

ecoworld

BRIEFING SHEETS: WASTE



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Waste

Waste is what people throw away because they no longer need it or want it.¹ Almost everything we do creates waste and as a society we are currently producing more waste than ever before. We do this at home and at work. The landfilling of biodegradable waste produces carbon dioxide and methane, both greenhouse gases which contribute to the threat of climate change.²

The Waste Situation in Northern Ireland

'Municipal waste' is all waste collected by our district councils (or other agents on their behalf). It is mainly made up of household waste but also includes street sweepings and a small amount of council collected commercial waste. Northern Ireland currently produces over one million tonnes of municipal waste annually (2005/2006 = 1,063,510 tonnes), and this figure has grown by 1.2% since 2004 and 2005³

If we continue at the current rate, the amount of municipal waste we are generating (or as they are also referred to the municipal waste arisings) will increase by almost 50% by 2020. This means that there is a large difference between the amount of waste we are generating and the amount we are allowed to dispose of in landfill.⁴

"Towards Resource Management"⁵ the Northern Ireland Waste Management Strategy 2006-2020' highlights the shift in focus towards waste prevention and resource management, and the recognition that it is no longer sufficient simply to manage our waste.⁶

We have a responsibility to prevent waste arising in the first place, and to focus on waste not just as waste but as a resource with economic potential whose environmental impact must be minimized.

There are vast opportunities with waste as many of these materials can be recovered for reuse, recycling or composting. This is extremely important especially with the increasing costs of disposal of waste.

1 Waste Online. 'The problem with waste'. <http://www.wasteonline.org.uk/topic.aspx?id=20>

2 Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 - 2020

3 Municipal Waste Management Northern Ireland 2005/2006 report. www.ehsni.gov.uk

4 Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 - 2020

5 Towards Resource Management. www.ehsni.gov.uk/pubs/publications/wms.17.pdf

6 DOE Waste Infrastructure Task force Report. <http://www.doeni.gov.uk/report.to.pdf>

Major different types of waste

- Municipal waste (Household waste, street sweepings)
- Commercial & industrial waste (waste from hotels and restaurants for example scrap food, retail waste including cardboard and packaging, manufacturing waste.
- Construction, demolition & excavation wastes (Bricks, tiles, wood, glass, soil, stones, insulation and construction materials)
- Hazardous waste (oil and chemical wastes, lead-acid batteries, healthcare wastes)
- Agricultural waste (Veterinary waste, plastics including fertilizer bags, slurry and manure, pesticide and oil containers)⁷

Priority wastes under European legislation:

- Packaging
- Waste Electrical & Electronic Equipment (WEEE)
- End of life vehicles
- Tyres
- Batteries

Example: Waste Electrical and Electronic Equipment

WEEE is waste electronic and electrical equipment like Washing machines, TVs, fridges and computers.

It is one of the fastest growing waste streams in Europe. Every year in the UK households throw away around 1 million tonnes of it.⁸

Waste Electrical and Electronic Equipment Directive ('the WEEE Directive')

This promotes the reuse, recycling and recovery of Waste Electrical and Electronic Equipment (WEEE).

The WEEE regulations affect retailers and other distributors who sell electrical and electronic equipment (EEE). If they're selling EEE to the public, retailers will have to ensure that their customers can return their WEEE free of charge. This will be on a like for like basis. Many retailers will offer in-store take-back for WEEE items. Also, Retailers will be able to set up alternative collection systems as long as they are still convenient for customers.⁹

⁷ Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 - 2020

⁸ Environment Agency. What does WEEE regulations mean for householders? <http://publications.environment-agency.gov.uk/pdf/GEHO0507BMOM-e-e.pdf>

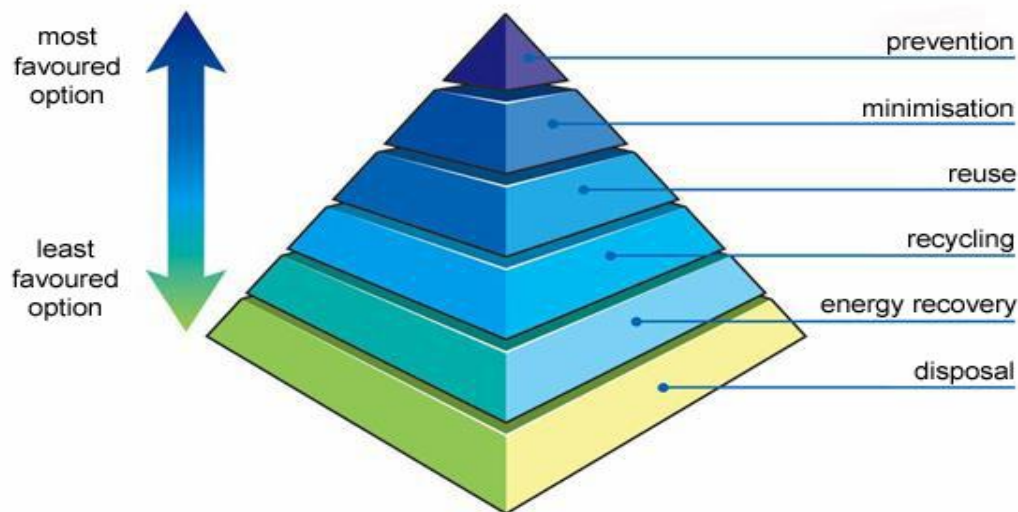
⁹ Environment and Heritage Service- "WEEE"- http://www.ehsni.gov.uk/waste/regulation-and-legislation/regulations_weee.htm

The Directive sorts EEE into the following categories:

- Large household appliances, e.g. washing machines, freezers.
- Small household appliances, e.g. vacuum cleaners, sewing machines.
- IT and telecommunications equipment, eg computers, keyboards and mobile phones.
- Consumer equipment, e.g. radios, TVs.
- Lighting equipment, (excluding filament light bulbs and household light fittings and lamps)
- Electrical and electronic tools e.g. electric drills, electric saws.
- Toys, leisure and sports equipment, e.g. electric train sets, video game consoles etc.¹⁰

Waste Hierarchy

The Waste Hierarchy is a tool which ranks different waste management options according to their impact on the environment. Waste prevention and reduction are the most environmentally beneficial options, followed by re-use, recycling or composting, energy recovery then finally, as an option of last resort, disposal.¹¹



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¹⁰ Environment and Heritage Service- "WEEE"- http://www.ehsni.gov.uk/waste/regulation-and-legislation/regulations_weee.htm

¹¹ Friends of the Earth PPS10 Planning for sustainable Waste Management http://www.foe.co.uk/resource/briefing_notes/planning_policy_statement.pdf

¹² <http://www.wasteonline.org.uk/resources/InformationSheets/WasteDisposal.htm>

'Reduce' / Waste Prevention/ Minimisation.

Reduce

The terms 'Reducing your waste', Minimising it and Waste Prevention collectively include all activities that reduce the amount of waste entering the collected waste stream, for example:

- Avoiding waste generation (Don't create the waste in the first place);
- Reducing quantities and hazardousness of waste at source; and
- Reducing products before they enter the waste stream.¹³

The top of the waste hierarchy is important because it shows how we can change our attitudes and actions to make waste prevention activities part of our normal, everyday behaviour. The outcome of this change in behaviour should result in less waste being generated in the first place and hence less waste to recycle, dispose of/ send to landfill. This will result in less environmental damage and cost savings.

Re-use

Many items that we would normally throw away can be re-used several times. This is important in terms of resource efficiency as we have to consider the resources and energy that were used in the making of the item. We are wasting these valuable resources by only using the item once.

There are two main types of re-use. Firstly many objects are designed for reuse several times e.g. milk bottles. The second type is when the object has served its original purpose yet can be reused for an alternative function. E.g. old plastic carrier bags could be re-used as a bin liner.

Recycle

Where does recycled waste go?

Recycled waste is reprocessed at various locations around Northern Ireland, the UK and around the rest of the world. For example Belfast City Council sends cardboard to England where it is pulped, the inks and dyes removed, and it is rolled to become new cardboard.

¹³ Environment & Heritage Service- Framework for Waste Prevention in Northern Ireland. September 2005

Trees are cut down and the bark is removed before the logs are ground into pulp. Turning wood into paper uses large amounts of energy and water. It takes 6 Kwh and 300 litres of water to make 1 kg of paper. It takes 15 trees to make one tonne of paper!

<http://www.northdown.gov.uk/template1.asp?pid=437&parent=413&area=4>

Local councils

Local councils have the responsibility for the collection and recycling of municipal waste. In Northern Ireland there have been significant improvements in areas such as new separate wheelie bin collections for different types of waste, new kerbside box schemes and investment in many of their amenity sites. This has meant that the NI recycling rate has increased from 10% in 2002 to 18.9% in 2004/05.¹⁴

Meeting recycling targets is a key responsibility of local councils. However, if they fail to meet government recycling targets, Northern Ireland could face heavy fines, which will result in a higher rates bill for homeowners.¹⁵

What can I put in my recycling bin, kerbside box or recycling centre?

Nearly all households in Northern Ireland will have access to a recycling bin or kerbside box. Amongst the different District Councils there are variations in the colours of bins / kerbside boxes and what they can take in them.

Recycling containers (bins or kerbside boxes)

Generally the following items can be placed in your Recycling container

- Plastic bottles
- Paper (newspapers, magazines, etc except for envelopes, tissue and shredded paper)
- Cardboard (heavy cardboard must be ripped up)
- Steel and aluminum cans.

To be more specific, several councils have given a comprehensive list as to what materials can be put into your recycling bin or box. All materials should be clean and dry. Recycling bins may not be accepted if incorrect materials are contaminating the bin.

¹⁴ Northern Ireland Sustainable Development Strategy. 'First Steps to Sustainability.' May 2006

¹⁵ Belfast City Council- <http://www.belfastcity.gov.uk/recycle/index.asp?menuitem=challenge>

The following waste items are generally not accepted in recycling bins or boxes unless otherwise stated:

- General refuse
- Food/garden waste
- Glass
- Textiles
- Nappies
- Electrical goods
- Aluminum foil/takeaway containers
- Yoghurt pot lids¹⁶

Kerbside Collections- Bryson House Recycling

Bryson House recycling centre offers two services:

- "Kerbside" provides a multi-material recycling service on behalf of the local council a weekly basis to thousands of homes in seven Local Council areas. Households are provided with a box for storing materials. The boxes are periodically emptied by Bryson House operators using specifically designed recycling vehicles

Items that can be placed in the kerbside boxes vary by region/ council also. These kerbside boxes come in a variety of different colours for different regions

- "Cash for Cans" gives the public the opportunity to receive a payment in exchange for their aluminum drinks cans.¹⁷

During 2002-2003, Bryson House Recycling collected more than 1000 tonnes of materials - enough to fill two football pitches knee-deep in recyclables, the equivalent of 50,000 wheelie bins.¹⁸

¹⁶ Down District Council .Blue Bin Recyclables List and 'Get it Right' information leaflet. <http://www.downdc.gov.uk/>

¹⁷ Bryson House Recycling. <http://www.brysongroup.org/recycling.htm>

¹⁸ Bryson House Recycling. <http://www.brysongroup.org/recycling.htm>

Composting

What is composting?

Compost is organic material derived from decomposed kitchen scraps and garden waste. It has a soil-like, often spongy texture and is rich in nutrients. Items of rubbish that rot are organic biodegradable materials. Composting is a natural recycling process whereby tiny micro-organisms and mini-beasts feed off decomposing kitchen and garden scraps. This helps to break down the organic matter. After six to nine months the rubbish will have turned into nutrient-rich, brown compost, ready for use on plants and soil.

You can compost almost anything that was once alive apart from cooked food, meat and fish and waste of animal origin. These items can attract pests and vermin like flies and rats.¹⁹

Why should we compost?

The primary reason for composting is to reduce the amount of waste we are sending to landfill. The more waste we landfill the more costly it is and the more detrimental the effects are to the environment and surrounding wildlife.

- Composting helps protect wildlife – digging holes in the ground to create landfill sites will damage or destroy the wildlife habitats that existed there previously.
- Composting also reduces our use of peat-based fertilizers (thus protecting peat bogs which are rare habitats supporting unique plants and animals).
- Compost bins often provide homes to garden wildlife like worms, beetles and toads.²⁰
- Composting helps the environment. When organic waste is buried in landfill sites it cannot rot properly. Instead it produces a black slime that can pollute rivers and streams if it escapes and methane, a greenhouse gas that damages the earth's atmosphere.²¹
- Compost is very beneficial for the health and growth of our plants and gardens. Also, by creating our own compost we are saving the money we would normally have spent buying it from a garden centre

What should we include in a compost bin (composter)?

This should be a mixture of greens and browns (food/ garden waste) as well as providing the right environment. A compost bin is the ideal environment for this.

19 Wrap. Teachers pack- Creative composting <http://www.wrap.org.uk/downloads/SchoolsPack.45928f75.pdf>

20 Wrap. Teachers pack- Creative composting <http://www.wrap.org.uk/downloads/SchoolsPack.45928f75.pdf>

21 Wrap. Teachers pack- Creative composting <http://www.wrap.org.uk/downloads/SchoolsPack.45928f75.pdf>

- **Greens include:** Fruit and vegetable scraps and peelings, tea leaves, tea bags, grass cuttings, dead plants and flowers, hedge clippings and weeds. The greens break down quickly and keep things moist.
- **Browns include:** straw and hay, wood chippings, sawdust, egg boxes, scrunched up paper and cardboard, leaves and bedding from pet cages.

The Greens are wet items that will rot quickly and act quickly to form compost. The browns give your compost its fibre and are needed just as much as the greens by the bacteria and insects, worms and fungi in your compost bin. They give the compost structure and provide air pockets to help the waste break down quickly and effectively.²²

Items not to be composted:

Meat, fish and cooked food this could attract vermin. Dog waste and cat litter may also be dangerous as the waste matter may contain diseases. Magazines and also large items etc will not break down easily and hence should be avoided.

What is a Wormery?

A wormery is a plastic or wooden container that contains composting worms. A compost worm is different from a normal garden worm in that it eats and lives on the decaying foods on the surface, whereas a garden worm burrows deep into the ground

A wormery is easy to use and enjoyable for children. Worms are added to waste food, and after a few months your worms will have eaten it all and left behind a fantastic fertiliser called vermicompost, which is very high in nutrients.

Energy Recovery from Waste

Waste- to- energy (WtE) or Energy from Waste (EfW) refers to any waste treatment that creates energy in the form of electricity and/ or heat that would alternatively have gone to landfill.

As prevention / recycling of waste is thought to be more environmentally beneficial than many energy recovery techniques, it is quite often expected that energy recovery will only take place on 'residual' wastes (i.e. those that can't be re-used/ recycled)

22 Wrap. Teachers pack- Creative composting <http://www.wrap.org.uk/downloads/SchoolsPack.45928f75.pdf>

The waste in Northern Ireland is primarily disposed of at landfill sites. There are many different types of energy recovery from waste. There are some new and emerging technologies which involve converting waste into liquid or gaseous fuels. e.g. Combined heat and Power, Anaerobic Digestion of organic waste. These are in operation in other European Countries.

Currently, 2.8 million tonnes (8%) of public waste are treated by energy from waste facilities. The Government's Waste Strategy for England 2007 anticipates that EfW activity will increase in the future, estimating that it will account for 25% of municipal waste treatment in England by 2020.

http://www.esauk.org/waste/energy_from_waste/

Waste Incineration

Waste incineration is probably one of the most technically advanced methods of energy recovery from waste. Energy is recovered from incinerators in the form of heat which in turn produces high pressure steam necessary for powering electricity generators. They are heavily regulated by European Directives which tightly govern the degree of emissions from them.

Combined heat and power (CHP)

This is the use of an engine or power station that can run on various forms of fuels to generate electricity and 'useful' heat. Heat is usually a by-product of a conventional power plant, but in the case of CHP units, the heat given off is collected and channelled and used as a domestic or industrial heating supply.

Anaerobic Digestion

Anaerobic Digestion is a biological process that happens naturally when bacteria breaks down organic matter in environments with little or no oxygen.

Anaerobic digestion is used widely to treat wastewater and organic waste. The correct conditions are created to allow the process to occur. This means that a biogas is produced which is made up of methane and carbon dioxide which can be used as a fuel.

Alternatively, the solid residue that arises from anaerobic digestion can be used as a fertiliser.

Waste Disposal

What is landfilling?

Landfill provides a safe disposal option for wastes that can't be recycled, composted or used to generate energy. Modern landfills are engineered to very high specifications ensuring that all waste deposited in a landfill will be safely contained and, that when it is restored, the landfill will blend naturally into the surrounding landscape. Restored landfills are often used for farming, as golf courses, for forestry or as public open space.

<http://www.esauk.org/waste/landfill/>

Historically landfilling is the placing of waste in a hole in the ground and covering it with soil. This is usually done in layers to prevent harmful gases and toxins being released. However this process has become more complex with different cells being created and capped and systems in place to capture the harmful liquids and gases that are emitted.

Problems that are generally associated with landfilling are the toxins that are emitted from the decaying waste. This can be in the form of harmful gases such as methane or liquid run off from the site (leachate). This can harm the atmosphere as well as polluting nearby waterways. The local community can also be adversely affected in terms of noise, smell, pests/vermin and the unsightly appearance of a landfill.

Currently less than 80% of what we discard goes to landfill which incurs a further cost which the public eventually end up paying for.

Landfilling rubbish can be a simple solution for the dealing of large volumes of waste and has been heavily relied on in Northern Ireland for many years. However this is proving inefficient as we are quickly running out of space. The environmental damage that is being done and our obligation to meet recycling targets, means that Northern Ireland will have to reduce significantly what it sends to the dump.

EU Landfill Directive

The EU Landfill Directive has set mandatory targets for the reduction in Biodegradable Waste going to landfill.

In Northern Ireland the targets for the maximum allowable tonnage for the landfilling of biodegradable waste of:

- 470,000 tonnes in 2010;
- 320,000 tonnes in 2013; and
- 220,000 tonnes in 2020.²³

To encourage less waste going to landfill, the Government has also set the following targets to ensure that waste is acted upon as an alternative to disposal:

Recycling and composting targets for households are set at

- 35% by 2010
- 40% by 2015
- 45% by 2020²⁴

Habitat destruction

Landfill sites can also be harmful to wildlife and biodiversity. Habitats can be destroyed around the sites and leachate can pollute the ground and nearby waterways killing wildlife that may have existed there. That is why it is essential for landfill sites to be properly maintained, and indeed for less waste to be sent to landfill to reduce the risk of habitat or wildlife loss.

Illegal dumping/ Fly Tipping

Fly-tipping is 'the illegal deposit of any waste onto land, i.e. waste that is dumped or tipped onto a site which does not have a license to accept waste'.²⁵

Prevention of illegal dumping

In recent years, the nature and scale of illegal waste disposal in Northern Ireland has developed the potential to inflict serious environmental and economic damage. Illegal disposal activity has had adverse effects on our environment, particularly through air, water and land pollution.²⁶

Illegal dumping has a serious detrimental effect, not just on the environment but also on the health and welfare of people living close by. Locals have to put up

²³ Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 – 2020. Volume 2 Waste Stream Summaries

²⁴ Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 – 2020. Volume 2 Waste Stream Summaries

²⁵ Tidy NI – Anti-Fly-tipping campaign. <http://www.tidynorthernireland.org/campaigns/fly-tipping/index.php>

²⁶ Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 - 2020

with infestations of flies, odours, ill-health and disturbance from dumping at all hours of the day and night.²⁷

It has also provided substantial revenue for illegal waste operators. This results in a negative impact on legitimate waste businesses.²⁸

Problems associated with Illegal Dumping

Dangerous:

Uncontrolled waste disposal can be hazardous to the public and the environment especially if it contains toxic materials. Hazardous materials include:

- asbestos
- pesticides
- fluorescent tubes
- oils
- some paints
- batteries and discarded electrical equipment such as TVs and computer monitors, fridges and freezers²⁹

It affects your community:

Neighborhoods which are subject to illegal dumping may suffer declining property prices, and it may discourage investment into the area.

It's costly:

There are significant costs involved with the cleaning and removal of illegally dumped waste. For example, cleaning up illegally dumped waste costs Translink £250k per year (around train tracks etc). The clean up can also be put back on the taxpayer when local authorities become involved.³⁰

Tackling illegal dumping in Northern Ireland

In conjunction with the Northern Ireland Organised Crime Task Force, The Environment and Heritage Service (EHS) of the Department of the Environment (DOE) has formed a dedicated Environmental Crime Team which uses a multi-strand approach to tackle illegal waste management in Northern Ireland. When instances of illegal waste management are detected and sufficient evidence can be gathered, EHS submits cases to the Public Prosecution Service. This would include any cases of illegal dumping from the Republic of Ireland.

²⁷ Friends of the Earth Northern Ireland-Press Release.

http://www.foe.co.uk/northern_ireland/press_releases/2004/legal_action_dumping.html

²⁸ Environment and Heritage Service "Towards Resource Management." The Northern Ireland Waste Management Strategy 2006 - 2020

²⁹ Disposal of Hazardous Wastes. <http://www.direct.gov.uk/en/Environmentandgreenerliving/Wasteandrecycling/>

³⁰ "Illegal Dumping. Think about the cost to you." <http://www.tidynorthernireland.org/about-us/latest-news/>

Definitions

Biodegradable Waste

Material that can break down or rot naturally when attacked by bacteria. Examples include food and garden waste. Other kinds of waste are said to be non-biodegradable.

Compost

Compost is created by the controlled breakdown of biodegradable material such as garden and kitchen waste. It can be used to improve soil structure and nutrient levels without the need for artificial fertilisers and peat-based composts.

Greenhouse gas

A gas that absorbs heat and therefore contributes to the warming of the earth's atmosphere (the 'greenhouse effect'). Examples of greenhouse gases include water vapour, carbon dioxide and methane.

Landfill tax

A tax on every tonne of rubbish sent to landfill sites. The tax is designed to reduce the amount of rubbish sent to landfill sites by increasing the reduction, reuse and recycling of waste

Municipal Waste

The definition in the Landfill Directive states that “municipal waste means waste from households, as well as other waste, which, because of its nature or composition, is similar to waste from households.”

Sustainable Development

This means finding ways to meet the needs of the present generation without damaging the environment or preventing future generations from being able to meet their own needs.

The Organised Crime Task Force

The Organised Crime Task Force is a forum where government, law enforcement and a wide range of other agencies set strategic priorities for tackling organised crime. It was created in September 2000 by the then Secretary of State to combat the growing problem of organised crime in Northern Ireland. (Under which the problem of Illegal Dumping falls)