the measures to be taken to improve environmentally sound preparing for re-use, recycling, recovery and disposal of waste and an evaluation of how the plan will support the implementation of the objectives and provisions of this Directive.

Towards a recycling society

The National Waste Plan for 2016 (2009)

- **Objectives concerning waste prevention and recovery of waste**

Waste produced, FIN 2013



Waste but not Waste forever

Substance or object no longer constitute waste if:

- the substance or object has undergone a recovery operation;
- the substance or object is commonly used for a specific purpose;
- a market or demand exists for the substance or object;
- the substance or object fulfils technical requirements for specific purposes and meets the existing regulations applicable to similar products; and
- the use thereof will not, assessed overall, pose any hazard or harm to human health or the environment.

More definitions 1/3

municipal waste means waste generated in permanent dwellings, holiday homes, residential homes and other forms of dwelling, including sludge in cess pools and septic tanks, as well as waste comparable in its nature to household waste generated by administrative, service, business and industrial activities

mixed municipal waste means the municipal waste remaining after specific waste fractions have been separately collected at source

More definitions 2/3

waste management means the collection, transport, recovery and disposal of waste, including monitoring and supervision of such operations and the aftercare of disposal sites

separate collection of waste means the collection of waste where waste is kept separately by type and nature so as to facilitate preparation for re-use, recycling, other types of recovery or other specific treatment

re-use means re-using the product, or a component thereof, for the purpose for which it was originally conceived

preparing for re-use means checking, cleaning or repairing recovery operations, by which products or components of products are prepared so that they can be re-used without further pre-processing

recycling of waste means operations by which waste is reprocessed into a product, material or substance, either for the original or some other purpose; recycling of waste **does not include** recovery of waste as energy or the reprocessing of waste into fuel or material to be used for backfilling

More definitions 3/3

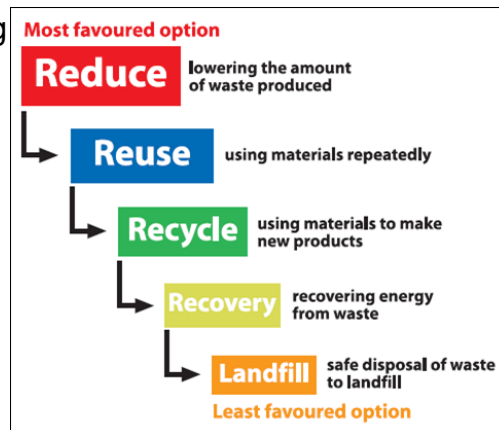
recovery of waste means any operation whose principal result is waste serving a useful purpose in a production facility or elsewhere in the economy, so that it replaces other materials or objects which would otherwise have been used to fulfil a particular function, including waste being prepared to fulfil that function

disposal of waste means depositing the waste at a landfill, incineration without energy recovery, or some other comparable activity that does not constitute recovery, even where the secondary consequence of the operation is recovery of a substance, or of energy contained in the waste, including preparation of waste for disposal

waste treatment refers to the recovery or disposal of waste, including preparation for recovery or disposal

Waste Hierarchy means General obligation to comply with order of priority

- Order of priority is a binding option but
 - Priority order may change if better overall result is achieved
 - Example: recycling of packaging waste versus energy utilization



Some general principles

Principle of self-sufficiency

- When planning and supervising waste management, the authorities referred to in this Act shall aim to ensure that sufficient possibilities exist in Finland to meet the need for the recovery or disposal of mixed municipal waste, for which municipalities are responsible

Proximate principle

- The waste holder shall be responsible for delivering the waste for treatment at one of the nearest facilities suitable for this purpose

Polluter-pay principle

- The original producer of waste, or the current or previous holder of waste, shall bear the costs of waste management

Authorities and their tasks

Ministry of Environment

The Ministry of the Environment is responsible for the general guidance, monitoring and development of operations under this Act

Municipal waste management authority

shall manage administrative functions related to waste management within the purview of the municipality

Supervisory authorities

Environmental Centers of the cities

Municipal waste management authority

A municipality may organize the administrative functions of the municipal waste management authority, as provided in the Local Government Act:

- 1) by managing the functions itself;
- 2) through agreements, together with another municipality;
- 3) as a member of a federation of municipalities managing the functions in question

Municipality must organize waste management for waste generated in:

- Households
- Health care, social welfare services and educational services
- Administrative services of state and municipalities
- **BUT** not for **private** (commercial) activities

Municipality, authority and property holder

- **Municipality:**
 - Must organize the transport of the waste from properties = *waste transport organized by a municipality (1) or waste transport organized by property holder (2)*
 - *In practice it contract with transportation companies who shall do the collection and transport to waste treatment site*
- **MWM Authority:**
 - Gives the local waste management regulations including regulations for source separation of waste
 - Decides on transportation type (1) or (2)
 - Collects the waste charge that cover the costs of the waste management (and sets the charges)
- **Property holder** shall arrange a reception point for the waste at the property

Exercise: Waste management plan

Goal of the exercise:

To plan waste management system for a City (the City) of 1,0 million inhabitants and reach to recycling rate of 50 % for household waste

Group 1, Authorities:

- Reparation and decisions of the local waste regulations
 - Source separation regulations
- Decision on transport system
- Waste fees

Group 2, Municipality's transport department

- Planning of the waste collection and transportation system

Group 3, Waste treatment services

- Planning of the treatment of the waste collected and transported by transport department
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