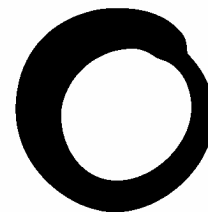


Briefing Note



Friends of the Earth

The Way Forward on Biowaste

Policy recommendations for managing biodegradable municipal waste

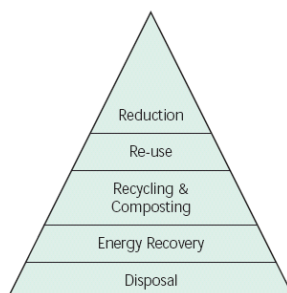
Introduction

Local authorities collect 29 million tonnes of waste every year, and 25 million tonnes of this is from households. Around two-thirds (68 per cent) of our household waste is made up of biodegradable materials such as kitchen scraps, garden trimmings, paper, cardboard and natural textiles. This represents a significant resource that could be re-used to bring environmental benefits.

Local authorities are increasingly turning their attention towards reducing and managing biodegradable household waste, as well as biodegradable waste from other parts of the municipal waste stream such as park waste or paper from offices and schools. This is because the European Landfill Directive requires member states to progressively reduce the amount of biodegradable waste which is sent to landfill. In the UK, a new scheme called the Landfill Allowance Trading Scheme (LATS) will penalise local authorities that exceed their given allowances for landfilling biowaste.

In the face of LATS, some authorities are turning to what they hope might be 'quick fixes' to meet their allowances, such as incineration and large-scale biological treatment of household waste. Friends of the Earth believes that a different approach is needed to ensure that as much biodegradable waste as possible is managed by the methods at the top of the waste hierarchy. The priority must be to prevent waste.

Figure 1: The Waste hierarchy
Source: ODPM, Draft Planning Policy Guidance Note 10: Waste Management



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Following the approach below will enable local authorities to meet LATS targets while at the same time conserving natural resources, saving energy, enhancing the soil and reducing greenhouse gas emissions.

The way forward on biowaste

1. Biodegradable waste, including packaging, paper and food waste, should as a priority be prevented or reduced to a minimum through e.g. eliminating excess packaging and encouraging re-use within the home.
2. Local authorities should encourage households to home compost garden waste and food waste through schemes such as subsidised compost bins and should provide support and advice on composting. Home composting prevents waste and avoids the transport emissions associated with collecting this waste from households. It also replaces artificial fertilisers and peat in the garden.
3. Where material can be re-used it should be separately collected for this purpose e.g. through civic amenity sites, furniture collections, second hand clothes shops.
4. Materials which can be recycled should be separately collected and sorted at the kerbside. Paper and card should be recycled using renewable energy and combined heat and power wherever possible. Textiles and wood should be recycled.
5. All households should be provided with a weekly free doorstep collection of separated food waste and a free collection, if required, of garden waste. This waste should be composted or anaerobically digested locally. Small-scale community composting in particular can help prevent transport impacts and create a valuable compost product.
6. Some biodegradable municipal waste, such as tree trimmings, might appropriately be burned to produce heat and electricity, in a similar way to biomass which is grown for the purpose. Friends of the Earth believes there should be a presumption against burning biodegradable municipal waste and will only support this option if all the following criteria are met:
 - efficient recycling or composting/mulching options are not available locally and cannot be made available in the near future;
 - more fossil fuel energy is saved by burning the waste than would be saved by composting or recycling it;
 - legal limits on emissions are not exceeded by the process;
 - facilities should be consistent with the proximity principle and built at the appropriate scale.
7. Household biowaste should not be mixed with other forms of waste (e.g. plastic) to produce refuse derived fuel (RDF). Friends of the Earth opposes the production and use of RDF from mixed municipal waste.

Evidence supporting this way forward

Friends of the Earth has reviewed the available research material on biodegradable waste. This research is not as conclusive as it might be, in part because accurate figures on the generation of biodegradable waste do not exist. The science of soil is also poorly understood and therefore the benefits (and disbenefits) of composting cannot be adequately quantified. However, the following conclusions can be drawn from the available research about three key environmental impacts. This is a summary of a research review which is available from Friends of the Earth on request.

a) Climate Change

There have been a number of life cycle studies comparing greenhouse gas emissions for different waste management routes. These generally show that where recycling is an option, recycling releases fewer net greenhouse gas emissions than incineration or landfill. This is particularly true for paper, but also for wood and textiles. Landfilling biodegradable wastes produces significant emissions of methane

which is a powerful greenhouse gas.

For green waste and food waste, net greenhouse gas emissions are similar for composting and incineration. Because of this, decisions about whether to compost or incinerate such waste need to take into account other factors (see below).

b) Resource Use

Life cycle studies generally consider the use of non-renewable resources, including minerals such as potassium and phosphate which are saved by using compost instead of fertiliser. However, they are not able to take into account the value of organic structure in soil because the mechanisms are not well enough understood to be accurately quantified. Nor do they take account of the role of forests in supporting biodiversity, absorbing pollution, regulating water flows or replenishing oxygen, though they may quantify their role in storing carbon.

Compost provides established benefits to soil including improved structure, water retention and pest control. Although most compost breaks down over a few years, some of the structure remains in soil for hundreds of years. In contrast, incineration destroys all of the organic material containing carbon and nitrogen, although it can preserve some minerals. Anaerobic digestion (AD) destroys most of the organic structure (apart from lignins), turning carbon into carbon dioxide and methane, but retains most of the nitrogen and minerals, producing good soil conditioner. Recycling conserves the basic organic structure of materials e.g. of wood, or wood fibre in paper recycling.

c) Toxicity

Life cycle studies generally show that recycling biodegradable materials like paper, card and natural textiles produces fewer net toxic emissions than incineration, mainly because production from recycled materials requires less energy input than production from virgin materials. It is generally the acid gases from combustion which are assessed as the most significant hazard for both humans and the wider environment. Therefore options which avoid the use of fossil fuel energy, in particular recycling options, tend to be regarded more favourably.

For biodegradable wastes, levels of contamination in the waste are very significant as they affect the suitability of waste for recycling or composting as well as incineration. There are a range of complex questions which have to be considered on a case by case basis. For composting, the question may not be whether contamination prevents composting, but what restrictions it places on use of the compost produced. If biowastes are contaminated, either in the original material (e.g. treated wood) or as a result of waste not being separately collected, then producing a quality compost product is usually impossible. Some contaminated compost can, however be used in bioremediation of contaminated land, or as a cap for old landfills to help reduce methane emissions.

Further reading

Friends of the Earth (January 2003) The Way Forward on Waste: Friends of the Earth's policy on the management of municipal waste: http://www.foe.co.uk/resource/briefings/way_forward_waste.pdf

Friends of the Earth (July 2004) Review of literature on biodegradable waste. Report by Nigel Lee for Friends of the Earth, available on request

Friends of the Earth (March 2005) Biowaste: A guide for local campaigners
http://www.foe.co.uk/resource/briefings/way_forward_on_biowaste.pdf

Friends of the Earth (January 2000) Greenhouse gases and waste management options:
http://www.foe.co.uk/resource/briefings/greenhouse_gases.pdf

Friends of the Earth (March 2004) Mechanical and Biological Treatment. This contains Friends of the Earth's policy position on RDF: http://www.foe.co.uk/resource/briefings/mchnical_biolo_treatmnt.pdf