WASTE STRATEGY

The need for change

England and Wales produce around 435 million tonnes of waste each year, of which 106 million tonnes is produced by industry, commerce and households. The remainder around 300 million tonnes is made up of construction and demolition wastes, agricultural wastes, mining wastes, sewage sludge and dredged spoils.

Waste production in England and Wales 1998/99

	Million Tonnes
Industrial waste (excluding construction and demolition waste)	48
Commercial waste	30
Municipal waste (waste collected by or on behalf of the local authority)	28

Source: Environment Agency 1998/99 (provisional); Municipal Waste Survey 1998/99 (provisional)

Most waste produced in England and Wales goes to landfill. Around 54% of commercial and industrial waste and 83% of municipal waste is managed in this way.

Waste management in England and Wales 1998/99

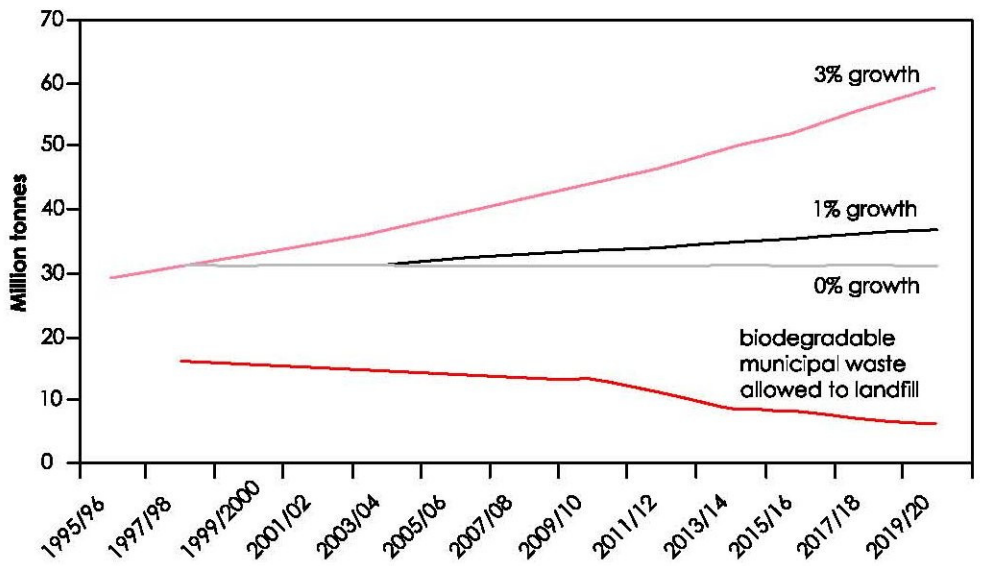
	Landfill (%)	Recovery (%) (including recycling and composting)	Recycling/ Composting
Industrial waste (excluding construction and demolition waste)	47	45	39
Commercial waste	66	33	29
Municipal waste	83	17	9

Source: Environment Agency 1998/99 (provisional); Municipal Waste Survey 1998/99 (provisional)

We cannot continue to rely on landfill as we have done in the past. In some parts of England and Wales especially near to large built up areas, there is simply not enough space to continue using land to dispose of waste.
Landfill is also a major source of methane. Methane is produced when biodegradable materials such as paper, food wastes and green wastes, decompose in the absence of oxygen. For this reason the Government and our partners in Europe have agreed the EU Landfill Directive (council directive 99/31/EC on the Landfill of Waste) which sets ambitious targets for the reduction of biodegradable municipal waste sent to landfill. The targets are:

- By 2010 to reduce biodegradable municipal waste landfilled to 75% of that produced in 1995
- By 2013 to reduce biodegradable municipal waste landfilled to 50% of that produced in 1995
- By 2020 to reduce biodegradable municipal waste landfilled to 35% of that produced in 1995

Future growth in municpal waste, and landfill permitted



Source: Waste Strategy 2000 England and Wales Part1

Main requirements of the Landfill Directive

- targets for reduction of biodegradable municipal waste to landfill
- banning co-disposal of hazardous and non-hazardous wastes, and requiring separate landfills for hazardous, non-hazardous and inert wastes
- banning landfill of tyres (by 2003 for whole tyres, 2006 for shredded tyres)
- banning landfill of liquid wastes, infectious clinical waste and certain types of hazardous waste (e.g. explosive, highly flammable), all by 2001
- provisions on the control, monitoring, reporting and closure of sites, which already form the backbone of waste management legislation in the UK

Source: Waste Strategy 2000 England and Wales Part1

Meeting these targets will be a major challenge. Therefore in the future we must make a much greater effort to reduce waste and substantially increase re-use, recycling, composting and recovery of energy from waste.

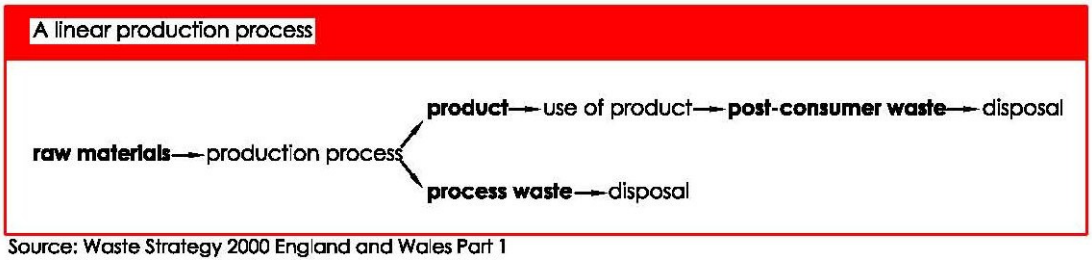
The future of waste management

The reduction of waste must be the prime objective. This could reduce the use of materials and produce savings in the other inputs that may have gone into processing the materials (e.g. energy and labour), also to reduce the environmental impacts of waste disposal.

Municipal waste is currently growing at around 3% each year. If this growth is maintained we will need to build hundreds of new waste facilities. These facilities (composting, recycling, and energy from waste) are rarely welcomed by the public, but some will be necessary. How many will depend upon the success in tackling the current growth in waste. Everybody must do their bit to help.

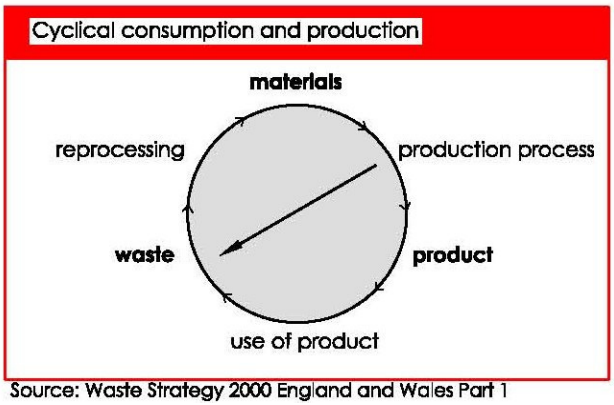
Householders can help by avoiding over-shopping, choosing products that will produce less waste. The Government and National Assembly will work with local authorities, retailers and community groups to ensure that consumers are aware of the differences they can make.

Where products or components appear to have reached the end of their lives, they can often be re-used. Pass things on for re-use, between major industries or companies, take things to charity shops, or re-using them within local community based schemes or families.
Production and consumption processes are usually linear: raw materials are used to make a product, which is used, possibly more than once and then disposed of.



Source: Waste Strategy 2000 England and Wales Part 1

In the future we will need to rely on more cyclical production & consumption processes. Wastes do not need to be recycled into the same product, green glass bottles can be used to produce fibre glass, plastic drink bottles can be turned into fleece fabric. The extraction of raw materials can use a lot of energy so recycling materials in this way can greatly reduce our consumption of energy, which in turn contributes to achieving the climate change targets.

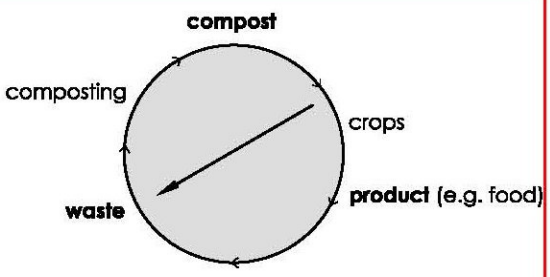


Source: Waste Strategy 2000 England and Wales Part 1

Three elements need to be in place if we are to increase recycling and develop such cyclical systems:

- greater provision of single material waste streams – through separation at source or sorting facilities.
- greater reprocessing capacity, to turn the waste materials into new inputs.
- more use of recycled (or secondary) materials in production processes with the exception of paper, wood and some textiles, most biodegradable organic materials cannot easily be recycled. But we can use this instead of peat and fertilisers. The creation of a similar loop is formed.

A closed loop for organic waste



Source: Waste Strategy 2000 England and Wales Part 1

Waste and climate change

Landfill sites release methane, a major greenhouse gas, from decomposition of paper, wood, food waste and green wastes. The Landfill Directive will require all landfill sites accepting biodegradable wastes to capture and use methane where possible. As well as converting methane to the less potent greenhouse gas carbon dioxide, this can displace some electricity generation from fossil fuels.

A recently completed research study for DETR has estimated the overall effect of the draft waste strategy and options for implementing the Landfill Directive on greenhouse gas emissions. The study estimated that these measures are likely to produce overall savings in 2010 of 0.1 to 0.4 million tonnes of carbon in national greenhouse gas emissions. The range reflects the different strategic and technical options that may be used to achieve the targets in the Landfill Directive and the waste strategy. These savings are in additions to a baseline in which greenhouse gas emissions from waste management are already reducing due to existng measures, such as increased landfill gas collection and use and the landfill tax.

Energy from waste plant (primarily incinerators, but also gasification and pyrolysis plant) release carbon dioxide from burning fossil carbon (primarily waste oils and plastics) and biogenic carbon (from wood, paper, food and green wastes). However energy from waste plant can displace the need to use more polluting fossil fuels to generate heat. Consequently, the Government and the National Assembly will continue to encourage the recovery of energy from waste, where appropriate, as part of their renewable energy strategies.

Recycling processes use energy to a greater or lesser degree, and in many cases this energy will derive from the burning of fossil fuels. In many circumstances however, the energy used for recycling will be significantly less than that used for extraction (and import) of virgin materials. And production processes using secondary materials can be less energy intensive than those using primary resources. In these cases there tends to be a net climate benefit from recycling.

Composting emits greenhouse gases as wood, green waste, food waste and certain types of paper decompose. If the process is managed carefully, this will be in the form of carbon dioxide. If however insufficient oxygen is present then composting will release methane, a more potent greenhouse gas.

Reduction and re-use will generally have positive climate change impacts (compared to other waste management options). However, in cases where more durable, re-usable goods require significantly more energy in the production process, there can sometimes be a negative impact on climate change. Other impacts, for example on material resources or air quality, might nonetheless make this the preferred option. Similarly, where newer goods are significantly more energy efficient, it can be desirable to discard older models before the end of their life.

The other key way in which wastes contibute to climate change is through their transport.

Source: Waste Strategy 2000 England and Wales Part 1

Not all waste can be recycled. Consideration should be given as to whether it could be used as a fuel. This can be done directly, in incinerators, or indirectly through creating refuse derived fuel or through a process such as gasification.

Using waste as a fuel can reduce emissions of carbon dioxide, thus reducing the harm caused in the atmosphere.
Hazardous wastes, like other wastes, are substances that people want to discard. In the UK hazardous wastes are known as "special wastes". These include potentially dangerous things such as pesticides, asbestos and strong acids. Also for example, mobile phone batteries and used engine oils may need to be treated as hazardous.
Hazardous wastes are discussed fully in Chapter 6 of Part 2 of Waste Strategy 2000 (England and Wales).

Municipal and household waste

Under the Best Value initiative, local authorities in England and Wales must set themselves targets for performance on waste management and prepare a plan of action for its delivery. In setting many of these targets authorities must have regard to the waste strategy and in particular to the targets set below.

Best Value Indicators for Waste Management in England and Wales

- Total tonnage of household waste arisings
  - percentage recycled
  - percentage composted
  - percentage used to recover heat, power and other energy sources
  - percentage landfilled
- Weight of household waste collected, per head
- Cost per kilometre of keeping land for which the local authority is responsible clear of litter and refuse
- Cost of waste collection per household
- Number of collections missed per 100,000 collections of household waste
- Percentage of people satisfied with cleanliness standards
- Percentage of people expressing satisfaction with (a) recycling facilities, (b) household waste collection and (c) civic amenity sites
- Percentage of population served by kerbside collection of recyclables, or within 1 kilometre of a recycling centre

Source: Waste Strategy 2000 England and Wales Part 1

The Government and the National Assembly have set targets for the management of municipal wastes:
- to recover value from 40% of municipal waste by 2005
- to recover value from 45% of municipal waste by 2010
- to recover value from 67% of municipal waste by 2015

To 'recover' means obtain value from wastes by

- recycling
- composting
- anaerobic digestion (a biological process that produces a gas, to then be used as a form of energy)
- energy recovery

As an essential part of achieving the waste recovery target, is the drive towards more household recycling and composting.
The Government has set the following targets for England and Wales:
● to recycle or compost at least 25% of household waste by 2005

● to recycle or compost at least 30% of household waste by 2010

● to recycle or compost at least 33% of household waste by 2015

Producer responsibility

Producer responsibility can be an effective tool for making producers more aware of the environmental impact of the goods they produce.
Producers must take greater responsibility for those goods that are at the end of their lives, either by voluntary agreements or mandatory obligations. Some schemes are already up and running – for example, take back schemes for mobile phones and certain batteries.
Businesses which handle packaging will have an obligation to recover packaging waste – with 52% recovered in 2001 and at least half of that recycled.
Newspapers are an important part of the household waste stream. In 1999 the estimated recycled content of newsprint was around 54% up from 28% in 1991. The newspaper publishers have agreed with the Government to commit to the following targets:
● 65% recycled content by end of 2003

● 70% recycled content by end of 2006

'Junk mail'. This is an unwelcome element of household waste. The number of items sent to consumers has grown from 1.5 billion in 1990 to 3.3 million in 1999. An initiative on producer responsibility is being developed.

'End of Life Vehicles'. The proposed Directive sets targets for re-use, recycling and recovery and introduces improved treatment standards.
The targets proposed in the common position are:
● to increase re-use and recovery to 85% and recycling to a minimum of 80% by 1st January 2006

● to increase re-use and recovery to 95% and recycling to a minimum of 85% by 1st January 2015

The Directive would also require:
● manufacturers to design vehicles with recyclability and re-use in mind.

● systems to be established to ensure that all vehicles are collected and transferred to an authorized treatment facility.

The end-of-life vehicles Directive is likely to apply to used tyres, where these are part of a vehicle. Together with the Landfill Directive ban on sending tyres to landfill, this will require substantial increases in recycling and recovery of used tyres.

'Batteries'. A proposal to replace the batteries Directive (batteries and accumulators containing certain dangerous substances directive (91/157/EEC) is being considered within the European Commission. The Commission is likely to:
● propose collection and recycling targets for spent consumer, automotive and industrial batteries

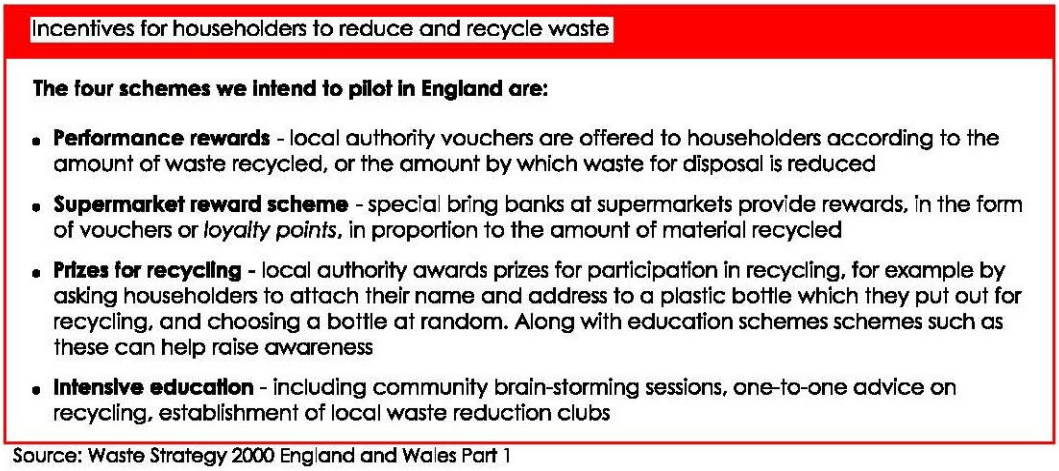
● seek to restrict from 2008 the marketing of nickel cadmium batteries where suitable substitutes exist

Summary of Government action

Objective	Action on industrial and commercial waste	Action on municipal waste
Reduce the amount of waste produced	Waste and Resources Action Programme Producer responsibility initiatives Environmental Technology Best Practice Programme Intergrated Pollution Prevention and Control (IPPC) Landfill Tax escalator Landfill Tax Credit Scheme Guidance on environmental reporting	Waste and Resources Action Programme - actions aimed at manufacturers impacting on household waste stream Best Value indicator Pilot schemes to encourage householders to reduce waste Landfill Tax Credit Scheme Waste Minimisation Awareness Initiative, *are you doing your bit?* campaign Producer responsibility initiatives
Increase re-use	Waste and Resources Action Programme Producer responsibility initiatives Environmental Technology Best Practice Programme Intergrated Pollution Prevention and Control (IPPC) Landfill Tax escalator Landfill Tax Credit Scheme Guidance on environmental reporting	National Waste Awareness Initiative, *are you doing your bit?* campaign Landfill Tax Credit Scheme
Increase supply of materials for recycling and composting	Waste and Resources Action Programme Producer responsibility initiatives Environmental Technology Best Practice Programme Landfill Tax escalator Review of derogation on burning waste oils Guidance on environmental reporting	Best Value performance standards and indicators (recycling rateand availability of facilities) Landfill Tax Cedit Scheme, including increased availability of funds for community recycling Permits to limit use of landfill in England Landfill Tax escalator National Waste Awareness Initiative, *are you doing your bit?* campaign Pilot schemes to encourage householders to participate in recycling
Increase demand for secondary materials and waste derived compost	Waste and Resources Action Programme Public procurement Market Development Group recommendations, e.g. finding alternative high-values uses Supporting development of compost standards	Waste and Resouces Action Programme Public procurement [agreement on recycled content of newsprint] Market Development Group recommendations
Increase the use of waste as a fuel	IPPC/Intergated licensing Waste Incineration Directive Research on health effects of waste management facilities Landfill directive OPRA - risk based assessment of waste management facilities Adding emissions from landfill to pollution inventory	IPPC/Intergated licensing Waste Incineration Directive Research on health effects of waste management facilities OPRA - risk based assessment of waste management facilities Adding landfill to pollution inventory
Reduce the quantity and hazardousness of hazardous waste, and improve the management of that which is produced	Landfill Directive Hazardous Waste Incineration Directive Review of the Special Waste Regulations	Landfill Directive Hazardous Waste Incineration Directive Review of the Special Waste Regulations

Source: Waste Strategy 2000 England and Wales Part 1

Four schemes are intended to be piloted in England as an incentive for householders to reduce and recycle waste, these are detailed in the table below:



Source: Waste Strategy 2000 England and Wales Part 1

Individual consumers and households have a vital role to play in achieving sustainable waste management. We can all help by:

- buying products which will produce less waste, and those made from recycled materials
- separating our wastes for recycling, and composting kitchen and garden waste
- participating in local debates about how best to manage our waste

Increased household recycling will not be possible if consumers do not recognize that it is important, awareness will be raised through:

- the "*the possibilities are endless?*" Campaign
- continued support for the National Waste Awareness Initiative
- a new website: www.recyclenow.com
- working with authorities to pilot schemes for encouraging consumers to reduce waste and recycle more

The information in this document is extracted from 'Waste Strategy 2000' England and Wales Part 1, supplied by Department of the Environment, Transport and the Regions.