

Waste not, Want not

A strategy for tackling the waste problem in England



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FOREWORD BY THE PRIME MINISTER



I am intensely proud of the central achievement of this Government – strong economic growth, based on sound fundamentals. Unemployment, inflation and mortgage rates are at their lowest level for decades.

In large part this has been accompanied by environmental improvements – cleaner air, drinking water, river quality and bathing waters; falling emissions of greenhouse gases.

But higher incomes and consumption have brought with them increased waste, and associated problems of disposal.

Household waste is now growing at a rate of 3% each year, faster than growth in the economy as a whole. On average every person in the UK now produces about seven times their own weight in waste a year.

Around 20% of the food we buy off supermarket shelves goes straight to the bin.

At the moment most of this waste is buried in landfill sites. This is simply not sustainable. In some areas we are running out of space. And there are major environmental considerations – landfill is responsible, for example, for 25% of our emissions of methane, a major greenhouse gas.

But the most important reason for changing direction is that the current position is, literally, wasteful. Half of the waste we generate could be re-used and recycled, and transformed from a problem into an asset.

At current rates of growth the amount of household rubbish will double by 2020, and cost £3.2bn per year to dispose of. That would mean spending an extra £1.6bn a year on waste management. So we need first to reduce the amount of waste we create.

We have improved our recycling record over the past decade. But not by as much as we or previous governments wanted. It is excellent that some local authorities are really starting to deliver on recycling. But the majority are not, and many are not even trying seriously. We need now a step change.

This is why I asked the Strategy Unit to look at how we could do better. Their work has involved a thorough analysis of the problem and of the potential solutions. They have consulted experts in the field and examined examples of successful waste management both at home and abroad.



The report shows clearly that a different approach to waste will pay economic and environmental dividends; that the focus of strategy needs to be on reducing, re-using and recycling waste, with reformed incentives and regulations; and that government, local authorities, industry and households, all need to play a part in containing the problem. The report is offered not as a statement of government policy, but as a contribution to the debate. But I accept its diagnosis. We must rise to its challenge.

Tony Blair

EXECUTIVE SUMMARY

Key points

England has a growing waste mountain

The UK produces enough waste in one hour to fill the Albert Hall.

Household waste is a particular problem. The quantity produced is rising by 3% per year (faster than GDP and faster than in most other nations). The waste mountain will double by 2020 adding £1.6bn per year to waste disposal costs.

The way England manages its waste harms the environment and squanders resources

Nearly 80% of household waste goes to landfill, far more than in most other European countries. By contrast, the recycling rate in England – at 12% – is well below that in many other EU countries some of whom recycle over 40% of household waste.

We need to act now to reduce waste growth and recycle more

There are strong environmental and economic reasons for acting now to slow the increase in household waste and to reduce reliance on landfill. Landfill:

- accounts for over a quarter of all UK methane emissions (a greenhouse gas);
- squanders valuable resources which could be reused or recycled;
- is unpopular with people who live near landfill sites; and
- areas such as the South East are running out of potential sites.

It has taken other European countries 10-15 years to shift to a more sustainable approach to waste management. A similar timescale is likely to be needed in England.

Other countries have shown that waste can be tackled more sustainably

The good news is that many other nations have shown that careful policy design can lead to a reduction in the growth of waste, less reliance on landfill and more recycling, without in any way damaging business competitiveness. England can learn from the best performers by focusing on waste minimisation; reusing and recycling more waste; and making the most of a wide range of alternative technologies for dealing with residual waste.



Key points (continued)

The aim of policy should be to secure future prosperity whilst reducing harm to the environment

The overall aim of policy should be to ensure that, by 2020, England has a world class waste management system that allows the nation to prosper whilst reducing harm to the environment and preserving resources for future generations. This means:

- reducing growth in waste volumes to less than growth in GDP;
- fully covering the true costs of disposing of waste in the prices of products and services;
- implementing waste management options that deliver the overall aim at least cost.

A robust strategy is needed to realise this overall aim

This strategy needs to be underpinned by three key principles:

- the 'waste hierarchy' provides a sensible framework for thinking about how to achieve a better balance between waste minimisation; recycling; incineration and landfill;
- measures taken to advance the strategy should take full account of the balance of benefits and costs; and
- sustainable waste management is not just a responsibility of government but also of individuals, businesses and other stakeholders.

This report sets out how these principles can be put into practice. It puts waste reduction, re-use and recycling at the forefront of its reform package together with creating the right environment and new institutional structures to deliver change.

To be successful the strategy needs:

- a robust long term economic and regulatory framework. This should include significant increases in the landfill tax and new incentives for households to reduce and recycle waste;
- a package of short to medium term measures to put England on the path to more sustainable waste management including measures to slow the growth in the amount of waste; investment in recycling infrastructure; and support for new alternative waste management technologies; and
- additional funding accompanied by radical reform of delivery structures to ensure the overall aim is realised.

Implementation of the strategy would enable England to match best practice in other countries and at lower cost

In combination, the elements of the Strategy Unit package would:

- **slow waste growth** from 3% to 2% per annum reducing environmental damage, saving money and reducing the number of new waste management facilities required in the longer term;



Key points (continued)

- **boost recycling** by developing the infrastructure needed for increased recycling (including national kerbside collection, focusing on organics, and more bring sites and civic amenity sites designed for re-use and recycling). This would raise national recycling rates to at least 45% by 2015;
- **increase choice** by creating the economic environment within which a wider range of options for managing waste can develop: giving industry, local authorities and households greater flexibility over how they manage their waste, as well as the incentive to reduce damage to the environment;
- **stimulate innovation** in waste treatment and waste management organisations in England; and
- **reduce environmental damage and improve resource productivity** by reducing reliance on landfill and other disposal options; preserving resources for future generations and reducing environmental impacts.

By learning from good and bad practices in other countries, England could achieve a waste management system that will match current best practice in the world more cost-effectively, with reduced waste growth, more recycling, less reliance on disposal, and better incentives for the use of a wider range of technologies to manage waste.

The Secretary of State for the Environment, Food and Rural Affairs should be the Ministerial Champion for this strategy.

In the short term, a ministerial group, reporting jointly to the Secretary of State and the Chief Secretary to the Treasury should develop the public expenditure programmes and institutional arrangements needed to implement this report's recommendations.

England faces rapidly growing waste volumes

Some 28 million tonnes of municipal waste are produced annually in England. Each person produces about seven times their body weight in household waste (ten times if all municipal waste is taken into account).

Household waste in England is growing at a rate of 3% annually – faster than the growth in GDP. At this rate, the volume of England's municipal waste will double by 2020, and will cost £1.6 billion a year more (at today's prices) to manage and dispose of.

England is behind most other developed countries when it comes to waste management – we produce more waste per head, and recycle less

Most other European countries have a number of alternatives to landfill in place, as well as legislation and incentives to support these alternatives. Currently, almost 80% of municipal waste in England is sent to landfill sites, compared with around 50% in France and 7% in Switzerland. England recycles just 12% of its municipal waste, while Germany recycles 52% and the Netherlands 47%.



There are several reasons for this:

- England has traditionally relied on landfill because of the country's abundance of holes from extractive industries and other activities. This has made landfill relatively cheap and discouraged investment in alternatives;
- there are few financial incentives in place for either industry or householders to develop or seek alternatives to landfill. Landfill tax in the UK is currently £13 per tonne, compared with, for example, £45 per tonne in the Netherlands and £34 per tonne in Denmark. As a result there is much less economic incentive to invest in alternatives to landfill in the UK;
- public awareness of the growing waste problem, the benefits of managing waste effectively, and the steps everyone can take to reduce waste is far lower than in other EU countries;
- responsibility for waste management is split between a number of different government departments, making coherent policy-making difficult; and between tiers of local government, causing inefficiency between collection and disposal authorities; and
- obtaining planning permission for waste facilities can be difficult and time-consuming. Such facilities are often opposed by local people concerned about noise, pollution, traffic and effect on house prices.

There is a strong case for acting now to tackle the problem of growing amounts of waste

Effective action to tackle the increase in waste would bring a number of benefits:

- it costs less to act now. The longer action is delayed, the greater the cost because there will be more waste to manage;
- increasing waste volumes are causing significant and growing damage to the environment. Landfill currently produces up to 25% of all UK methane emissions. As methane is a powerful greenhouse gas (21 times more powerful than carbon dioxide), reducing these emissions will have a highly beneficial impact on climate change;
- the EU Landfill Directive requires the UK to reduce the volume of biodegradable municipal waste sent to landfill by 2010, with further reductions in 2013 and 2020. Failure to meet these targets could result in fines of up to £180 million per year;
- landfill sites are becoming increasingly scarce, particularly in the South East and the North West. More of these sites and/or other residual waste treatment facilities will be required, unless greater efforts are made to reduce volumes of waste; and
- there are significant lead times. Countries that have developed effective waste management systems have taken between 10 and 15 years to do so.

It would also bring significant economic benefits

Over 50% of the household waste sent to landfill sites or incinerated in England could be diverted from incineration and landfill through home composting and recycling on the basis of current best practice. By failing to do this, the country is wasting valuable resources and putting itself at a competitive disadvantage:

- less wasteful product design and manufacturing processes would lead to cost savings for business; and
- growth in markets for recyclates and new technologies for waste management represent major opportunities for UK businesses.



The Government has recognised that the problem of waste needs to be tackled

The Government has introduced statutory targets for local authorities for the recycling and composting of household waste: 17% by 2003 and 25% by 2005/6. There are also targets to recycle 30% by 2010; and 33% by 2015. Waste Strategy 2000 for England and Wales stated that statutory targets for individual councils would be set to support at least the 2010 target. Targets have also been set for reducing the amount of commercial and industrial waste sent to landfill.

The proportion of household waste being recycled and composted has increased from 7.5% in 1996/97 to 11.2% in 2000/01. The Waste and Resources Action Programme (WRAP) has been set up to help boost markets for recycled material and is proving very successful. **But there is much more to do.**

The good news is that other countries provide successful examples of better waste management

There is much that England can learn from other nations about:

- how to focus greater effort on measures to reduce waste;
- the impact of measures to promote re-use and recycling; and
- how to make use of a wider range of waste technologies e.g. composting, recycling technologies and residual waste technologies such as mechanical biological treatment.

A clear vision is needed to take the waste strategy forward

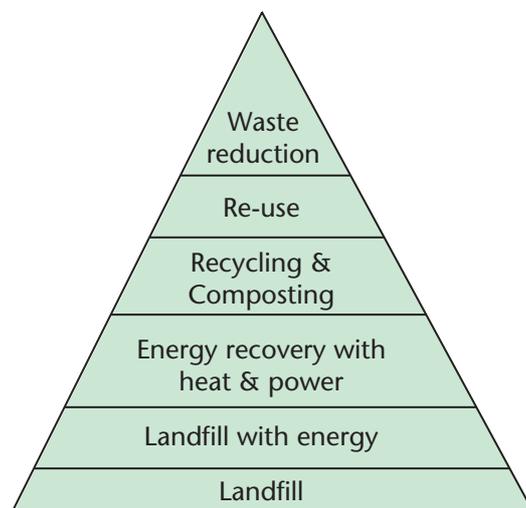
This report argues that the overall aim of policy should be to ensure that, by 2020, England has a world class waste management system that allows the nation to prosper whilst reducing harm to the environment and preserving resources for future generations. This means:

- decoupling growth in the amount of waste from growth in GDP i.e. waste growth rates that are lower than GDP growth rates;
- fully including the costs of disposing of waste in the prices of products and services; and
- identifying the waste management options that will deliver the overall aim at least cost.

A strategy for realising this aim needs to be based on sound principles

The first principle underpinning the strategy in this report is that England needs to move up the waste hierarchy (see chart below). The higher levels of the hierarchy reflect more sustainable waste and resource management.

The Waste Hierarchy





The second principle is that any measures to move up the waste hierarchy need to be soundly based in cost-benefit terms. European legislation requires member states to establish facilities using the best available technology without involving excessive costs. In deciding which individual facilities are appropriate to local needs and circumstances, the Best Practicable Environmental Option should be taken into account. England should avoid locking itself prematurely into costly and irreversible options for disposing of waste. New, cheaper and environmentally more sustainable options for managing municipal waste should be sought, in particular by encouraging technological innovation.

The third principle underpinning the strategy is that tackling the rising amount of waste is not just a matter for the Government; it also involves action by individual households, business and other stakeholders.

England faces a clear strategic choice

Do nothing ...

If no changes are made, environmental damage will continue and potentially valuable resources will continue to be squandered. The costs of managing the municipal waste stream will double by 2020, the UK could face fines from the EU for failing to meet its international obligations, and more landfill sites and incinerators will be required. Lack of suitable sites for significant waste facilities in some areas (e.g. the South East) will put even more pressure on greenbelt land.

... or develop a more sustainable approach to waste management

The package set out in this report will minimise waste, boost re-use and recycling, promote alternative approaches to waste management and bring environmental benefits such as reduced methane emissions. Improving resource efficiency should help to make industry more competitive. Households will have access to more convenient facilities for recycling, at little extra cost. Most importantly, fewer landfill sites and incinerators will be required, improving the local environment for all.

Doing nothing offers the least value for money as costs will still double and greater environmental degradation and resource wastage will occur. Over the long term the strategy set out in this report costs only 10% more than doing nothing, while delivering a sustainable waste management system equal to best practice in other nations, with significant corresponding environmental and resource productivity benefits. Taking account of externalities, the investment package is a classic example of 'spend to save'.

The proposed strategy in this report puts waste reduction and recycling at its core

Previous waste strategies have endorsed the waste hierarchy and the need to minimise and recycle waste, but were short of delivery mechanisms. The strategy in this report emphasises waste minimisation and recycling, and sets out the key measures needed to achieve its goals, focusing in particular on an enhanced role for economic instruments, new investment and reformed delivery structures.



To be successful the future strategy for waste management needs to have three key elements

These are:

- a robust long term economic and regulatory framework;
- a package of short to medium term measures to put England on the path to more sustainable waste management; and
- additional funding accompanied by radical reform of delivery structures.

Putting in place a robust economic and regulatory framework is the most essential ingredient for success

This requires:

- **a significant increase in the landfill tax over the medium term.** Landfill tax remains relatively low in the UK, which reduces the economic incentive to develop alternatives. A rise to £35 a tonne is required over the medium term to change behaviour. It needs to be signalled several years in advance, as in other nations, to allow the development of alternatives. Redirecting proceeds from the increased landfill tax partially directly back to business, and also investing in alternative methods of waste management, should minimise any upward pressure on business costs. Waste costs are a small part of most business sectors' turnover and even at £35 a tonne, landfill tax in the UK would be lower than in many other EU nations;
- **greater freedom for local authorities to develop new financial incentives for householders to reduce and recycle their waste.** Households currently pay the same Council Tax no matter how much waste they produce or whether they recycle or not. This means that they have no incentive to manage their waste in more sustainable ways. This report has identified 17 other major industrialised nations where incentives are available for households who produce less waste, and/or recycle and compost more. These schemes have helped reduce waste growth, contain costs, and achieve recycling rates 3-4 times higher than that of the UK. Comparable incentives that could be taken forward in the UK include: Council Tax discounts for people who recycle or compost; reward schemes for people who recycle or compost regularly; and giving local authorities freedom to introduce variable charging schemes, where the Council Tax element for waste would be removed and charges to households made according to the amount of un-recycled and unsorted waste they produce;
- much waste is the result of poor product design and inefficient manufacturing processes. Producer responsibility is a key to better waste management and there is substantial new EU regulation in the pipeline. Rather than add more regulation, this report recommends **additional voluntary agreements with manufacturers. For example, to increase the recyclability of their products;** and
- **consideration of new financial incentives for 'green' goods** such as reduced VAT on recycled products, where legal, to boost use and expand markets. Product taxes could be levied on products



that cause environmental harm to encourage the development of environmentally-friendly substitutes. For example, Denmark, Belgium and Italy tax batteries containing heavy metals. Some countries also offer manufacturers the alternative of 'bring back' schemes where households can return hazardous waste for safe disposal. These measures should be considered in the context of the whole supply chain for different products.

Investment is required in four key areas to accelerate progress and give local authorities and households more choice in managing waste effectively

These are:

- tackling the growth in waste. This can be done through increasing WRAP's role in waste minimisation programmes; expanding home composting; and increasing funding to Envirowise to help industry reduce waste;
- developing the infrastructure for recycling and associated education programmes. Kerbside recycling programmes, focusing on organic waste, should be rolled out to households to make it easier for everyone to participate in recycling. Awareness also needs to be raised to ensure effective use of new waste infrastructure and high participation in efforts to promote the use of composted and recycled goods;
- improving data and research on waste management. Lack of data and research has undermined efforts to develop a waste strategy, and is essential to monitor progress; and
- giving financial backing to pilots of alternative technologies for waste treatment.

To ensure additional funding and new investment effectively tackles the growing amount of waste, they should be accompanied by reforms to the delivery structures

This report proposes:

- that while one third of the existing Landfill Tax Credit Scheme revenue should be retained in its current form, the remaining two thirds should be used to fund key measures set out above and below. This will create a significant funding stream over the next 2-3 years – which will then continue to rise in tandem with the level of landfill tax revenues;
- extending the role of WRAP in order to minimise waste, boost recycling rates, (focusing on organics), and extending markets for recycled goods;
- setting up an operational task force to help bridge the gap between central policy-making and action at a local level. This would help to spread best practice among local authorities and drive progress;
- giving local authorities incentives to work together more effectively through joint plans and funds to realise economies of scale and focus on sustainable waste management. In the medium term, this might involve combining waste collection and disposal authorities to create unitary resource management authorities with targets for waste minimisation, recycling and reducing quantities of waste sent to final disposal options;
- establishing an industry forum, so that government and the waste industry can have a constructive dialogue on key issues;



- better resourcing of the waste function in DEFRA to help it to co-ordinate and disseminate waste policy more effectively and take a proactive approach at the centre of government; and
- establishing a steering group, chaired by the Secretary of State for the Environment, Food and Rural Affairs, to help implement policy and monitor progress.

Successfully implementing this strategy is not just a matter for central government. Everyone has a role to play

- **central government** needs to set the strategic and policy direction on waste management; put in place the framework to support this strategy; disseminate information and have a clear national communications strategy; contribute appropriately to the local authority funding needed to make the necessary changes; minimise and recycle its own waste; and procure recycled goods;
- **local authorities** need to set a strategy for managing municipal waste locally; allocate sufficient resources to waste; and provide an appropriate level of infrastructure to support:
 - home composting to homes that want to compost;
 - kerbside recycling (focusing on organics first);
 - more bring sites and better civic amenity sites designed for re-use and recycling;
 - more practical support and advice for local people;
 - minimising and recycling the authority's own waste;
 - buying and specifying composted and recycled products;
- dissemination of the national communications strategy in the context of local needs; and
- providing incentives for sound waste management.
- **producers and retailers** need to reduce the amount of waste they produce; pass on less waste through the supply chain to customers; and use recycled materials wherever possible;
- **the waste industry** needs to provide an appropriate range of waste-handling facilities, in line with government policy and regulatory requirements; identify and pursue opportunities for developing new technologies; and take responsibility for the long-term safe operation and aftercare of waste facilities;
- **householders** need to reduce the waste they produce, for example through home composting and purchasing goods with less packaging; reusing products; using recycling facilities; and contributing to collections for composting facilities where home composting is not practical; and
- **NGOs and the community sector** need to educate householders in minimising waste and reusing and recycling goods; develop partnerships with local authorities and business to help promote and deliver recycling services; and continue innovating on service delivery.

Implementation of the strategy would enable England to match best practice in other countries and at lower cost

The key success measures for the strategy in this report, if taken forward by government, will be:

- reducing the rate of household waste growth to 2% per annum by the end of 2006;

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- 50% of households carrying out home composting by 2006;
 - the roll out of kerbside recycling collections;
 - a target of at least 35% of household waste being composted or recycled by 2010 and at least 45% of household waste being composted or recycled nationally by 2015;
 - an absolute reduction in the amount of municipal waste going to landfill annually from 2007; and
 - 30% of collection authorities to have tried incentive based schemes to encourage sound management of household waste by 2005/6.

It needs to be backed up by effective arrangements for driving forward and monitoring progress

The Secretary of State for the Environment, Food and Rural Affairs should be the Ministerial Champion for this strategy. But, in the short term a ministerial group reporting jointly to the Secretary of State and the Chief Secretary to the Treasury should develop the public expenditure programmes and arrangements needed to implement this report.

1. INTRODUCTION

Summary

The Strategy Unit was tasked at the end of 2001 with carrying out a review of the Waste Strategy in England.

The aim of this review has been:

- to analyse the scale of the challenge posed by growing quantities of municipal household waste;
- to assess the main causes and drivers behind this growth now and in the future; and
- to devise a strategy, with practical and cost-effective measures for addressing the challenge, which will put England on a sustainable path for managing future streams of household waste.

This report sets out the findings of a review of waste strategy in England

1.1 The Strategy Unit (SU), formerly the Performance and Innovation Unit, was asked by the Prime Minister to carry out a review of Waste Strategy¹ at the end of 2001. It was asked in particular to consider the implications of Article 5 of the EU Landfill Directive² which sets targets for reducing the proportion of biodegradable, municipal waste sent to landfill sites.

1.2 This report's focus on municipal waste – i.e. waste under the control of local authorities – does not mean that other wastes are unimportant. On the contrary, their aggregate

volume is substantially greater than municipal waste, and hazardous, industrial and commercial waste streams are also increasingly affected by EU Directives. A working paper on the SU web site sets out proposals for further work that might be undertaken on such waste streams. Where appropriate this report highlights recommendations relevant to the more sustainable management of other wastes.

1.3 The study is concerned with waste policy in England as waste policy, with the exception of most economic instruments,³ is devolved. Wales, Scotland and Northern Ireland have their own waste strategies.⁴ Some of the positive steps underway in the devolved administrations to tackle waste are set out in Box 1.

¹ Department for the Environment, Transport and the Regions, *Waste Strategy 2000 for England and Wales* (May 2000). As stated above, Wales now has its own Waste Strategy

² Council Directive 99/31/EC on the landfill of waste

³ Chapter 9 clarifies any impacts of the report's recommendations on the devolved administrations

⁴ *Wise about Waste* – The National Waste Strategy for Wales (June 2002) is available at www.wales.gov.uk/subienvironment/content/wastesummary-e.pdf. The National Waste Strategy for Scotland (1999) is available at www.sepa.org.uk/nws/pdf/nws/national_waste_strategy.pdf. Scotland's new National Waste Plan will be published in 2003. Northern Ireland's Waste Strategy is available at www.ehsni.gov.uk/pubs/publications/NIWMS.pdf



Box 1: Tackling waste in the devolved administrations

Wales

The National Waste Strategy for Wales, published in June 2002, sets out how Wales plans to move from current over-reliance on landfill to more sustainable waste management. The Strategy includes a number of specific targets for Wales including waste reduction targets for public bodies and businesses (the aim is to have reduced the volume of waste to at least 10% of the 1998 level by 2010). The Strategy also emphasises the importance of government, business, retailers and the public all playing their part in tackling waste. For example, manufacturers are encouraged to invest in green products likely to represent a future growth sector, and retailers to support eco-labelling.

Scotland

Scotland is preparing a National Waste Plan which will emphasise the importance of reducing the quantity of municipal waste and encouraging recycling and composting through segregated collection and bring facilities. This should reduce the scale of new facilities required in Scotland to treat and dispose of mixed waste. Local authorities are being encouraged to pursue local waste solutions for their own areas through collaborative working with neighbouring authorities.

Northern Ireland

Northern Ireland has launched a major new waste awareness campaign 'Wake up to Waste,' involving television and radio advertisements, shopping centre roadshows and a dedicated campaign website (www.wakeuptowaste.org). The campaign focuses on easy, practical steps which the public can take every day to reduce and re-use waste, for example re-using plastic carrier bags. A number of recycling operations have already reported increases of 10-30% in the volumes of recyclable materials collected since the campaign began in February 2002.

1.4 However, the Landfill Directive applies UK-wide so, where appropriate, reference is made to the challenges faced by the whole of the UK.

The review had four main objectives:

- to analyse the scale of the waste problem, its causes and barriers to progress;
- to identify the most cost-effective and environmentally sustainable options for dealing with the growing volume of municipal waste in England;
- to make recommendations on how the EU Landfill Directive targets could be delivered; and

- to set out a vision of the waste management system to 2020 that will allow the nation to prosper whilst protecting human health and reducing harm to the environment.

The review was carried out by a multi-disciplinary team with support from an Advisory Group

1.5 The review team consisted of civil servants and secondees from outside Whitehall. Annex B gives details of the team members and their parent organisations.

1.6 In carrying out the project, the SU team drew on the expertise of an Advisory Group which consisted of various experts and stakeholders from inside and outside government. Annex B lists the Advisory Group's



members. Margaret Beckett, the Secretary of State for the Environment, Food and Rural Affairs, acted as the project's sponsor Minister and Chair to the Advisory Group. The input and assistance of the Advisory Group was a crucial part of the project. The advisory role of the Group does mean, however, that this report does not necessarily represent the views of all its members.

1.7 The SU team was also assisted at working level by a Support Group consisting of a variety of stakeholders representing central and local government, the waste and packaging industries, green groups, NGOs and others. The SU is grateful for the support and assistance of the Support Group as well as the wide variety of stakeholders who have contributed to discussions during the course of the project.

There were a number of methodological stages to the review

The review had eight distinct phases:

- a Waste Summit was held by Margaret Beckett, Secretary of State for the Environment, Food and Rural Affairs, at the outset of the project in November 2001. This provided invaluable material on the scale and nature of the waste problem and options for overcoming it;
- a scoping note for the review setting out the key issues to be addressed was produced in December 2001. This was posted on the SU web site and views were sought from stakeholders;
- workshops were held with experts and stakeholders to discuss various waste management options and their pros and cons. These addressed issues such as waste minimisation, recycling, residual waste management and the planning process. Bilateral discussions were also held with a wide range of stakeholders;
- a review was conducted of the economic and regulatory frameworks for waste management that have been adopted by other nations. Members of the SU team visited the Netherlands, Belgium and Italy to discuss how they had improved their management of waste;
- some local authorities were visited to seek their views on barriers to progress and options for more effective and sustainable waste management;
- representatives of the community sector were consulted and MORI was commissioned to conduct focus group research on public perceptions of the problems;
- data was gathered and detailed models developed to analyse the costs and benefits of alternative options for future waste management. This modelling was underpinned by more detailed work on: waste composition and growth rates; technological options and their costs; collection costs; and modelling of likely behavioural responses to different recycling and composting options. The aim of this modelling was not to try to predict the future but rather to increase understanding of potential solutions, their costs and benefits; and
- drawing on the above, the team worked up a vision for the sustainable management of waste in England and a strategy for achieving it including funding requirements, the necessary economic and regulatory framework, and reforms to delivery structures.

The rest of this report is structured as follows...

- **Chapter 2** gives an overview of the scale and growth of waste streams in England, how they are managed and how England compares with other countries;



- **Chapter 3** describes why tackling waste matters and sets out the economic and environmental challenge;
- **Chapter 4** discusses the main barriers to more sustainable waste management;
- **Chapter 5** outlines a vision and strategy for moving forward;
- **Chapter 6** sets out the economic and regulatory framework required for change in the medium and longer term;
- **Chapter 7** sets out a package of short to medium term strategic investment measures required to put England on the path to more sustainable management of its waste streams;
- **Chapter 8** sets out the funding and delivery mechanisms required; and
- **Chapter 9** summarises the key recommendations and sets out an action plan.

Annexes cover:

- the role of the SU;
- details of the project team, Sponsor Minister and Advisory Group;
- an overview of wider controlled wastes; and
- a glossary of terms used in the report.

The following annexes are published on the SU website:

Annex E:	Greening government procurement	Annex J:	The SU's review of the literature on health effects of waste management options
Annex F:	The role of alternative technologies	Annex K:	New delivery frameworks
Annex G:	Treatment and disposal of residual waste (Mechanical Biological Treatment (MBT) and Incineration)	Annex L:	Modelling, data and assumptions
Annex H:	The biowaste fraction	Annex M:	Moving beyond the SU strategy
Annex I:	International comparisons	Annex N:	Bibliography

2. WHAT IS WASTE AND HOW MUCH IS THERE?

Summary

Households in England produce 25 million tonnes of waste every year. Over half of this consists of garden waste, waste paper and board, and kitchen waste.

Waste quantities in England are rising faster than growth in GDP and faster than in most other European countries. At current rates of growth, the costs of managing household waste will double by 2020.

By international standards, England currently disposes of a higher proportion of its municipal waste through landfill (78% of the total) and a much lower proportion through recycling (12%) and thermal treatment (9%).

Waste comes from many different sources

There are several ways to define waste. A description of the main types of waste is set out in Box 2 below.

Box 2: Types of waste:⁵

Controlled waste – describes waste that must be managed and disposed of in line with waste management regulations. It includes municipal, commercial and industrial waste and can come from private homes, schools, hospitals, shops, offices, factories or other businesses. It can be solid or liquid and include a range of materials such as scrap metal, old newspapers, used glass or plastic bottles, aluminium cans, kitchen and garden waste.

Municipal waste – includes all waste under the control of local authorities, whether or not they have contracted out services. It includes all household waste (89% of municipal waste),⁶ street litter, waste sent to council recycling points, municipal parks and garden wastes, council office waste, and some commercial waste from shops and small trading estates where local authority waste collection agreements are in place.

⁵ From *Waste Strategy 2000* op.cit, Chapter 2 and ODPM

⁶ *Municipal Waste Management Survey (MWMS)*, 2000/01, DEFRA



Box 2: Types of waste: (continued)

Household waste – includes regular waste from household doorstep collections, bulky waste collection, hazardous household waste collection, communal collection of garden waste, plus waste from schools, street sweepings and litter.

Commercial waste – includes waste arisings from wholesalers, shops, offices and catering businesses.

Industrial waste – includes waste arisings from factories and industrial plants.

Agricultural waste – includes waste from farms and market gardens – including plastics, packaging, tyres and machinery and dependent on its use, some organic matter such as manure, slurry and crop residues.

Construction and demolition waste – includes any waste arisings from the construction, repair, maintenance and demolition of buildings and structures. It consists of brick, concrete, hardcore, subsoil and topsoil as well as timber, metals, plastics and special waste materials.

Mines and quarries waste – includes materials such as overburden, rock inter-bedded with the mineral resource, and residues left over from the initial processing of extracted material (e.g. tailings).

This report is concerned with municipal waste

2.1 Around 375 million tonnes of waste are produced every year in England. Twenty five million tonnes come from householders, 47 million tonnes from industry and a further 24 million tonnes from commercial businesses. Construction and demolition waste represents around 89 million tonnes of the remaining 190 million tonnes, with materials such as agricultural wastes, mining and quarry wastes, sewage sludge and dredged spoils making up the balance.

2.2 The main focus of this report is on municipal waste in England. This totalled 28.2 million tonnes in 2000/01.⁷ Household waste, estimated to be 89% of the total, or 25.1 million tonnes⁸ typically consists of a wide variety of materials. These include (as a percentage by weight): garden waste (20% of the total); paper and board (18%); putrescible⁹ waste such as kitchen waste (17%); glass (7%); miscellaneous non-combustible waste (5%); dense plastics (4%); and textiles (3%).

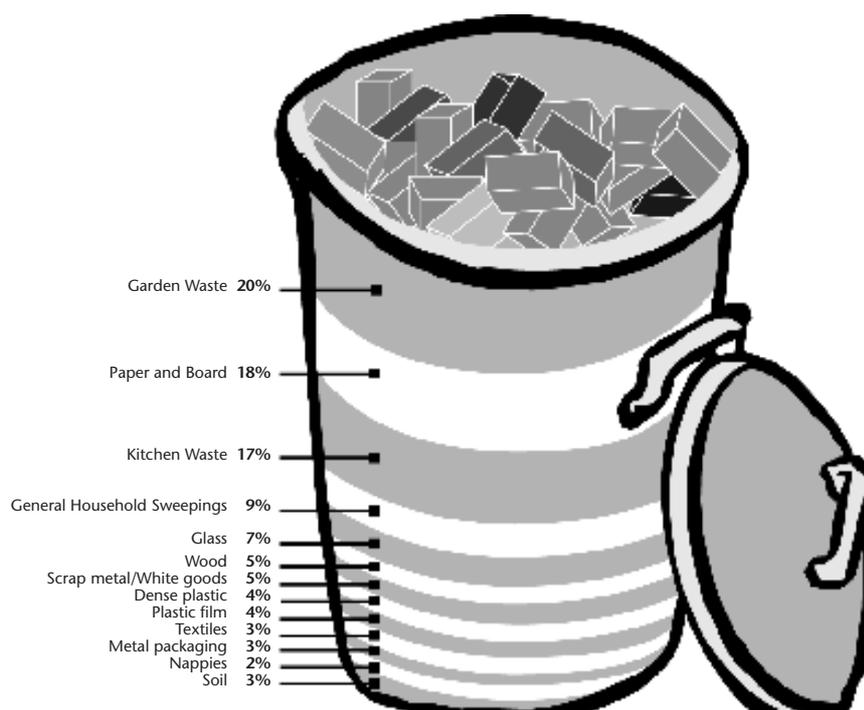
⁷ *English Municipal Waste Management Survey* op.cit

⁸ As footnote 7

⁹ all these could be composted



Figure 1: Composition of Household Waste 2000/01



Source: Parfitt J. *Analysis of household waste composition and factors driving waste increases*

The quantity of municipal waste is growing faster than GDP

2.3 The amount of municipal waste produced in England is growing at around 3-4% per year.¹⁰ This is faster than growth in GDP (around 2-2.5%) and is one of the fastest growth rates in Europe.¹¹ A range of economic and social factors lie behind this growth such as rising household incomes, changing lifestyles, advertising and the growth in sales of pre-packaged goods.

2.4 The growing volume of municipal waste is pushing up the costs of waste management. At current rates, the amount of municipal waste produced in England will double by 2020, with the costs of managing this waste stream, doubling to £3.2 billion¹² per annum from £1.6 billion¹³ currently on unchanged policies.

2.5 Local authorities are under a statutory duty to regularly collect household waste produced by some 21 million¹⁴ households. They also have a duty to collect commercial waste if requested, and may also collect industrial waste. The waste collected, other than that which the

¹⁰ Since 1996/97, the amount of municipal waste collected each year has increased by an average of 3.4% per year. *Municipal Waste Management Survey, 2000/01*

¹¹ OECD/Eurostat data. % increase/year 1991-1999 = 2.48% in Belgium; 2.55% in Austria; 0.43% in Denmark; compared to 3.87% in the UK (Eurostat figures)

¹² SU analysis based on waste growth at 3%

¹³ Estimate. Latest outturn figure is £1.5 billion in 2000/01, CIPFA (The Chartered Institute of Public Finance and Accountancy)

¹⁴ Mid-year estimate, 2001 Office of National Statistics



authority makes arrangements to recycle, must be delivered to the appropriate Waste Disposal Authority. Increasingly the business of collection, management and disposal of waste is contracted out to private sector waste management companies.

Most of England’s municipal waste goes to landfill sites

2.6 England landfills the majority of its municipal waste. Almost 80% of municipal waste is handled in this way, compared to 50% of commercial and industrial waste.

Figure 2: Waste Management in England and Wales, 1998/99

Waste	Landfill	Recovery ^(a)	Recycling/Composting
Industrial waste (excluding construction and demolition waste)	44%	48%	44%
Commercial waste	68%	28%	24%
Municipal waste	78%	21%	12%
(a) including recycling and composting and energy recovered via incineration (therefore the total percentages add up to more than 100%)			

Source: Waste Strategy 2000 – based on provisional data
Municipal waste: England Municipal Waste Management Survey, 2000/01, DEFRA

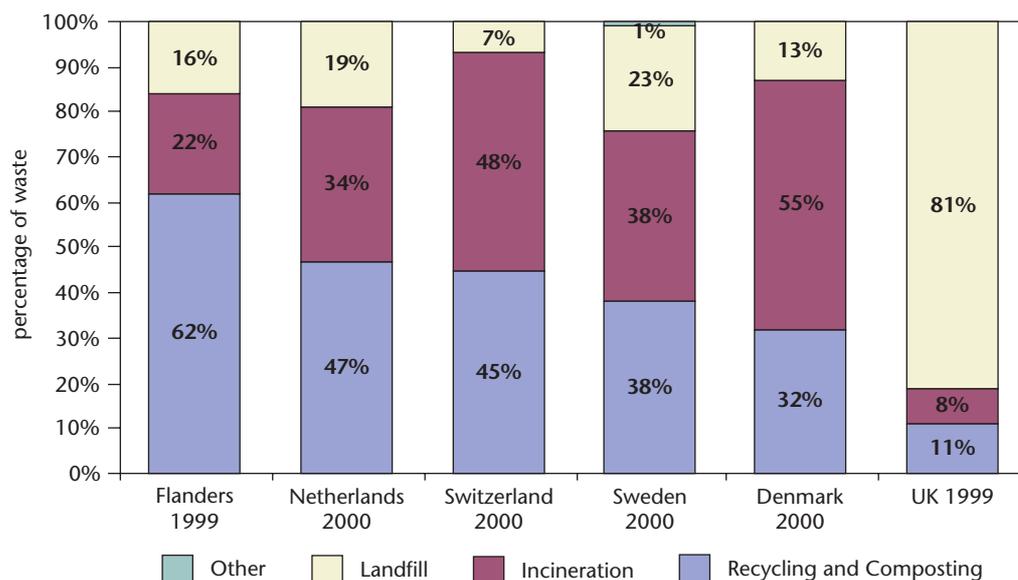
This contrasts with waste management in most other countries

2.7 Figure 3 compares the different waste management methods used by different countries. Most other countries in the EU as well as the USA, Canada, Australia and New Zealand rely on a mix of alternatives. This commonly includes extensive recycling infrastructure and developing new technologies to tackle waste as well as landfill.

2.8 England recycles 12% of its municipal waste stream, and deals with 9% of it through thermal treatment technologies including incineration. This is in contrast to the waste management methods of most of the UK’s European neighbours. For example, Switzerland recycles or composts 45%, incinerates 48% and landfills just 7%.



Figure 3: Methods of waste management by country



Source: Figures taken from Green Alliance "Creative policy packages for waste: lessons for the UK" Autumn 2002. UK figures are for England and Wales only. Figures for municipal waste for the Netherlands and Denmark were constructed by the Green Alliance.

Other countries also use a wider range of policy instruments to tackle growth in waste volumes

2.9 Many of the most successful European nations have in place more comprehensive packages of both legislative and incentive-based measures to reduce growth in waste volumes and move waste management up the waste hierarchy. For example, they tend to make greater use of higher landfill taxes, landfill bans of some waste streams, variable household charging for the collection and disposal of waste (found in at least 17 other countries) and Extended Producer Responsibility (EPR).¹⁵ EPR extends the responsibility of producers for environmental impacts of their products to the entire life cycle including take-back, recycling and disposal. These kinds of packages of

measures, supported by a strong economic and regulatory framework, make it more profitable for waste companies to invest in alternatives to landfill and help to reduce/recycle waste.

2.10 A few specific examples of the means used across Europe to promote alternative options are given in Box 3.

¹⁵ Dr Jane Beasley, CIWM – work for the SU (see Annex I)



Box 3: Instruments used in other countries to promote alternatives to landfill

Waste prevention and minimisation is tackled in a number of countries through the use of product taxes on a life-cycle approach. For example, **Denmark** has a general tax on disposable items such as batteries, electric bulbs, tyres and pesticides. Similarly, **Belgium** has a product tax on a number of items including disposable drinks containers and some types of packaging. **Italy** and recently **Ireland** introduced taxes on carrier bags.

Waste minimisation, re-use and recycling is successfully promoted in a number of countries through deposit refund schemes. **Sweden**, for example, operates such a scheme for glass and plastic bottles, and aluminium cans, and **Germany** for a variety of products. Some countries have reported high administrative costs in setting up such schemes, although a number of schemes have achieved return levels above 90%.

Diversion from landfill has been encouraged in a number of countries through the use of landfill taxes, often administered with additional instruments including landfill bans on certain types of waste. The current UK landfill tax rate is £13¹⁶ (20.3 Euros) per tonne compared to landfill tax rates in countries such as **Denmark** (50 Euros per tonne) and **Austria** (43.6 Euros per tonne). Some countries have used landfill tax revenues to develop alternative infrastructures for managing waste, while incentivising a shift towards alternative waste management approaches.

¹⁶ The Government announced in the 1999 Budget that it intends to raise the standard rate of landfill tax by £1 per tonne in April each year to 2004, subject to Parliamentary approval. Budget 2002 stated that "The Government anticipates that the rates of landfill tax will need to be increased significantly in the medium term as part of the mix of future policy measures. The Government will take future decisions on landfill tax, and consider the case for a tax on incineration, in the light of the findings of the PIU waste project." HM Treasury Budget 2002

3. WHY WASTE MATTERS – THE ECONOMIC AND ENVIRONMENTAL CHALLENGE

Summary

There are strong economic and environmental reasons for tackling the growing quantity of waste:

- a) poor product design and manufacturing processes add unnecessarily to industrial costs as well as creating extra household waste;
- b) disposing of waste causes serious pollution. For example, landfill sites account for around 25% of UK methane emissions (a powerful greenhouse gas); and
- c) well targeted government intervention to reduce the rate of growth in waste volumes would be wholly consistent with principles of sustainable development.

England has invested less in reducing the volume of household waste and in alternative methods of disposing of it than other countries. This reflects the historic availability of cheap landfill sites in this country. But such sites are becoming increasingly scarce, especially in the South East.

Taking account of the derogation to which the UK is entitled, the EU Landfill Directive requires the volume of biodegradable municipal waste sent to landfill to be reduced to 75% of the 1995 level produced by 2010; 50% by 2013; and 35% by 2020.

Unless waste management practices change there will be a widening gap between practice and our international legal obligations.

Addressing this gap is the key challenge for future waste strategy. Later chapters of this report will set out what should be the main elements of a strategy to close the gap.



There are sound economic and environmental reasons for a more sustainable approach to managing waste

3.1 Securing sustainable waste management is arguably the biggest environmental challenge after climate change.¹⁷ The case for action has been accepted at all levels of government:

- internationally, as a part of the Sustainable Development Summits in 1992 and 2002 which have led the call for a de-coupling of economic growth and contributors to environmental damage;
- in Europe, where legislation is driving more sustainable waste management; and
- nationally, as a part of agreed existing and previous UK Government policy on sustainable development and waste.

3.2 The case for action has also been accepted by the public, who when presented with the choices between different waste management options¹⁸ call for more opportunities to recycle, and less reliance on landfill.

3.3 Government intervention to tackle waste will bring benefits to:

- **the economy** – there are economic opportunities to be realised from improving the way that waste streams are managed. For example, less wasteful product design and manufacturing processes will translate directly into cost savings for business. New waste technologies and services can also provide new markets for UK businesses and generate significant revenues;

- **the environment** – benefits to climate change are likely to result from minimising waste and more re-use and recycling. As waste continues to grow, so too will its contribution to climate change and environmental degradation if we do not change how we deal with it; and

- **society as a whole** – alternative waste management options, particularly recycling, can have a positive effect on social cohesion and inclusion, because of the community-based nature of such activities. Good waste management also sends appropriate signals to the public about valuing the local environment and can help both to reduce anti-social behaviour, such as fly-tipping and littering, and to improve local liveability.¹⁹

Reducing excessive reliance on landfill should be a policy priority for England

3.4 As Chapter 2 showed, England is highly reliant on landfill as its main method of waste disposal.²⁰ Yet landfilling waste is generally the least sustainable of all the waste management options:

- landfill sites account for 25%^{21,22} of all UK methane emissions – a powerful greenhouse gas;
- by landfilling biodegradable waste, resources that could be re-used or recycled are lost;

¹⁷ There are links between the two issues as waste management impacts on climate change

¹⁸ MORI *Public Attitudes Towards Recycling and Waste Management* Research for the SU, (September 2002). Report available at www.strategy.gov.uk/2002/waste/downloads/mori.pdf. Research shows that the disposal of society's waste is not an environmental issue at the forefront of people's minds. However, its significance as an issue rises when people are prompted about the waste management options they face

¹⁹ Intensive recycling schemes tend to reduce the quantity of street litter arisings. Robin Murray, personal communication

²⁰ 78% of municipal waste goes to landfill in England

²¹ Biffa *Future Perfect* (2002) quotes DEFRA figures on UK methane emissions by source: waste accounted for 3.8MT Carbon in 2000 (out of a total of 14.3MT Carbon emissions overall)

²² Although methane gas is increasingly being captured from landfill sites

- public concerns have been raised about the impact of all waste management facilities, but particularly about the quality of the environment surrounding landfills, including noise, odour and litter problems, as well as potential health effects of emissions; and
- landfill sites are becoming increasingly scarce in the South East and North West due to other pressures on land use and proximity to settlements. Transporting waste further distances to be landfilled will mean further impacts on the environment.

This priority would be consistent with the EU Landfill Directive, which requires significant reductions in the amount of biodegradable municipal waste sent to landfill

3.5 The aim of the EU Landfill Directive, which applies to most waste, is to prevent or reduce the negative effects of landfill, including the production of methane from organic sources. As with any EU Directive, non-compliance carries the potential sanction of a fine. It has been suggested that the UK could be fined up to £180 million a year if it does not comply with the Landfill Directive targets.

3.6 The main requirements of the Landfill Directive are set out in Box 4 below:

Box 4: Requirements of the Landfill Directive:²³

To reduce the volume of biodegradable municipal waste sent to landfill to 75% of that produced in 1995 by 2010, 50% of that produced in 1995 by 2013 and 35% of that produced in 1995 by 2020. These targets take account of a 4-year derogation offered by the EU to those countries heavily reliant on landfill such as the UK.

The co-disposal of hazardous and non-hazardous wastes is banned from 2004, and separate landfills for hazardous, non-hazardous and inert wastes are required.

Landfill of tyres is banned (by 2003 for whole tyres; by 2006 for shredded tyres).

Landfill of liquid wastes, certain clinical wastes and certain types of hazardous waste is already banned.

There are also provisions to control, monitor and report, and close sites.

²³ Council Directive 99/31/EC on the landfill of waste

Current policies are failing to tackle rising waste quantities or to reduce the quantity of waste going to landfill sites

3.7 Successive governments have recognised the need to move to more sustainable forms of waste management. Governments have responded to this challenge by producing framework strategies within which they have set targets to move away from landfill and deliver higher rates of recycling. Until Waste Strategy 2000, the targets were aspirational (and remain so for non-municipal streams). However, in the absence of a coherent mix of policy and delivery instruments, successive targets have not been met:

- 1990 – The Environment White Paper²⁴ – set a target of 25% recycling by 2000. This has not been met;
- 1995 – “Making Waste Work”²⁵ – the recycling and composting rate for household waste stood at 6%. This document re-emphasised the need to meet the 25% target by 2000;
- 1999 – “A Way with Waste”²⁶ – recognised that the 25% recycling/composting target would not be met by 2000;
- 2000 – Waste Strategy 2000²⁷ – set targets of recycling or composting 17% of the household waste stream by 2003/4. This was translated into statutory targets for each local authority. This is unlikely to be met as performance in 2001/2 was under 12%.²⁸

Waste Strategy 2000 also set a target of 25% of household waste to be recycled/composted by 2005/6. On current progress it will be very difficult to achieve this.

3.8 England spends about 60% of the EU average on waste management and disposal (i.e. around 0.5% of GDP in the UK versus 1.0% in the Netherlands)²⁹ and around 40% of those at the leading edge of waste management (Figure 4). Because of England’s reliance on landfill, householders pay some of the lowest rates for waste collection and disposal in Europe – around £50 per year on average,³⁰ which is roughly half the EU average and about 30% of the rate of high performing countries. England’s lower spend on waste per capita reflects both the relative cheapness and the efficiency of landfill. However, while some landfill will justifiably continue to provide a disposal route for certain wastes,³¹ England’s current over-reliance on this form of waste disposal means that significant environmental impacts are not being captured in what households pay. The UK has the same population as France and the same GDP, but spends 50% less on municipal waste management; France diverts 150% more municipal solid waste from landfill than the UK.³²



A landfill site – photo courtesy of Hampshire County Council

²⁴ Department of the Environment, *This Common Inheritance: Britain’s Environmental Strategy*, (1990)

²⁵ Department of the Environment and Welsh Office, *Making Waste Work: a strategy for sustainable waste management in England and Wales*, (December 1995)

²⁶ Department of the Environment, Transport and the Regions, *A Way with Waste: A draft Waste Strategy for England and Wales* (part one), (June 1999)

²⁷ Department of the Environment, Transport and the Regions, *Waste Strategy 2000 for England and Wales*, (May 2000)

²⁸ *Municipal Waste Management Survey 2000/01* op.cit

²⁹ Kees Wielenga, FFact Management Consultants *An alternative view from the Netherlands*, 3rd ESTET Conference, (18 September 2002)

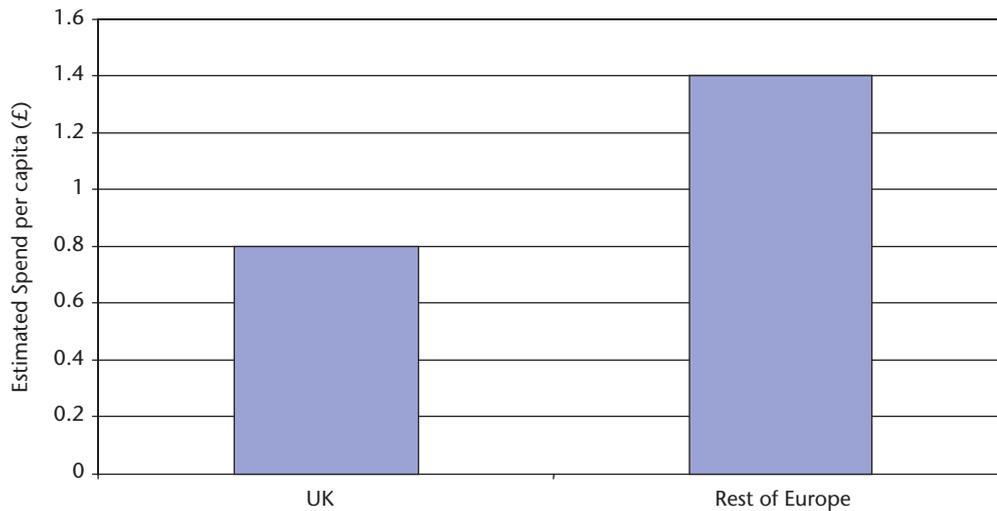
³⁰ Taking into account central government grants and business rates. This is far less than households think (they estimate £200-£260 when asked). Waste Watch 1999 *What people think about waste* and MORI survey for the Environmental Services Association

³¹ Wastes which are not reusable, recyclable, compostable or flammable and have no other beneficial use

³² Hazell D, ESA, personal communication



Figure 4: UK's spend on waste per capita per week compared to the European average



Source: Hazell D, Environmental Services Association, Dr Dominic Hogg, and FFact Management Consultants

3.9 Other European countries give higher political priority to waste issues, and therefore tend to have far higher public awareness of the waste problem. Many have introduced education programmes informing businesses and the public how to go about waste reduction, re-use, recycling and composting. They have been able to persuade their citizens that even making small lifestyle changes, for example choosing products containing recyclable materials, re-using products, composting and taking part in recycling schemes, can help to reduce growth in waste volumes, cut the cost of managing waste and secure environmental benefits for all.

The current strategy is set out in Waste Strategy 2000

3.10 Waste Strategy 2000 set out the vision, aims and objectives of sustainable waste management in England and Wales for the next 20 years. It has two underlying principles:

- protection of the environment and of human health; and
- the waste hierarchy

3.11 Both of these are derived from the Waste Framework Directive.³³ The first has been the rationale for the regulation of the waste industry since the Public Health Act of 1875.³⁴ The second is a proxy for sustainable waste management at national level, but should also take account of the BPEO (Best Practicable Environmental Option)³⁵ at local level and the proximity principle.³⁶ These fundamental principles would need to underpin any strategy for waste and resource use.

3.12 Waste Strategy 2000 identified the need to minimise waste and to recycle, compost or re-use waste that was produced. However, there were few instruments put in place that would directly bear on waste growth. Positive actions that have been taken to deliver Waste Strategy 2000 and meet current targets include:

³³ Council Directive 75/442/EEC as amended by Council Directive 91/156/EEC

³⁴ The 1875 Act charged local authorities with the duty to arrange the removal and disposal of waste

³⁵ BPEO (see Chapter 5)

³⁶ The Proximity Principle is a key element of EU environmental and waste management policy. It advocates that all waste should be disposed of, or otherwise managed, as near to its place of production as possible



- setting up the Waste and Resources Action Programme (WRAP) to help strengthen the market for recyclables;
 - setting local authorities statutory targets for recycling and composting of household waste for the first time;
 - setting up arrangements for those targets to be pooled by local authorities where they wish to do so;
 - increasing funding for local authorities through the Environmental Protection and Cultural Services (EPCS) Standard Spending Assessment which includes waste;
 - setting up the Waste Minimisation and Recycling Fund to support local authority waste minimisation, recycling and composting projects in 2002 and 2003;
 - announcing funding through the New Opportunities Fund to support community sector recycling;
 - introducing legislation for a landfill allowances scheme setting limits for the amount of biodegradable municipal waste which councils may send to landfill;³⁷ and
 - supporting investment in waste infrastructure through the Private Finance Initiative; funds have been repositioned to support very high recycling rates.
- minimising waste (as exemplified by the absence of any waste minimisation targets); and
 - putting in place the economic and regulatory framework and enough associated policy tools to deliver tangible improvements in waste minimisation, re-use and recycling.

There is a major and growing gap between waste produced, amounts of waste sent to landfill and what the Landfill Directive will allow

3.14 Without more progress it is clear that England will move further away from meeting the EU Landfill Directive, as Figure 5 shows.

3.15 Few alternatives to landfill have been put in place and international experience has demonstrated that there are long lead times in getting new infrastructure in place and changing behaviour. For example, in the Netherlands and Belgium it has taken 10-15 years to achieve change following increases in landfill tax, producer responsibility measures and significant new investment in waste infrastructure.

3.16 The UK has only 8 years until the first EU Directive comes into force and must make considerable progress quickly.

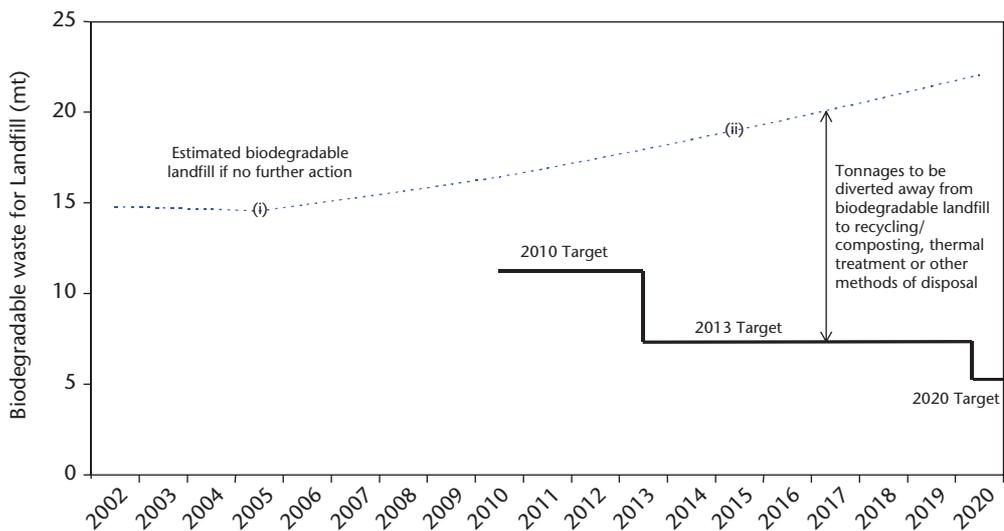
3.13 Despite these positive steps, there remains concern that the targets in Waste Strategy 2000 will not be met. In particular, there is concern that Waste Strategy 2000 gives insufficient attention to:³⁸

³⁷ Waste and Emissions Trading Bill, November 2002

³⁸ Select Committee on the Environment, Transport and Regional Affairs 5th report, *Waste Management, the Strategic Challenge*



Figure 5: Estimated biodegradable waste for landfill in England versus the EU Landfill Directive targets (million tonnes)



Source: Strategy Unit analysis which (i) takes account of incinerator capacity coming on stream; and (ii) assumes incinerator capacity does not increase and all additional waste goes to landfill

4. BARRIERS TO MORE SUSTAINABLE WASTE MANAGEMENT

Summary

A number of factors lie behind the absence of a more sustainable approach to waste management in England:

- historically, waste has not been an area of policy priority and there has been a relative abundance of cheap landfill sites. This has resulted in comparatively low levels of investment in waste management;
- there has been a lack of public awareness of the seriousness of the waste problem alongside perceptions that new waste facilities of all kinds may be damaging to health or have other disbenefits;
- the economic and regulatory framework has offered few incentives either for a reduced rate of growth in waste volumes or for alternative methods of management and disposal (such as recycling);
- delivery structures at both national and local level have been complex, with insufficiently clear responsibilities and accountabilities for delivering change; and
- there have been various practical problems and barriers such as delays in granting planning permissions for waste management plants of all kinds.

England has not needed to invest in alternatives to landfill because of its geology and history

4.1 England's reliance on landfill reflects its geology and extraction industry history, which have made suitable landfill sites relatively abundant. This abundance of cheap landfill sites

has also meant that England, unlike many of its European neighbours, has not needed to invest to the same degree in alternative waste management options.

4.2 However, England now needs to make a substantial shift away from landfill to other methods of waste disposal. This will require a number of institutional and practical barriers set out in this chapter to be overcome.



Waste has not been an area of policy priority

4.3 Historically, waste policy has struggled to compete for resources with other areas of public expenditure both nationally and locally. Indeed, environmental issues generally have only really moved towards the top of the policy agenda over the past 15-20 years. Even then the focus has been on problems such as climate change rather than the challenges posed by waste.

The economic and regulatory framework has offered few incentives for waste minimisation or the development of alternative methods of waste management

4.4 The economic and regulatory framework in the UK has done comparatively little to incentivise waste minimisation or to encourage a move to alternatives to landfill:³⁹

- there have been few measures to curb the growth of waste volumes apart from, for example the introduction of producer responsibility measures for packaging targets following the EU Packaging Directive;
- householders have little or no incentive to minimise or recycle their waste. They pay the same regardless of the amount of waste they produce. The costs of waste collection and disposal are only indirectly passed on to householders through Council Tax;
- despite the introduction of the landfill tax, landfill has remained a low cost and readily accessible method of waste disposal. To date

the level of landfill tax has been set to reflect environmental costs of landfill and at too low a rate either to incentivise industry to develop more resource efficient means of production or to encourage local authorities to use alternatives;⁴⁰ and

- explicit incentives for recycling have been limited. Measures such as the payment of recycling credits for waste collection authorities, have had only a marginal impact on the costs of treatment and disposal, and collection costs have remained unaffected. Similarly, neither statutory recycling targets nor measures to promote markets for recyclates have yet had much impact.

Delivery structures have been too complex to be effective

4.5 Responsibility for waste is split between several government departments and agencies:

- policy between DEFRA and DTI;
- funding between HMT, ODPM and DEFRA;
- regulatory responsibility is split between the Environment Agency (EA) and local authorities.

4.6 Various stakeholders consulted as part of this study have argued that the lack of a single focus for waste policy has caused confusion, made coherent policy making more difficult, and made it more difficult to make the case for waste to be treated as a priority for central government. A number of stakeholders have called for the current split of responsibility between DEFRA and DTI in particular to end.⁴¹ While DEFRA leads on most waste negotiations, responsibility for responding to some EU Waste Directives is split between DTI and DEFRA as both Departments have major interests.

³⁹ there are several reviews of the economic and regulatory framework in the literature. See, for example, Final Report to the National Resources and Waste Forum, Eunomia Research and Consulting and Julia Hummel, *The Legislative Driven Economic Framework Promoting MSW Recycling in the UK*. (2002)

⁴⁰ Dirk Hazell, ESA, personal communication

⁴¹ See for example BIFFA *Future Perfect* (2002)



4.7 As well as DTI and DEFRA, the EA has also taken a role in trying to clarify policy. Whilst this is understandable, it adds to confusion. DEFRA and the EA need to work together to ensure there is a clear interpretation of EU waste policy from DEFRA, and the EA needs to play its role in ensuring this interpretation is used consistently in the provision of advice across regions.

4.8 At local authority level, the split between collection and disposal authorities appears to be unique in Europe.⁴² The Audit Commission⁴³ has found that this split leads to inefficiencies and state that two tier local authorities, where collection and disposal are split, will find it harder to meet their targets.

The planning system has caused long delays in getting permission for new waste facilities of all kinds

4.9 Delays in obtaining planning permission are perceived as a barrier to the delivery of the Landfill Directive targets and to moving to more sustainable waste management. The issues of concern are:

- the length of time it takes to secure planning permission;
- the risks that permission will be refused due to public opposition; and
- inconsistency in planning decisions.

4.10 While some delay may be a legitimate part of the local democratic process, a number of stakeholders have expressed concern at excessive delays in getting planning permission for waste facilities of all kinds. Applications for composting facilities (both open windrow and

in-vessel), recycling facilities, incinerators and landfill sites have all been subject to opposition by the public, often due to concerns about effects on local house prices, traffic and general nuisance such as odours and noise.

4.11 The causes of delay include:

- permissions refused by local authorities due to public opposition even where the proposals are reasonable and in line with the waste plan;
- applications being turned down and going to appeal or other problems in reaching a final decision;
- inconsistency in planning decisions; and
- delays in the production of waste plans. Waste plans can take around four years to produce. A number of planning authorities have still to produce waste development plans, while others, whose plans were adopted prior to publication of Waste Strategy 2000, need to consider their revision.

4.12 Some of the causes are specifically related to the nature of waste:

- by their nature waste facilities are unwelcome and controversial and objections will always be made. Those seeking to secure new facilities do not always take a realistic view of timescales and make applications accordingly;⁴⁴
- there are generic issues which are repeated at every public inquiry, often without new information from a previous debate. This adds delay and may not facilitate the democratic process. Equally some issues may not properly be for the land use planning system at all;

⁴² EUNOMIA Research and Consulting, Dr Dominic Hogg – *Waste in the Resource Productivity Framework*

⁴³ Audit Commission, *Waste Management, Guidance for Improving Services*

⁴⁴ Some commentators have compared the UK system to nations where planning permission is an assumption with a permit to operate, or where democratic objections are not heard. The SU has not looked into these fundamental issues. In the case of waste, there is a good case that it is not only legitimate for objections to be taken fully into account, but also the process is essential if full ownership of waste is to be achieved and with it sustainable choices



- facilities require a pollution control permit or licence⁴⁵ in addition to planning permission. This can be an additional cause of delay;
- some areas interpret the proximity principle very stringently without taking account of the whole life cycle impact of waste. This may lead to unnecessary duplication of facilities and thus avoidable environmental impacts;
- there is a debate about whether there is a need at all, at a national level, for incineration capacity. Guidance is required on whether this is an acceptable form of waste management and, if so, under what circumstances; and
- local authority elected members see no gains from taking decisions on planning applications for waste facilities which are never popular. Facilities are therefore turned down or not determined within the statutory time period, leading to delay and cost both to the taxpayer and applicant on appeals. This can be true even where facilities have been agreed as necessary in the municipal waste strategy.

To date there has been an unwillingness in England to invest on the scale necessary to achieve a more sustainable waste management system

4.13 Earlier chapters have shown that England invests less in waste management and disposal than other countries. This is a major factor behind the failure to shift away from landfill.

4.14 Where investment does take place, there have been concerns about the value for money obtained. PFI schemes, for example, have tended to support large infrastructure projects,

underpinned by long-term contracts, essentially because of the scale and cost of making PFI bids. There is also funding available through the Landfill Tax Credit Scheme (LTCS) but this has been criticised for failing to adequately focus on funding projects to reduce, re-use and recycle waste and for a lack of transparency and quantifiable outputs.⁴⁶

4.15 The problems of long-term, inflexible contracts for waste management options have been raised by a number of stakeholders, particularly with respect to incinerators. Incinerators are typically contracted on a 25-year basis to take guaranteed minimum volumes of waste. These contracts are agreed by local authorities because they see them as necessary to finance the high capital costs of an incinerator and to ensure continuity of feedstock. However, this may reduce the flexibility and incentives for local authorities to pursue recycling. It may be preferable to structure contracts for incinerators so they take waste only after other waste streams have been separated. This would help to avoid any potential for 'crowding out' other options including recycling.

4.16 Insufficient local authority expertise in negotiating and producing effective contracts has been raised as a barrier to more sustainable waste management by a number of stakeholders.

Public awareness of the waste problem, their role in solving it and the true health risks of different waste facilities, is very low

4.17 Public awareness of the growing waste problem is low. Recent MORI research indicated

⁴⁵ An authorisation and licensing procedure which is applied to processes which can have a harmful effect on the environment. It is administered by the Environment Agency and is generally required by a developer to operate a waste management facility in addition to the requirement to obtain planning permission

⁴⁶ Financial Times, *Landfill Tax Credit Lacks Accountability* (25 July 2002)



that only 7% of the public identify waste as an important environmental issue.⁴⁷ There is also a lack of public acceptance that they must do more to tackle waste, for example, by buying more recycled goods and participating in

schemes to recycle waste.⁴⁸ There is a good deal of misunderstanding about waste, and the role of industry and households in tackling it is not widely recognised.

Box 5: MORI research into public attitudes towards recycling and waste management⁴⁹

MORI research found a number of barriers to public awareness of waste. For example:

- only around half of households with a kerbside collection scheme are aware that this is available to them;
- one in three do not feel informed about which materials can and cannot be recycled;
- two in five do not know where to recycle locally;
- two in three do not feel informed enough about incineration as an option; and
- there are particular information barriers regarding composting (i.e. how to compost).

Public acceptance of personal responsibility for waste varies considerably across MORI's research. What is clear is that where the public perceives other parties to be inactive in promoting recycling (the Government, manufacturers, retailers etc.) they tend to lay the blame elsewhere.⁵⁰

4.18 There are many waste 'myths' (see Box 6). For example, the vast majority of households think they pay more for waste management than is actually the case. The majority of people believe

that around £200 per year of Council Tax is spent on waste management and almost a third think they pay over £260.⁵¹ The reality – as noted above – is closer to £50 per household per year.

Box 6: Common waste 'myths'... and what the MORI research revealed about the issue⁵²

Myth: The majority of people in the UK recycle their waste...

Reality: 85% of the UK population say that they recycle waste⁵³ – if 85% of people did recycle everything that it is currently possible to recycle on a regular basis – and sufficient markets were found – this would translate into a national recycling rate of 45%. It is 12%.

⁴⁷ MORI research for SU op cit. 7% awareness without prompting. However, when prompted, this figure rose to 34%

⁴⁸ ENCAMS quantitative national study involving 1,000 respondents. 20% of respondents were put off from recycling because they wanted a tidy home; 23% felt that councils and retailers ought to be doing more to recycle; 14% said they were too busy to recycle. The report concluded that a convenient doorstep recycling collection service taking into account residents' needs was crucial. ENCAMS *Waste Segmentation Report*, (November 2002) is available at www.encams.org

⁴⁹ MORI quantitative research compiled for the SU, including *Recycling and packaging from the domestic waste stream* (MORI 1999), *Waste management in Leicestershire*, (MORI 2002) together with original focus group research

⁵⁰ MORI focus group in Kettering, (September 2002)

⁵¹ Waste Watch 1999 *What people think about waste* and MORI survey for the Environmental Services Association quoted in ESA's *Resource Management and Recovery* fortnightly magazine, (issue 6, 6 September 2002). See also MORI qualitative research for the SU, September 2002 op cit

⁵² MORI *Public Attitudes Towards Recycling and Waste Management* Research for the SU op cit

⁵³ Waste Watch 1999 *What people think about waste*



Box 6: Common waste ‘myths’... and what the MORI research revealed about the issue (continued)

MORI survey evidence: The public perceives a strong and positive association between recycling and the environment. However, to the majority of the public, environmental motivations are not sufficient alone to encourage them to recycle on a regular, rather than ad-hoc basis. Rather, regular participation in recycling is conditional upon other factors – notably convenience and time. In particular, demand for kerbside collection services is high; three in four people said they would recycle more if this was available to them. Education and awareness campaigns are also key; two in five people said they did not know where to go to recycle locally, and one in three did not fully understand which materials could and could not be recycled.

Myth: Doing ‘my little bit’ won’t make a difference...

Reality: Yes it will. If all the aluminium drinks cans sold in the UK were recycled there would be 14 million fewer dustbins of waste each year.⁵⁴ Every tonne of glass recycled saves more than a tonne of raw materials.⁵⁵ That means less quarrying, less damage to the countryside, less pollution and global warming, and more energy savings. Switching from plastic to reusable glass bottles, recycling newspapers, choosing products containing recyclable materials, reusing carrier bags, and composting garden cuttings can directly benefit the environment and reduce cost increases due to waste growth.

The Flintham Ecoteam programme

Households from the Nottinghamshire village of Flintham took part in a seven-month pilot project aimed at reducing the impact of daily life on the environment. Householders were supported by the local council and the green charity, Global Action Plan. One family who participated in the scheme, the Claytons said: “Before we started the programme, we’d fill nearly three large bin bags a week...now we’ve managed to bring that down to just one.” With the help of a coach, the Claytons now recycle all their plastics, cardboard, paper and glass, as well as composting their organic waste. And to reduce their amount of packaging, they buy loose fruit and vegetables rather than pre-packaged. The Flintham figures are still being analysed, but the experience of similar programmes suggests that, on average, each household can reduce its rubbish by 50%.

The Guardian, 4 September 2002

MORI survey evidence: The concept of ‘fairness’ is very important to the public i.e. there is a demand for a collective public response led by action from all stakeholders, particularly the Government, local authorities and manufacturers. While the disposal of the UK’s waste was not an issue at the forefront of people’s minds, when prompted the public did make the links between waste and global issues such as climate change, and local issues, including street cleaning, litter and the wider ‘liveability’ of the local area.

Myth: Incineration is a waste management option which is wholly unacceptable to the public...

Reality: Incineration is undoubtedly a contentious option, and amongst some sections of the population it provokes an instinctive negative reaction because of associations with health risks, and polluting emissions.

⁵⁴ UK Aluminium Packaging Recycling Organisation (Alupro). Website: www.alupro.org.uk

⁵⁵ DETR *Every little bit helps*



Box 6: Common waste 'myths'... and what the MORI research revealed about the issue (continued)

MORI survey evidence: Awareness of incineration as a waste management option is very low. Although contentious, there does not appear to be any absolute rejection of incineration. Rather, acceptance tends to be conditional upon several requirements, including:

- incineration being part of a recycling-led strategy where everything that can be recycled has been recycled;
- certain materials are separated out and not incinerated (toxicity from certain plastics was a particular concern);
- operating guidelines for incinerators are strict and preferably under public control rather than managed by a private company; and
- the environmental benefits, such as energy recovery from incineration, are emphasised.

Myth: The public will never support variable household charging schemes...

Reality: The idea of charging people on the basis of how much unsorted rubbish they produce is a contentious issue. Initial reactions are often negative, because participants immediately associate the idea with 'paying extra' on top of their existing Council Tax. The public also foresees practical barriers, including disproportionate impacts on families, and concerns that increased fly-tipping will result. Yet a survey by the EA⁵⁶ showed that 60% were in favour if recycling facilities were in place.

MORI survey evidence: Local authority plans to pursue variable household charging must be sensitively and thoroughly explained to the public to gain their support. MORI found that in principle people were more accepting of variable household charging if certain assurances were given:

- there must be an opportunity to recycle voluntarily before charging is introduced (pointing to the importance of investment in facilities and infrastructure first);
- charging must be in accordance with the 'Polluter Pays Principle' i.e. dependent on how much unsorted rubbish is produced, with refunds given to reward those who recycle and compost and disincentives to those who do not;
- any revenue generated should be accountable and spent openly on related environmental issues within the local community;
- responsibility is not placed only on individuals – other stakeholders (such as manufacturers and supermarkets) should be subject to rewards and penalties for their own contribution and performance in relation to recycling and waste minimisation;
- public opinion also flagged the importance of providing a 'safety net' to protect disadvantaged people; addressing the specific needs of different dwelling types (e.g. flats) and tougher measures to discourage, and to penalise 'fly-tipping.'

⁵⁶ Test Research for the EA, *Household Waste Questionnaire – England & Wales*, (April 2002)



4.19 Concerns are regularly raised about the potential health effects of emissions from waste facilities of all kinds. It is true that all waste management options contain some degree of risk.⁵⁷ However, these risks are low and generally much lower than the public perceives, or that they find acceptable from other activities. The waste disposal and recycling industry is responsible for 4.3%, 0.32% and 5.2%⁵⁸ of emissions to air, water and sewers respectively. Other industrial activities therefore have a far greater impact than the waste disposal and recycling industry. These percentages would be lower still if other unregulated emissions to our atmosphere, such as car emissions, were included in the figures.

4.20 In the case of landfill, there is a small statistical link between landfills and birth defects.⁵⁹ However, cause and effect is not proven because of other elements in the environment (such as industrial pollution) which makes analysis of the issues complex. Incinerators also cause concern to the public, yet these are the most tightly regulated of industrial plant. UK municipal solid waste incinerators are estimated to release less than 1.5% of the total for any of the 35 pollutants in the National Atmospheric Emissions Inventory, and less than 0.5% for 27 of them. Dioxin emissions to the air from UK municipal solid waste incinerators are now estimated to be less than 1% of the UK total,⁶⁰ down 200 fold from those of 5 years ago.

4.21 The public is becoming more concerned about other waste management facilities where the potential risks are also very small. It is therefore important that local authorities have sufficient information on the relative health effects of different waste management options to help guide their choices.

4.22 Policies to reduce the production of waste and the hazardousness of waste, as well as the regulation of waste facilities, are the most effective ways of managing risks. These risks are regulated by the EA who can take action to ensure that risks are not unacceptable and are reduced and effectively managed.

There is insufficient data and research on waste streams

4.23 Data on specific waste streams, their growth rates, composition, life cycles and impacts is inadequate and yet is vital to underpin sound waste management. Currently data collection and publication is widespread but not very well co-ordinated:

- a municipal waste management survey (MWMS) – a comprehensive annual survey of local authorities in England and Wales is carried out by DEFRA;
- an industrial and commercial survey – last carried out in 1998/9 by the EA;
- construction and demolition data – gathered by ODPM;
- the Waste Collection and Disposal Statistics Survey – an annual survey prepared by the Chartered Institute of Public Finance and Accountancy (CIPFA); and
- the LTCS funds research data and collection but this is poorly co-ordinated and there is no systematic dissemination of the results.

Current research and data gaps include:

- more consistent data on the source and composition of waste;
- better data on what is spent on waste management and by whom;

⁵⁷ EUNOMIA Research and Consulting Ltd, Dr Dominic Hogg, *Health effects of waste management treatments* – work for SU

⁵⁸ Based on total 2000 aggregated releases. Source: McLanaghan Dr S. *Delivering the Landfill Directive: The role of new and emerging technologies* report for the SU (November 2002) available at www.strategy.gov.uk/2002/waste/downloads/technologies.pdf

⁵⁹ Elliott et al, *Health Outcomes in Populations Living Near Landfill Sites* British Medical Journal (August 2001)

⁶⁰ The Environment Agency, *Solid Residues from Municipal Waste Incinerators in England and Wales* (May 2002)



- time series data on the costs of dealing with waste;
- product specific information, for example to monitor the impact of producer responsibility directives (e.g. WEEE);⁶¹
- further development of life cycle analysis and assessment tools that can be used for policy;
- better understanding of the drivers of waste growth and compositional changes in waste streams;
- a good understanding of what determines household and other behaviour;
- systematic dissemination of the EA's data and research programme;
- co-ordination of research bodies undertaking research on waste; and
- the development of a central database to access key research and data.

⁶¹ Waste Electrical and Electronic Equipment

5. MOVING FORWARDS TO A NEW STRATEGY

Summary

Tackling the problem of rapidly growing volumes of household waste requires a clear vision setting out what needs to be achieved.

The vision of this report is that: by 2020, England should have a world class waste management system that allows it to prosper whilst minimising environmental impacts and protecting human health.

The practical implementation of this vision needs to be guided by a number of subsidiary aims and principles:

- growth in waste volumes should be de-coupled from growth in GDP;
- the costs of waste management and disposal should be fully internalised in the costs of all goods and services;
- responsibility for moving to a more sustainable path for waste management rests not only with central government but with local authorities, businesses, local communities and individual households. To succeed everyone needs to play their role; and
- the measures taken to advance future strategy should be soundly based in cost-benefit terms.

Action is needed in three main areas to deliver the vision:

- putting in place a robust long term economic and regulatory framework with significant increases in the landfill tax and new incentives for households to minimise waste and increase recycling;
- a package of short to medium term investment measures to facilitate the transition to a more sustainable waste management system including action to: reduce the rate of growth in waste volumes; boost recycling and its associated infrastructure; fund new waste management technologies; and



Summary (continued)

- funding for new waste infrastructure and reform of delivery structures to ensure investment is accompanied by improved and robust delivery structures.

Action in these areas should achieve:

- a 1% reduction by weight in the rate of waste growth by 2005/06;
- an increase in recycling rates for household waste to 45% by 2015 with the majority of households participating in kerbside collection schemes;
- 50% of households carrying out home composting by 2005/06; and
- a reduction in the amount of waste going to landfill from 2005/06.

By 2020 England should be enjoying the benefits of a more prosperous economy and a safer and cleaner environment

5.1 Chapter 3 set out the clear links between waste policy and its contribution to environmental goals. But achieving these benefits is not cost free. It involves investment, commitment and a change in behaviour and attitudes. There will be important trade-offs and choices to make about how much we are all prepared to pay and do to achieve the required changes.

5.2 Paying for the environment and better waste management does not mean that the wealth generating capacity of the economy has to be sacrificed. On the contrary, a less wasteful society is one that can create and use its wealth more sustainably. Waste itself can be a valuable resource – e.g. as a fuel source; as a replacement for raw materials; or to increase soil fertility. This is why the vision of this report is:

“To have, by 2020, a world class waste management system that allows the country to prosper whilst minimising environmental impacts and protecting human health.”

5.3 This vision puts waste firmly at the centre of the sustainable development objective for England and is consistent with the significant contribution that waste can make to that objective.

To get there the nation should aim to achieve three key goals that put reduction and recycling at the centre of its waste strategy

5.4 To make the vision meaningful, there needs to be practical goals to aim for. These are:

- the rate of growth in waste volumes should be decoupled from the rate of economic growth (i.e. so that waste growth is slower). This is a challenging goal that few countries have achieved⁶² but is critical to making real progress;

⁶² The Netherlands, Iceland and Germany have demonstrated some success in de-linking municipal waste generation from economic activity over time. Source: European Topic Centre on Waste

- the costs of waste management and disposal should be fully internalised in the costs of all goods and services; and
- the waste management options that secure the greatest environmental benefit should be pursued, provided they are soundly based in cost-benefit terms.

from waste by recycling it, composting or recovering energy (i.e. through incineration) and, finally, the option at the bottom of the hierarchy is to dispose of waste e.g. through landfill.

Figure 6: the waste hierarchy⁶³

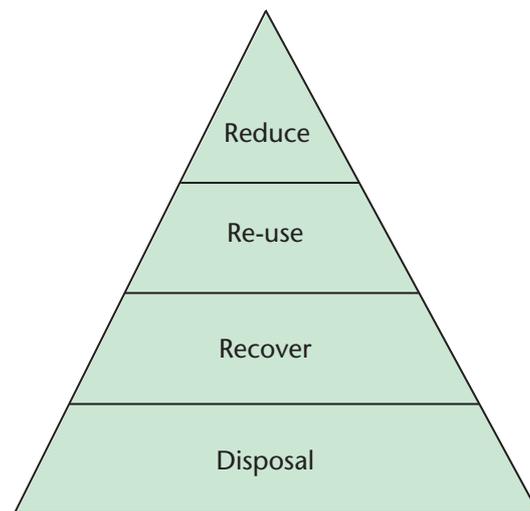
The achievement of these goals should be guided by sound principles

5.5 If these goals are to be achieved they will need to draw on a set of guiding principles. The three important ones for waste are:

- using the waste hierarchy as a guide to environmental benefits and applying the BPEO to make decisions;
- setting out a clear framework of roles and responsibilities; and
- keeping options open.

Using the waste hierarchy and the BPEO to achieve higher rates of waste reduction, re-use and recycling

5.6 The waste hierarchy is a useful framework that has become a cornerstone of sustainable waste management, setting out the order in which options for waste management should be considered based on environmental impact. Following the hierarchy (see Figure 6) the best option for the environment is to generate less waste. The second best option is to re-use products and materials, thirdly to recover value



5.7 The merits or otherwise of the waste hierarchy have been widely debated. The main criticisms are that:

- it is too simplistic a tool to use;⁶⁴ and
- it does not explicitly incorporate a cost-benefit dimension for reaching judgements about the preferred point within the hierarchy.

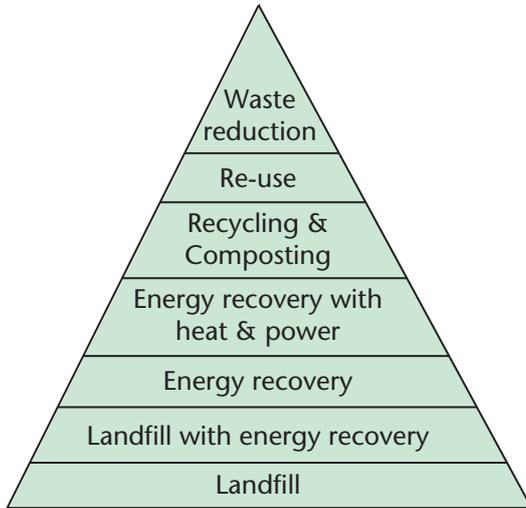
5.8 To answer the first of these, more sophisticated variants of the hierarchy, (as shown for example in Figure 7) have been developed which set out the range of waste management options more comprehensively.

⁶³ As set out in the EC Waste Framework Directive

⁶⁴ See for example, consultation responses to *A Way With Waste* op. cit



Figure 7: A more detailed version of the waste hierarchy

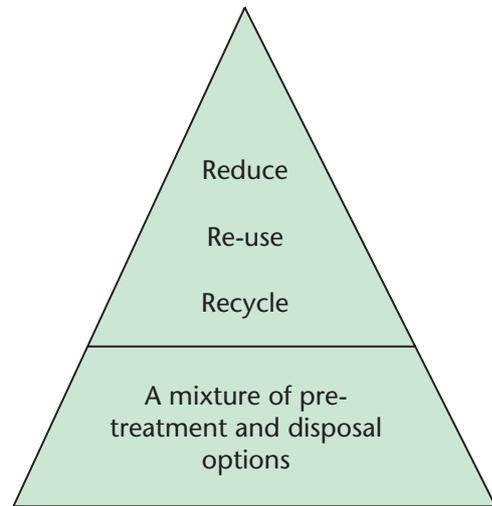


Source: in Murray R. *Creating Wealth from Waste* from work by Merrill Lynch

5.9 A third alternative is possible by combining the two versions in Figures 6 and 7 into Figure 8. This retains the principle of moving up the hierarchy to a reduction-re-use-recycling-led strategy but makes a clearer distinction between these options and disposal or pre-treatment options.⁶⁵ It is a clearer guide to non-waste experts and underpins the approach of the strategy set out later in this chapter and in detail in the remainder of the report, namely to aim for options in the top half of the hierarchy. It provides a helpful way of focusing on the main themes in this strategy – namely reducing, re-using and recycling waste. However, it should be stressed that it is not an accepted and legally

binding tool in the same way as the Waste Hierarchy in Figure 6 under the EC Waste Framework Directive.

Figure 8: SU version of the waste hierarchy



5.10 However, it is clear that whatever the specification of the waste hierarchy, it can only be a partial guide to decision making. It shows an ordering of the options and illustrates that each step up will generate an additional environmental benefit. To be of practical use it needs to be assessed against other criteria, including costs, to reach an acceptable point on the hierarchy. This is why the principle of the BPEO is used by waste management experts at local level together with the hierarchy (see Box 7).

5.11 There are cases where the BPEO for a type of waste may be some way down the hierarchy.

Box 7: Best Practicable Environmental Option (BPEO)

The Royal Commission on Environmental Pollution (12th Report) defined BPEO as

“for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable costs in the long term as well as in the short term.”

⁶⁵ This does not imply that pre-treatment or other disposal options have no value, nor that all the options within the lower half have the same environmental impact



For example, recycling may not be the BPEO if the costs of recovery or transport emissions associated with it are high compared to landfill.

5.12 For the remainder of this report the term 'residual waste' is used to describe waste from household sources containing materials that have not been separated and sent for reprocessing – i.e. the bottom half of the "SU waste hierarchy".

Clarity about the roles and responsibilities of different stakeholders is important

5.13 Everyone has a part to play in solving the problems associated with waste. The roles and responsibilities of the different stakeholders should therefore be clear. Box 8 sets these out.

Box 8: Roles and Responsibilities

Everyone should:

- seek to minimise their own waste;
- re-use, recycle and compost as much as they can;
- buy recycled goods.

central government needs to:

- take the lead in setting the strategic policy direction on waste management;
- put in place an appropriate economic and regulatory framework to underpin the strategy;
- ensure the key players are well informed about the strategy and its implications;
- contribute appropriately to local authority funding to make the necessary changes; and
- buy and specify products incorporating recyclates as part of its procurement policy.

local authorities need to:

- put in place local strategies for sustainable management of municipal waste;
- plan for and secure an appropriate range of facilities for the management of municipal waste within their area, including co-operation and joint planning with other local authorities and the private sector;
- allocate sufficient resources to waste;
- secure management of waste in line with the BPEO and their own local strategy; and
- provide ongoing education and practical advice for local people.



Box 8: Roles and Responsibilities (continued)

The waste industry needs to:

- provide an appropriate range of facilities to handle waste in line with government policy and regulatory requirements;
- take responsibility for the safe, long term operation and aftercare of waste facilities;
- mitigate, as far as it is practical, the impact of waste facilities on communities; and
- identify and pursue opportunities for developing new technologies/approaches.

manufacturers/processors need to:

- comply with statutory obligations to recycle or recover materials, for example under producer responsibility obligations;
- seek to recycle waste materials wherever their manufacturing processes allow it;
- pre-treat waste, where necessary, before disposal to reduce hazards and adverse environmental impact;
- comply with regulations and give their workforce the training to do so.

householders need to:

- minimise their own waste and encourage manufacturers to do so by refusing over packaged and wasteful products;
- source separate waste and use recycling facilities provided including bring sites;
- accept responsibility and ownership of their waste, including accepting waste management facilities where appropriate; and
- manage their own waste responsibly, including not littering.

NGOs and the community sector need to:

- work in partnership with local authorities and business to support local waste strategies;
- deliver recycling services to households targeting particularly hard to reach groups;
- help promote waste minimisation, re-use and recycling to householders.

The Environment Agency needs to:

- regulate waste facilities and the handling, transport, processing, treatment and disposal of waste in line with the BPEO;
- give advice to parties on the handling, transport, processing, treatment and disposal of waste and the operation of facilities; and
- give advice to planning authorities on the appropriateness of sites for waste facilities.



Managing future uncertainty by keeping existing options open whilst creating new ones

5.14 Recent data is not a reliable guide to future trends. There are economic, social and technological factors that will influence future waste growth rates, the composition of future waste streams, and the range of future options for waste management.⁶⁶ Any strategy needs to prepare for the future by keeping options open and encouraging new ones to be developed. It is important to avoid prematurely locking into costly and irreversible options. This applies equally to the reduce-re-use-recycle options at

the top of the waste hierarchy as well as to the residual waste options at the bottom.

There also needs to be a clear rationale for government intervention

5.15 The rationale for government intervention in the management and disposal of waste lies in a number of market failures, which mean that in the absence of government intervention, an economically efficient outcome would not be achieved. Box 9 gives more details.⁶⁷

Box 9: Market failures in waste

Externalities: for markets to work efficiently, prices need to reflect all the costs and benefits associated with the production and consumption of goods and services. However, in the case of waste, the prices of most goods and services do not reflect the adverse impact of managing and disposing of waste streams on the environment. This leads to more waste being produced and less investment in alternatives such as recycling than is economically efficient.

Missing markets: for example there are poorly developed markets for recyclates.

Imperfect information: efficient markets require good information. But consumers are typically not well informed about the different environmental impacts or health effects of managing waste arising from the products they buy.

Behaviour and attitudes: peoples' views on and understanding of waste are sometimes limited or mis-informed (as shown elsewhere in this report, for example in Box 5 (chapter 4) on the MORI results).

⁶⁶ See for example ESTO Project: *Decoupling Municipal Solid Waste* that describes the main uncertainties influencing household waste composition and growth in the next 20 years. These include: lifestyle of household members technological development e.g. IT replacing paper, and demographics e.g. the ageing population

⁶⁷ This is also discussed in more detail in *Tax and the environment: using economic instruments*, HMT, (November 2002)

Having set out the principles and the rationale for government intervention, what are the strategic choices that England faces?

5.16 The SU has conducted a detailed analysis of projected municipal waste arisings, waste management options and the associated expenditure. This was carried out with the help and advice of experts in the field⁶⁸ as well as assessing other models⁶⁹ and research.

5.17 This analysis sought to examine:

- the trade-offs involved in placing emphasis on different parts of the waste hierarchy; and
- the opportunities and constraints posed by different factors e.g. the composition of the waste stream and behavioural responses.

Four main options were analysed and compared with a 'status quo' base case. A description of the options is set out in Figure 9.

Figure 9: Description of strategies modelled

Strategy	Description ^a
Option 1: status quo	Current growth rates, continuation of landfill as predominant waste disposal option
Option 2: high incineration (i)	50%+ incineration and 25% recycling
Option 3: high incineration (ii)	50% incineration and 35% recycling
Option 4: maximum recycling	60% recycling and incineration at current levels (10%)
Option 5: reduction/recycle	Reduce rate of growth in waste, 45%+ recycling, 30% or less residual waste management comprising a combination of incineration & other technologies e.g. MBT ⁷⁰
a. percentages refer to outcomes in 2020	

A summary of the results of the analysis is shown in Figure 10.

⁶⁸ Several pieces of work were specially commissioned by the SU: McLanaghan Dr. S. *Delivering the Landfill Directive: The role of new and emerging technologies*, Parfitt Dr. J. *Analysis of household waste composition and factors driving waste increases*, Hummel Dr. J. *Projecting Collection Costs*, Tucker Professor P. and Speirs D. *Modelling Forecasts of Recycling Participation Rates and Material Capture Rates for Possible Future Recycling Scenarios*, Patel N. and Wheeler P. *Facilities Model*. The SU also convened a Data and Assumptions Panel to support the modelling work. More details of the data and assumptions used in the modelling work are given in Annex L

⁶⁹ Strategic Option Appraisal Tool designed by AEA Technology to facilitate the development of strategies for waste disposal at local authority level. It ranks options and their performance base on criteria such as economic, environmental, operational, technical or waste policy

⁷⁰ Mechanical Biological Treatment. A hybrid treatment that stabilises biodegradable content and mechanically recovers recyclate from residual waste. This is explained in more detail in Annex G



Figure 10: Benefits and costs of alternative strategic approaches, 2002-2020

Option	Costs (£bn) ^(a)	Feasibility as a way to meet the Landfill Directive	Environmental benefits	Flexibility (avoiding locking-in to one option)	Ranking
Option 5: reduction/recycle	29.6	✓✓✓	✓✓✓	✓✓✓	1
Option 3: high incineration (ii)	29.6	✓✓✓	✓✓	✓✓	2
Option 4: maximum recycling	31.0	✓	✓✓✓	✓✓	3
Option 2: high incineration (i)	28.9	✓✓	✓✓	✓	4
Option 1: status quo	27.4	✗	✗	✗	5
✓✓✓ offers maximum benefits ✓✓ offers some benefits ✓ offers few benefits ✗ offers no benefits					
Notes: (a) costs are waste management expenditure at local authority level from 2002 to 2020 and are discounted to reduce the value of projected future costs to their value as seen from the present day.					
Source: SU analysis					

5.18 Although the analysis suggests that ‘doing nothing’ is the cheapest option, it fails to meet any of the key criteria. The other options are more expensive – by between 5% and 13% – but have a mixture of advantages and disadvantages. The extremes of adopting either high incineration or high recycling as a strategy are judged to be less flexible. ‘Maximum recycling’, although it scores highly in terms of environmental benefits, would require a huge change in culture and behaviour which was judged to be less feasible in policy terms than pursuing a range of options, and still left a significant residual. Reduction in waste growth rates reduced costs and the number of facilities required by all the options.

The SU reduction and recycling option has considerable advantages...

5.19 Different experts and members of the waste industry will have their own views, but looking across the whole waste system and its operation in England, the SU approach was judged to meet all the criteria and was not significantly (around 10%) more expensive than ‘doing nothing’.

5.20 The benefits would be:

- although the focus is on reduction and recycling, it avoids locking in prematurely to any one method of reducing waste volumes or of disposing of waste. Indeed it aims to increase the options available. This keeps



options open and reduces future risks of inflexibility in the face of changing legislation, technology, or other factors;

- it increases reduction, re-use and recycling and thus moves England up the waste hierarchy;
- it reduces the level of incineration and the number of costly waste facilities required; and
- once landfill taxes rise, it should lever in significant private sector funding and investment.

...but also some risks and tough choices

5.21 The main risk is that:

- reducing the waste growth rate by 1% is challenging and ambitious.

5.22 The tough choices are:

- what we are prepared to pay and prepared to do;
- changing the behaviour of households will not be easy. Many say they want to recycle and want a convenient doorstep collection, but only some are willing to pay for these new and better services. Many feel they pay too much already but overestimate what they pay by 4-5 times the actual amount;
- recycling will be an expensive option until markets for recycled goods are further developed creating economies of scale; and

- planning and other delays may make it difficult to get the collection infrastructure and the required number of waste management facilities in place. Most householders say they do not want landfill or incinerators (even though in reality 80% of the UK public live within 2km of a landfill, open or closed). People say they do not want landfill but are concerned about the risks from incineration (even though the perception of the risk is massively higher than the reality – about the same likelihood as the risk of death from a lightning strike);⁷¹

5.23 Whilst the Government has a role in creating the right economic conditions, outlining national aspirations and providing funding for local authorities for a more sustainable strategy, the reality is that many of the choices will ultimately fall to local authorities and households. Waste is not always a high priority compared to many other areas of local government e.g. education and social services.

5.24 In short everyone seems to want a better environment and appear willing to recycle more but few want to pay the additional cost for a better service.

5.25 If we are to shift waste management onto a more sustainable footing – and the benefits of doing this are clear – then there needs to be additional funding, more choices for local authorities, a better informed public who are more involved in local strategies, and a willingness to make relatively small changes in lifestyle.

The recommended strategy

5.26 The recommended strategy has three strands as set out in Box 10.

⁷¹ Envirospire, SU working paper *The Context for Emissions and Health Impact Associated with Waste Management*, (2002) www.strategy.gov.uk/2002/waste/downloads/enviros.pdf



Box 10: The SU recommended strategy

For the medium to long term, a strengthening of the economic and regulatory framework

- to send clear signals about the direction of change; and
- to secure the desired change in behaviour along the production-consumption chain.

This would be achieved through a series of measures including: substantive increases in landfill tax and new incentives on households to reduce waste and increase recycling by local authorities that wish to take this forward.

For the short to medium term, a package of investment measures to put waste management on a more sustainable path. This would include measures to:

- increase waste minimisation;
- boost recycling;
- develop new technologies; and
- improve information/data/the research base.

To support and deliver the strategy, these need to be backed up by effective delivery structures. This requires:

- clarity at the centre of government about the direction and focus of waste policy;
- a better link between policy and delivery on the ground;
- funding for new waste infrastructure to deliver the SU strategy; and
- the right skills and delivery structures at all levels to achieve change.

This strategy builds on the Waste Strategy 2000 and moves it forward in a number of important respects

5.27 The proposed strategy reinforces the current Waste Strategy 2000, and adds to it by:

- putting waste reduction and recycling at the centre of the strategy as desirable and achievable goals;
- recognising that disposal and pre-treatment of waste will remain part of waste management for the foreseeable future;

- not specifying particular options from the centre but setting out the general direction that aims to realise the vision;
- setting out the policy instruments and delivery tools to make the change happen; and
- setting tougher and more challenging goals.

Clear and explicit measures are needed to judge its success

5.28 Success will have been achieved when the goals set out above have been realised. In terms of intermediate indicators of success, those that are key are:



- reducing the rate of household waste growth to 2% per annum by the end of 2006 and in the longer term decoupling waste growth from GDP;
- 50% of households to be carrying out home composting by 2006;
- the roll out of kerbside recycling collections across England focusing on organics first;
- a target of at least 35% of household waste to be recycled or composted by 2010 and at least 45% of household waste to be recycled or composted nationally by 2015;
- an absolute reduction in the amount of municipal waste going to landfill annually from 2007; and
- 30% of collection authorities to have tried incentive based schemes to encourage sound management of household waste by 2005/6.

5.29 Boxes 11, 12 and 13 set out how waste management in England in 2015 may change depending on the progress made in implementing the strategy set out in this report.



Kerbside recycling boxes – photo courtesy of Stockton-on-Tees Borough Council

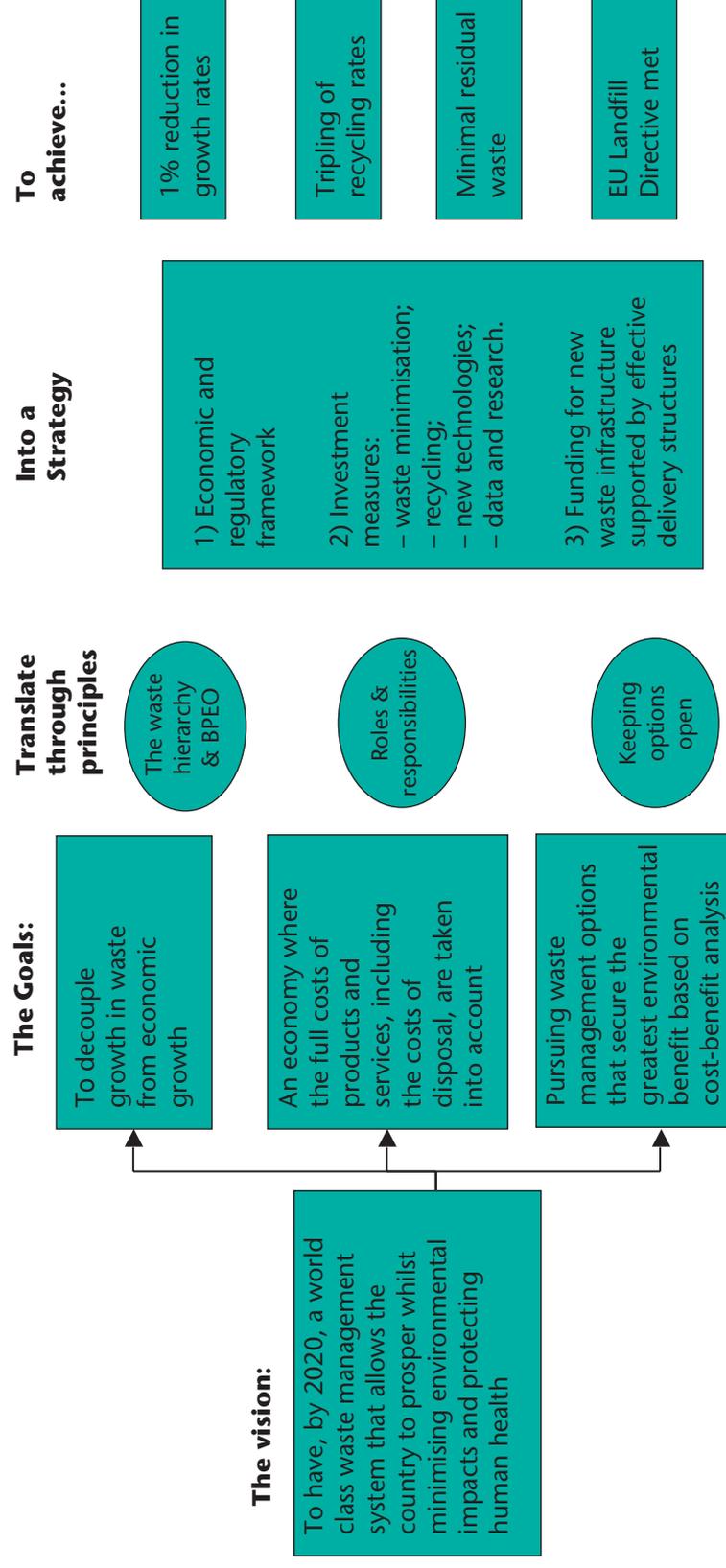
In summary

5.30 Figure 11 summarises the links between the vision, high level goals, strategy and outcomes. The following chapters set out in more detail the proposals to strengthen the economic and regulatory framework (chapter 6); to invest in measures to put the country on to a more sustainable path for managing its waste (chapter 7); and to enhance funding and delivery structures (chapter 8).



A kerbside recycling collection scheme in operation – photo courtesy of David Mansell, Avon Friends of the Earth.

Figure 11: Summary of the vision, high level goals and strategy underlining this report





Box 11: Scenario 1 – Do nothing – how England might look in 2015

- waste growth has continued unabated and waste costs have increased by 70%;
- the number of landfill sites has increased by over 100 from 2002; there have been widespread protests about the shipping of waste from areas where there is little landfill available like the South East to the north of the country;
- England's household recycling rate has continued to rise at only 1% per year and is just under 25% – the target originally set in 1990 for the year 2000. Other EU nations such as Holland and Germany have recycling rates around 60%;
- England has failed to meet the Landfill Directive in both 2010 and 2013 and the UK is currently suffering its fourth year of EU fines. These fines now come to just over £700 million. EU nations who have adopted sustainable waste management are losing patience with the UK;
- attempts to meet the 2020 Landfill Directive by a massive increase in incineration are meeting with resistance in some areas;
- England's reliance on landfill is causing problems for wider waste management as new EU regulations influenced by nations with lower waste growth, higher recycling and more advanced waste management options, hit the country harder;
- industry too has been suffering under tighter waste regulation. Failure to invest in lean manufacturing and alternative waste management methods has undermined productivity and is now requiring a large programme of costly investment to meet new EU regulations;
- a MORI Poll shows that most people see waste as a government problem and say that recycling is too difficult due to lack of investment in new recycling facilities. Discussion of the options has not taken place, awareness remains low, and NIMBYism⁷² has increased;
- England now faces a larger and more costly challenge to try and catch up with nations whose waste management is now 20-30 years in front of that of England; and
- the UK remains at the bottom of the European waste management league.

⁷² NIMBY= Not in My Backyard. An increasingly common way of expressing people's growing reluctance to having certain structures in their neighbourhoods



Box 12: Scenario 2 – the SU trajectory – how England might look in 2015

- refocusing existing funding along with new resources in 2003, plus an increase in landfill tax to £35 a tonne, has stimulated a clear transformation in UK waste management;
- initiatives to help households reduce waste have paid dividends. Over 50% of UK households now compost at home. Waste growth dropped to 2% from 3% in 2006. It is now in line with GDP as in many other nations, and in the last 2 years has dipped slightly below that. This has reduced costs and the need for additional facilities;
- it has also helped industry who, with advice from Envirowise and having made investment in changes, are now making substantial savings on raw materials and waste costs;
- every home now has kerbside recycling for organic waste and key dry recyclables. Recycling has reached 45% in England putting the UK above average EU performance;
- areas with incentives to reduce waste and recycle are doing even better and around 60% of authorities use this approach;
- the new waste resource authorities introduced gradually from 2007, have changed the emphasis from waste disposal to resource management. They are paid based on their success in waste reduction, recycling and reducing residual waste;
- LAs are working together, with industry and community groups to produce more effective solutions to waste management;
- stimulation of the uptake of more existing and new technologies has provided a wider range of options to manage waste. A wider range of waste treatment methods are being used for handling residual waste: mechanical biological treatment, digestion, gasification and pyrolysis are being used along with a much smaller increase in incineration than was thought necessary to reduce the active waste going to landfill in 2002;
- industry and households are now much more aware of waste and the environment. New markets for recycled goods have developed and participation in recycling continues to grow. This holds out the prospect of recycling rates reaching around 50% by 2020;
- the Landfill Directive targets for 2010 and 2013 were met.



Box 13: Scenario 3 – Doing even better – how England might look in 2015

The SU strategy, which seemed ambitious in 2002, is now seen as setting the right direction and progress exceeded expectations:

- initiatives to help households reduce waste have paid dividends. Over 60% of UK homes now compost at home. UK waste growth is now 0.5% lower than the growth in GDP at 1.5%. The UK is one of an exclusive club of nations who have managed to achieve this decoupling of waste growth from GDP (including Germany and the Netherlands). This has saved costs and the need for additional facilities;
- the majority of local authorities have chosen to take up the option of incentive based schemes for household waste that suit their needs, where those who produce less waste and recycle more pay less. The principal that ‘the polluter pays’ is now universally accepted;
- everyone now participates effectively in kerbside recycling, suggesting that investment in education and information has paid dividends;
- recycling rates in England are over 50% and could reach 60% by 2020;
- the market for recycled and environmentally friendly goods is well established with people demonstrating their willingness to pay a little extra for goods that are better for the environment and produce less waste;
- great leaps forward have been made in tackling wider wastes as well as municipal waste. Producer responsibility via regulation and voluntary agreement has brought about a significant reduction of waste and an increase in the recycling of materials. This has saved many companies money;
- those industries who pioneered eco-design to produce such goods are making significant returns. As products that are less wasteful or easier to recycle become more prevalent, the reductions in waste growth are maintained and recycling increases;
- the Landfill Directive targets for 2020 are met early without the 4-year derogations envisaged in the SU strategy;
- “green procurement” is widespread throughout the public sector and targets have been exceeded.

6. ECONOMIC AND REGULATORY FRAMEWORK

Summary

Giving clear signals within the right economic and regulatory framework is crucial to securing a long-term and sustainable change in waste management.

Action is needed in the following five areas to put the right long term economic and regulatory framework in place:

- greater incentives to *reduce* the rate of growth in waste volumes. This requires mechanisms that reward households for producing less waste and recycling more; encouragement of voluntary producer responsibility obligations to produce less waste; and greater support for eco-friendly design;
- new measures to encourage *re-use*, such as deposit-refund schemes and designing civic amenity sites for re-use;
- the promotion of more *recycling* through support for the expansion of markets in recyclates; reviewing the use of BSI Standards to facilitate the use of recycled materials; and more proactive green procurement by central and local government;
- encouragement of *composting*; and
- greater incentives to move away from *landfill* including a substantial increase in the landfill tax and more rigorously enforced fines for fly-tipping and other waste crimes.



Reform of the economic and regulatory framework is crucial to realising the vision

6.1 This chapter sets out a comprehensive package of measures for strengthening the economic and regulatory framework required to put the waste management system on to a sustainable path. These measures address five objectives:

- reducing the rate of growth in waste volumes;
- encouraging the re-use of goods;
- increasing recycling;
- promoting more composting; and
- reducing the volume of waste sent to landfill sites.

Reducing the rate of growth in waste volumes

6.2 There are three main options:

- (a) more incentives and rewards for households to reduce the volume of waste they produce;
- (b) strengthening producer responsibility obligations; and
- (c) greater incentives for eco-friendly design.

Option (a): more incentives and rewards for households to produce less waste, re-use goods and recycle more

6.3 Incentives for households could take a number of forms:

- discounts on current charges i.e. Council Tax;
- cash incentives and reward schemes;
- a mixture of free services and some charges for special services; and
- freedom for local authorities to introduce various forms of direct and variable charging.

6.4 Some of these already exist as pilots and trials as described in Boxes 14 and 15.

6.5 Variable charging – in its broadest sense, charging households according to the volume of waste they produce – is well established in many other industrialised countries. Direct or variable charging schemes are used successfully in over 17 other nations around the world⁷³ and have been in use in parts of the USA for over 80 years (see Box 16).

⁷³ USA, Canada, Australia, New Zealand, Austria, Belgium, Denmark, parts of France, Germany, Italy, Luxembourg, Sweden and Switzerland. It is also likely to be introduced in Finland, Spain and Ireland very soon



Box 14: An example of a successful variable charging scheme in the UK

A variable charging scheme for household waste collection was introduced twelve months ago by **Blaby District Council in Leicestershire**. This has reportedly increased the volume of recycled waste by 50% and significantly reduced the amount of waste sent to landfill sites.

Until last year, Blaby residents left their rubbish in black bags, with some households also provided with a container for recyclable materials. Under the new scheme, introduced across the district during 2001, households have been given a 140-litre wheeled bin – compared to the usual 240-litre bin – for their refuse. They also receive, on request, a green-lidded 140-litre bin for recyclable materials. Garden waste is only collected in special pre-paid sacks or special rented bins, but the council hopes to introduce a third bin for garden waste shortly.

Recyclable materials are collected fortnightly. Some 60% of households can recycle paper, plastic bottles and cans, and the remainder can recycle mixed paper and cardboard. If the refuse bin is filled before the end of the week, householders can buy refuse sacks from the council or have their refuse bin replaced with a larger one for an annual rental fee. Households with five or more people qualify for a discount on the fee.

Of the 37,750 properties served, just 7% are renting a larger bin or buying more refuse sacks. With no reports of increased dumping of household waste, this suggests that most householders have reduced the amount of mixed refuse they throw away.

The amount of recyclables collected by the kerbside scheme rose by 55% after the scheme was introduced across the district.

Source: ENDS Report 332, September 2002

Box 15: An example of incentives to encourage recycling

Recycling Incentive Trials in Brent and Lambeth

Two pilot studies were carried out over a six-month period between June and December 2001 to investigate the impact of offering cash incentives for participation in kerbside recycling schemes and for the amount of household waste put out for recycling. The pilots took place in Sudbury, Brent and Tulse Hill, Lambeth.

In Sudbury 1,240 household properties on an existing weekly multi-material kerbside collection round, including paper, glass, cans and textiles, were given a bar-coded collection box with information about the scheme at the start of the trial. The bar-codes were scanned by the collection officer using a hand held device each time the box was put out for recycling. Households were offered a £10 cash incentive if they put out the recycled box for collection at least half of the time over the six-month trial period.



Box 15: An example of incentives to encourage recycling (continued)

Participation in kerbside recycling rose from 35% to 41%. The tonnage of recycling collected each week rose during the trial by 34% in comparison to the same time period preceding the trial. 22% of properties qualified for the £10 payment for participating at least half of the time.

In Tulse Hill, 887 households on a high-density housing estate were offered a £10 cash incentive for recycling at least half of the time over a six-month period. Residents were given a booklet of slips that they posted in a special box each time they used the recycling bins located on the estate. The slips, along with the glass, paper and can banks, were collected weekly. The participation rate for the Tulse Hill trial was 13%. A total of 1,872 valid slips were returned over the six-month trial, equating to 8.1% of possible usage. The average weight of material collected over the trial was 475 kilograms, an increase of 27%. Some 11% of households qualified for the £10 incentive.

Source: The Mayor of London's Draft Municipal Waste Management Strategy, 4D.21

6.6 A key element of these direct or variable charging schemes is that the waste management element of Council Tax is **replaced** by a charge related to the amount or weight of **unsorted** waste in order to finance recycling services. It does **not** involve people being charged twice to have their waste collected and disposed of. On the contrary, it creates incentives to compost or recycle in order to **lower** the charge. The scheme is therefore an incentive-based one where people who compost and recycle **pay less**.

6.7 There are a number of issues that local authorities would have to consider if they chose to implement such a system:

- *there could be an increase in fly-tipping* – so far this has not happened to any significant extent in any of the 17 countries with variable charging schemes, and in the few cases where it has occurred, the effect has been temporary;

- *it could penalise low-income families if poorly designed and implemented*. Low-income families already get Council Tax rebates and similar rebates could be applied under variable charging. In many countries with variable charging schemes, disadvantaged people receive a free allowance, for example in the form of free bags or stickers for bags to exempt them from charges; and
- *it can be complex or costly to administer*. There are a variety of possible schemes and some are very simple and inexpensive.



Box 16: Case study – US experience with variable charging

- significant reductions in waste disposal at landfills in the year following adoption of variable charging with an average reduction of 40% with a high of 74% and a low of 17%;
- variable charging programmes accompanied by aggressive recycling had larger average decreases in tonnages landfilled than programmes with “average” recycling;
- in the 12 cities that adopted a recycling programme prior to adopting variable charging, major increases in recycling occurred causing increases of 63% to 141% in 4 cases;
- with few exceptions, city officials all reported no noticeable increases in littering, and said that illegal dumping was not a problem; and
- there was evidence that individuals were undertaking significant source reduction activities i.e. trying to minimise the waste they produced.

Source: Research by DEFRA for Waste Strategy 2000

6.8 Implementation of direct or variable charging schemes in other countries has worked best where:

- composting and recycling infrastructure is in place;
- means for mitigating impacts for those on low incomes are in place;
- the public have full information about the system and access to help and advice if they need it; and
- there are significant fines for fly-tipping and other waste crimes.

Box 17: Measures to tackle fly-tipping

Fly-tipping – the illegal dumping of rubbish – poses a significant problem for a number of local authorities. Not only is fly-tipping anti-social and unsightly, it also poses a threat to the environment, wildlife and to public health and safety. Fly-tipping can be aggravated by poor waste collection services, a lack of proper disposal facilities (or short opening hours at civic amenity sites), or high charging for bulky refuse collection/trade waste. Many local authorities have started to crackdown on fly-tipping hot spots. This is done in co-operation with the police, local businesses and residents, testing methods such as the use of hidden cameras.

Local authorities including Manchester City Council have been tackling the blight of fly-tipping through a poster campaign, designed to make the public more aware of the anti-social nature of dumping rubbish. The Council’s Operational Services Department also advertises a free collection service for most bulky goods from people’s doors. And the London Borough of Barnet offers ‘free skip weekends’ advertised through the local press. The skips are rotated around different areas of the borough, offering residents a convenient way of disposing of bulky items. A number of authorities also provide a public help-line for people concerned about fly-tipping or wanting to report a particular incident. SEPA (the Scottish Environment Protection Agency) run a 24-hour freephone pollution hotline to report waste crimes.

Box 17: Measures to tackle fly-tipping (continued)

Further measures to tackle fly-tipping are being considered by central government. A recently published DEFRA consultation document “Powers and Responsibilities in Public Spaces and Local Environments: Options for Reforming the Legislative Framework” set out several options for dealing with fly-tipping, including:

- extending investigative powers for fly-tipping to local authorities. The main enforcement body at present is the EA, and it may be that local authorities are better placed to deal with local fly-tipping offences, including minor incidents;
- introducing more robust powers for clearing fly-tipped waste from private land, with the option of reclaiming costs for the clean-up; and
- extending the ‘duty of care’ to householders to require them to account for the safe and proper disposal of their waste in much the same way as businesses. Specific guidance would be issued to householders covering what they could and could not put into weekly household waste for collection and what would require specialist arrangements. Fixed penalty notices could be enforced for non-compliance.

The above options all have pros and cons, and are open to full consultation with stakeholders. The results of the consultation exercise, where relevant to this report, should be taken forward in line with the SU’s Implementation Plan set out in Chapter 9.

6.9 Since local authorities face different circumstances and are at different stages of progress, implementation of any form of incentive scheme – including variable charging – should be a matter of local discretion. It would not make sense to introduce a uniform national charging scheme in all areas. Local authorities will be best placed to judge the right time to introduce an incentive scheme in the right form for their local area. But, in order to facilitate this, the Government should secure an early legislative opportunity to grant local authorities powers to implement incentive and charging schemes for waste if they want to do so.

Recommendation 1:

Local authorities that wish to take forward household incentive schemes to help reduce waste volumes and increase recycling should be allowed to do so.

6.10 Local authorities would need to consider the following to ensure a successful incentive-based scheme:

- the case for piloting the scheme and its likely impact before full roll out;
- the arrangements for helping households on low incomes and the specific needs of households in particular dwellings e.g. flats;
- the adequacy of recycling, composting and other facilities; and
- the adequacy of measures to deal with fly-tipping – if it occurs.

Option (b): producer responsibility obligations

6.11 Producer responsibility is an alternative to taxation or traditional regulation. It aims to move towards a lifecycle approach by making



the producer bear at least some of the costs of their products in and after use. Well-designed schemes give producers incentives to design products that minimise waste, or that can be re-used or recycled. Producer responsibility has been taken forward largely at European level, with voluntary agreements used at national level in the UK.

6.12 Currently, there are producer responsibility obligations for packaging, junk mail and newsprint. The packaging (which is regulatory

following implementation of the EC Directive on Packaging and Packaging Waste) and junk mail (voluntary) schemes require certain levels of recycling to be achieved by the producers. The voluntary agreement on newsprint sets target levels for the recycled content of newsprint.

6.13 While such schemes do place some extra costs on business, these appear to be small. Estimates of the compliance costs of the packaging regulations, for example, range from 0.18% of profit (large firms) to 2.2% (SMEs).⁷⁴

Box 18: The UK Producer Responsibility Obligations (Packaging Waste) Regulations

The regulations place three main obligations on businesses (i.e. the 'producers') each year:

- to register with the EA, pay a fee and provide data on the packaging handled by the business in the previous year ('the registration obligation');
- to recover and recycle specified tonnages of packaging waste ('the recovery and recycling obligations'); and
- to certify whether the recovery and recycling obligations have been complied with ('the certifying obligation')*.

In addition, retailers have a 'consumer information obligation' to inform consumers about various recycling issues.

Businesses handling 50 tonnes or less of packaging each year, and with turnover of £2million or less, are exempt from the regulations. A business may comply themselves, or join a registered compliance scheme, which will discharge the producer responsibility obligations for it.

In 1997 the UK recovered some 30% and recycled around 27% of packaging waste. By the end of 2001, some 48% was recovered and 42% recycled.

The Environment Council reached political agreement on a Common Position in October 2002, which envisages a minimum overall 60% recovery target, and an overall recycling target of between 55% and 80% by 2008. In addition, there are material-specific recycling targets of: glass 60%, paper 60%, metals 50%, plastic 22.5% and wood 15%. The European Parliament have yet to have their second reading but the review of the Directive is expected to conclude in 2003.

⁷⁴ Packaging Waste Regulatory Impact Assessment



Box 18: The UK Producer Responsibility Obligations (Packaging Waste) Regulations (continued)

These higher targets suggest that packaging recovery from the municipal waste stream will become increasingly important. This underlines the need for segregation and sorting systems and infrastructure as well as co-operation at local level.

**The evidence takes the form of Packaging Recovery Notes (PRNs). Obligated parties that do not have access to their own sources of recycled materials can either buy them from the processors or sign contracts with collectors of recyclable material. PRNs therefore have a price. If there is a shortage of a particular material in relation to the target, then the price of PRNs should rise and increase supply (and vice versa).*

6.14 Producer responsibility is likely to provide the clearest incentives for innovation and improvement when responsibility is related to producers' own products and where action is introduced over a sufficiently long time scale to enable producers to change their products. There is, however, a balance to be struck between linking responsibility to producers' own products and the most cost-effective ways of achieving particular targets. The best approach for some products may not work for others.

6.15 Voluntary agreements have the benefit of working with the relevant industry and avoiding the need for taxation or the burden of regulation. They can challenge industry to devise its own solutions to tackle environmental problems efficiently.⁷⁵

Recommendation 2:
DEFRA and DTI should extend voluntary agreements with industry to reduce waste and increase the use of recycled materials and the recyclability of products.

Box 19: Junk mail

For some people direct or 'junk' mail serves a useful purpose, and it is an important communication method for many companies, small businesses and charities. As such it contributes to national economic performance. However, many households dislike unsolicited mail. A proportion of junk mail ends up as household waste for disposal or as litter. Though junk mail represents only a very small proportion of the municipal waste stream, it still poses environmental problems, such as the loss of virgin forest to create the glossy paper often used.

Some measures to tackle junk mail are already underway. For example, DEFRA has negotiated a new voluntary producer responsibility scheme for the recycling of direct mail and promotions material with the Direct Marketing Association (DMA) – the body representing most producers of junk mail. This initiative aims to increase the recycling of junk mail, minimise the quantity of junk mail sent to landfill, improve the targeting of its distribution, and reduce the use of contaminants in mailshots (e.g. glue). A Good Practice Guide for producers will also be published.

Members of the public can contact the Mailing Preference Service⁷⁶ if they wish to have their names and home addresses removed from direct mailing lists. Some local authorities and/or local voluntary groups also distribute "no junk mail" stickers to households and produce hints and tips on reducing junk mail.⁷⁷

⁷⁵ Experience of voluntary agreements should help in identifying suitable candidates for further agreements and identifying successful factors in implementation. Existing evidence shows that adding voluntary agreements to a policy mix of traditional command and control instruments can improve the flexibility and cost-effectiveness of the policies as well as reducing administration. OECD *Voluntary Approaches for Environmental Policy*, an assessment (1999)

⁷⁶ Mailing Preference Service, DMA House, 70 Margaret Street, London W1W 8SS, telephone 020 7291 3310, web site www.mpsonline.org.uk

⁷⁷ For example, advising households that when dealing with their credit card company, donating money, or ordering a product or service they should mark their account with the words "please do not pass or sell my name and address to any other company."



Option (c): stimulating eco-friendly design

6.16 There is currently relatively little incentive for consumers to demand products which are designed to minimise waste over the life of the product. Stronger incentives for households to reduce waste would have some impact. However, there may also be a case for providing financial incentives to manufacturers to test new designs. Some pioneering industries have already started to develop new products based on eco-design (e.g. refillable packages for household cleaning products and toothbrushes with changeable heads). Industry has voluntarily pushed eco-design objectives (e.g. “product stewardship” by the chemicals industry and “eco-design” by Phillips).⁷⁸

6.17 The Advisory Committee on Consumer Products and the Environment (ACCPE) is already considering the role of eco-design and integrated products design through a series of recommendations to government.⁷⁹

Encouraging the re-use of goods

6.18 Re-use means the multiple use of a product in its original form. Excluding exchanges within families and the turnover of charity shops, the market for second-hand goods in the UK totals an estimated £3 billion a year.⁸⁰

6.19 To date there have been few incentives for re-use in the UK, and the packaging regulations exclude re-used materials. In other countries, there are a variety of incentives for re-use including, for example, taxes on single-use items such as batteries and the recently implemented plastic bag tax in Ireland. The

plastic bag tax has been a successful measure in terms of raising awareness and reducing litter. Plastic bags are, however, a very small part of the municipal waste stream (substantially less than 1%).

6.20 Deposit refund schemes are another approach. Such schemes use an up front charge (deposit) combined with a refund payable when the waste product is returned to encourage re-use (or recycling). They can have significant impacts on return rates, litter and waste management costs and are suitable for products that cause particular disposal problems. Applications in other countries have included beer bottles, hazardous wastes, batteries and light bulbs.⁸¹

Recommendation 3:

DEFRA and WRAP should consider the options for increasing incentives for the re-use of goods. More work is needed to assess the preferred means for different products and to establish where the impact on the waste stream would be greatest.

Increasing recycling

6.21 There are five main options for increasing the volume of waste that is recycled:

- (a) developing markets for recycled goods and recyclates;
- (b) incentives for ‘green’ products;
- (c) removing regulatory barriers;
- (d) green procurement targets for the public sector; and
- (e) targets for local authorities.

⁷⁸ OECD Working Party on Environmental Policy, *OECD Household Energy and Water Consumption and Waste Generation: Trends, Environmental Impacts and Policy Responses* (2002)

⁷⁹ Advisory Committee on Consumer Products and the Environment, *Action for Greener Products: a tool-box for change*. Second Report (2002)

⁸⁰ WRAP and Envirowise, *The Size of the UK Recycling and Re-Use Industry* (2002)

⁸¹ For a review of examples see Stavins R.N. *Experience with Market-Based Environmental Policy Instruments*, discussion paper 00-09, (January 2000)



Option (a): developing markets for recycled goods and recyclates

6.22 Markets for recycled goods and recyclates are still comparatively small. As these markets expand and increasing volumes of waste material are recycled, economies of scale and

greater stability of market prices can be expected to reduce the unit cost of recycled goods. It is important to continue and expand the work of WRAP (the Waste and Resources Action Programme) whose remit includes facilitating the development and expansion of these markets (see Box 20).

Box 20: Market Development by WRAP

WRAP is working to create stable and efficient markets for some of the 100 million tonnes of waste produced each year by households, industry and commerce. Its plan for delivering a step-change in recycling in the UK focuses on three generic areas (procurement, financial mechanisms, and standards and specifications) and five specific material streams (paper, glass, plastics, wood and, in England only, aggregates).

Some examples of its achievements include:

- support for a capital investment of £23m in the UPM-Kymmene paper mill at Shotton, North Wales. If approved by the European Commission, this investment will boost the UK's paper recycling capacity by 30%, diverting an extra 320,000 tonnes of newspapers and magazines away from landfill;
- support for investment of £5.5m in 34 research and development projects. Together, these projects – which range from investigating the use of recycled glass in industrial-scale drinking water filtration to developing standards at European level for recycled plastics – have the potential to prevent an extra 2.6 million tonnes of waste materials going to landfill;
- creation of a British Standards Institution Publicly Available Specification (BSI PAS 100) for Composted Materials. BSI PAS 100, which lays the foundation for a first full British Standard for compost, was funded by WRAP and developed jointly with BSI and The Composting Association. Launched in November 2002, it has been designed to boost the market for composted products by improving production methods, increasing confidence among potential buyers and making it easier for end-users to identify high-quality composted materials; and
- development of a model paper supply contract for use by local authorities in selling recovered paper to re-processors. One of the key aims of this initiative is to encourage broad acceptance of longer-term contracts that incorporate a degree of price predictability and thus reduce both parties' exposure to market price volatility.

More details on WRAP and its progress to date can be found at www.wrap.org.uk/stakeholders_report.asp

Option (b): incentives for “green” products

6.23 Green products are, in the broadest sense, those that have an environmental benefit and can range from unleaded petrol and energy-efficient light bulbs to products made from recycled materials. The European Commission’s Green Paper on Integrated Product Policy emphasised the potential role for economic instruments to promote green products.⁸² There are a number of incentives that could be applied to increase demand for ‘green’ products.

6.24 These are:

- taxes on ‘non-green’ products to reflect negative externalities;
- subsidies for ‘green products’⁸³ to reflect positive externalities;
- differential VAT rates on products according to their environmental characteristics;⁸⁴ and
- market incentives to promote green products such as eco-labelling.

Further work is required to evaluate the case for applying these in the UK, in particular:

- the gains of switching demand to alternatives i.e. whether the benefits would outweigh the economic and administrative costs;
- the sensitivity of demand in response to price signals;
- what is a clear and workable distinction between green and non-green products and how this might change over time; and
- potential infringement of international trade rules.

Recommendation 4:

HMT and DEFRA should consider the case for applying incentives such as economic instruments to encourage environmentally-friendly products. This could include differential product charges and incentives such as VAT reductions.

Option (c): removing regulatory barriers

BSI Standards

6.25 BSI Standards⁸⁵ have been cited as a potential barrier to the use of more recycled materials by a number of stakeholders. BSI does not currently have a specific policy on the use of recycled materials in its Standards. However, BSI are taking action in some areas. For example, in addition to their work with WRAP to produce a Standard for composted material (see Box 20), they are producing a suite of Standards for material recovery and for the use of recycled plastics material as packaging.

Recommendation 5:

DTI should also work with DEFRA, WRAP, industry and the BSI Group to assess what more can be done to promote the use of secondary resources where appropriate through BSI Standards. Where practical, they should review areas of standardisation which may be unnecessarily blocking the use of recycled goods; and consider whether an affirmative policy on the use of recycled materials in BSI Standards might be appropriate.

⁸² European Commission Green Paper on Integrated Product Policy, (2001)

⁸³ Proposal would have to be compatible with the single market

⁸⁴ Any changes in VAT are subject to renegotiations of the EU VAT Directive which is due to be reformed at the start of 2003

⁸⁵ The British Standards Institution is a UK national body that facilitates standards development in support of public policy



Building regulations

6.26 One of the reasons that people give for not recycling is the lack of room in their homes to store separated material.⁸⁶ In future such storage space should be an integral part of the design of living space in new developments. Existing building regulations and planning guidance do not cover designing in space for the storage of items (such as recyclates) either inside or outside the home.

Recommendation 6:
ODPM should revise the building regulations to require, where there are new housing developments with more than 50 houses, that space is allocated within the development for easily accessible recycling facilities. Similar requirements should be taken forward in Housing Corporation standards for new social housing schemes and NHBC standards for new private housing developments.

Option (d): green procurement targets for the public sector

6.27 The Government can play a significant role in boosting markets for recycled materials by increasing targets for green procurement. A high-level inter-departmental Sustainable Procurement Group (SPG)⁸⁷ has been set up by DEFRA to raise awareness of the importance of green procurement across government.

6.28 Although some progress has been made, performance across departments against targets set by Green Ministers⁸⁸ remains patchy. For example, there has been wide variation in the performance of departments against the key target to recover 25% of total office waste from recycling or composting in 2000/1, rising to 70% by 2003/4. While a few departments have been exceeding their recycling targets, others are recycling less than 25%.⁸⁹ Pilot arrangements for departments to procure recycled goods, initially paper, were announced in Waste Strategy 2000 but to date have not been successfully taken up. Targets proposed by SPG, in partnership with WRAP, address some areas of government procurement of particular environmental concern where there is scope for improvement. These are set out in Box 21.

⁸⁶ MORI research report for SU and ENCAMS study op. cit

⁸⁷ SPG is feeding into the new Framework for Sustainable Development on the Government Estate to be published in Spring 2003 (see <http://www.sustainable-development.gov.uk>). This new Framework supersedes the Greening Government initiative and will incorporate new targets

⁸⁸ Green Ministers are tasked with considering the impact of government policies on sustainable development and championing sustainable development in their own departments. For details of published targets see the *Greening Government Third Annual Report* (2001) at <http://www.sustainable-development.gov.uk>

⁸⁹ Data from the *Greening Government Third Annual Report* (2001) e.g. the Home Office recycled 21% of its waste in 2000/01; the ONS 22%; and DfEE 25%. A number of departments did not submit data, in part because some may not have had adequate data collection systems in place at the time



Box 21: SPG/WRAP proposed targets for government green procurement*

Targets for paper

White copier paper – recycled fibre should comprise a minimum of 35% of the weight of paper procured in any one year by 2003/4, increasing to a minimum of 75% by 2006/7.

Tissue (eg hygiene products) to be made from 100% recycled material from 2003/4.

Packaging to consist of 100% recycled materials from 2003/4.

Targets for construction materials

For aggregates, a target of at least 10% recycled (by weight) by 2003/4, rising to 20% by 2006/7.

For all other construction materials, a target of at least 10% (by value) by 2003/4, rising to 25% by 2005/6.

(Suggested targets apply per project and would not be applicable to projects under £500,000 in value.)

**As of December 2002, targets are still being finalised. Further details on these targets, including the reasoning behind them, are included in Annex E on Greening Government procurement, available on the Strategy Unit web site at www.strategy.gov.uk.*

6.29 In local government, sustainable procurement is also used inconsistently and is part of a broader issue of procurement management. The Byatt review of local authority procurement skills⁹⁰ recommended that every authority should have in place a formal documented procurement strategy. According to the Audit Commission,⁹¹ 80% of procurement strategies are inadequate, either because they are not finalised, not implemented, or do not cover all the necessary issues. Byatt also highlighted the importance of local authorities working in partnership with each other to negotiate contracts more effectively.

6.30 The SU supports the work that WRAP is undertaking with the LGA and IDeA⁹² to promote the take-up of green procurement by

local authorities and the training of procurement officers. This work should continue and be extended to the pooling of knowledge, perhaps through regionally based procurement units. It is also suggested that formal mechanisms are put in place by Green Ministers⁹³ to roll-out best practice tools developed by SPG to local government.

Recommendation 7:

OGC and other Departments should work through SPG and WRAP to finalise targets for the use of recycled materials as set out in Box 21. Departments should put in place a trained Green Procurement Officer (either combined with a finance officer's role, or as a separate post). Consideration should also be given to setting specific waste

⁹⁰ Ian Byatt chaired a review of the state of procurement skills and practices in English local government in Summer 2000, taking evidence from 35 local authorities. Research in support of Byatt by the DETR/LGA found that only 27% of English local authorities had a written procurement strategy in place as at September 2000. 50% were in progress

⁹¹ Audit Commission *Competitive Procurement* (March 2002)

⁹² Local Government Association (LGA) and the Improvement and Development Agency (IDeA). IDeA is an advocate of best practice in local government and aims to develop practical and innovative solutions to improve local government communications and performance. Further information about IDeA is available on their web site at www.idea.gov.uk

⁹³ The Ministerial Sub-Committee of Green Ministers (ENV(G)). This is made up of 20 Ministers from every government department



minimisation targets for office waste streams, for example, for office paper.

Recommendation 8:

ODPM and the LGA should consider setting voluntary environmental procurement targets for local authorities to encourage the purchase of more recycled goods and services, to minimise waste volumes and to encourage them to recycle more of their waste. These targets might be incentivised in a number of ways, for example through links to implementing service area targets within Sustainability Action Plans or re-instating waste in Beacon status for councils.

Option (e): targets for local authorities

6.31 The Government has set statutory performance standards for each Waste Collection Authority and Waste Disposal Authority. These have been set at a level to ensure that each authority contributes proportionately to the achievement of the national targets in 2003/4 and 2005.⁹⁴ In addition there are nine Best Value Indicators for waste management.⁹⁵

6.32 The statutory targets are intended to drive up the rate of recycling but they risk creating perverse incentives. Since the targets are expressed as percentages of total waste tonnages, there is a particularly strong incentive to recycle the heaviest items such as green waste, but this may not be the economically or environmentally most efficient outcome. Moreover, they risk encouraging the collection of additional green waste, which could be more cost-effectively managed through home composting.⁹⁶ There are no explicit targets for waste reduction, despite Waste Strategy 2000 stating that these should be a priority.⁹⁷

6.33 The nine Best Value Indicators (see Box 22) also contain various anomalies:

- they are based on the tonnage collected with no indicator of success in reducing waste collected;
- they include an indicator for 'the cost of waste disposal per tonne'. But costs could be reduced by disposing of more waste at landfill sites.

⁹⁴ Taking performance from the 1998/99 baseline data, these standards equate for many authorities to doubling their 1998/99 recycling rate by 2003/4. Audit Commission *Waste Management: Guidance for improving services*

⁹⁵ see <http://www.bvpi.gov.uk>

⁹⁶ Where local authorities are offering green waste collections, there is evidence of a significant increase in waste growth compared to those that do not. Parfitt J. (2002)

⁹⁷ Evidence suggests a correlation between waste reduction and those authorities that have encouraged home composting. However, in some cases local authorities have encouraged waste growth through issuing 240 litre bins, compared to the normal bin size of 140 litres, and proposing that waste is only collected fortnightly even though pressure to maintain service levels has often resulted in weekly collections. Parfitt J. (2002)



Box 22: The nine Best Value Indicators

Waste management is a key service provided by local authorities and a number of Best Value Indicators have been set for waste management services. These are:

1. The tonnage and percentage of household waste arisings that are
 - recycled
 - composted
 - used to recover heat, power and other energy sources
 - landfilled
2. Weight of household waste collected, per head
3. Cost of keeping land clear of litter and refuse per km
4. Cost of waste collection per household
5. Cost of municipal waste disposal, per tonne
6. Number of collections missed per 100,000 collections of household waste
7. Percentage of people satisfied with cleanliness standards in their area
8. Percentage of people expressing satisfaction with
 - recycling facilities
 - household waste collection
 - civic amenity sites
9. Percentage of population served by a kerbside collection of recyclable waste, or within one kilometre of a recycling centre.

Source: Waste Strategy 2000, Vol. II

6.34 The SU has reviewed whether the current targets and indicators should be amended. There are several options that would provide better-focused targets:

- a waste minimisation target alongside the recycling rate;
- a balanced scorecard approach combining waste minimisation and recycling and a residual waste target; and
- a residual waste target i.e. a volume limit on waste after re-use and recycling/composting – a declining target would be set over time.

6.35 All have merits in principle: they are simple, output based and would provide incentives consistent with overall strategic objectives. However, there are practical difficulties in their application – the key one being definitions e.g. what counts as residual waste.⁹⁸

6.36 The most effective target would be the residual one. It is simple and moves away from the unnecessary focus on tonnage based recycling rates, which have led to increased waste growth.

⁹⁸ A broad definition is given in Chapter 5 but for a measurable target this would need to be refined



Recommendation 9:
DEFRA together with ODPM, the Audit Commission and WRAP should develop proposals for alternative indicators that incorporate success in reducing waste volumes. New targets for local authorities should then be set to reflect the SU waste reduction and recycling strategy.

Promoting more composting

6.37 Markets for compost, as well as for recyclates have a vital role to play in reducing the volume of biodegradable municipal waste going to landfill.

6.38 The most immediate issue concerning compost has been raised by the Animal By Products Order (ABPO) 1999. Amendments to the ABPO in 2001 effectively banned the composting of catering waste by making it illegal to spread the resulting compost on land where animals (including wild birds) may have access. This has halted progress in the use of compost on agricultural land. DEFRA have issued a consultation paper on changes to the ABPO that will allow the composting of catering waste and its spreading on land, under certain conditions.⁹⁹

6.39 Currently there are no statutory standards for compost; however this may change as the EU is expected to begin negotiations on a Bio-Waste (the biodegradable fraction of waste) Directive sometime in 2003. In the meantime a full national British Standard has been developed by the Composting Association, WRAP and BSI (see Box 20).

6.40 The development of markets for organics is considered further in Chapter 7.

6.41 A separate annex on biowaste is available on the SU web site.

Recommendation 10:
DEFRA should continue to encourage the development of quality standards for compost, ensuring in particular that the needs of the customer are taken fully into account. These quality standards should inform DEFRA's position during any negotiations on an EU Bio-waste Directive.

6.42 DEFRA should also develop a bio-waste strategy addressing, amongst other issues:

- making available a soil map showing where compost may benefit agricultural land;
- the provision of advice to farmers on the agricultural and environmental benefits of compost;
- the contribution compost can make as a carbon sink for the UK climate change programme; and
- the scope for extending farm environment schemes to cover the improvement of soil quality through the application of compost.

Reducing the volume of waste sent to landfill sites

6.43 The main options are:

- (a) a further increase in the landfill tax;
- (b) banning waste from landfill.

Option (a): a further increase in the landfill tax

6.44 The UK introduced a landfill tax in 1996. There are two tax rates: a standard rate, originally set at £7 per tonne, for "active" wastes; and a lower rate of £2/t for "inactive" wastes.¹⁰⁰ While the lower rate has remained at

⁹⁹ In the absence of domestic legislation on this issue, the terms of the EU Animal By-Products Regulation will become UK law. These requirements are much more stringent and probably rule out composting operations using catering waste as the feed material

¹⁰⁰ Inactive waste includes: rocks and soil, ceramic or concrete materials, minerals, furnace slags, ash, low activity inorganic compounds, calcium sulphate, calcium hydroxide and brine, water



£2/t since inception, the standard rate was increased to £10/t in 1999. Current policy for the standard rate is based on the escalator announced in 1999, under which there was to be a series of five annual £1/t increases from April 2000 to April 2004. The standard rate for active wastes will therefore reach £15/t in April 2004.

6.45 When the landfill tax was introduced the rates were based on estimates of the environmental externalities (i.e. the environmental costs that are not reflected in the market price) associated with disposing of waste at landfill. As mentioned above, current policy for the standard rate is based on the escalator announced in 1999. In effect, the landfill tax has become more of a “behavioural” tax, designed to reduce further our reliance on landfill, and encourage a shift towards more sustainable waste disposal practices.

6.46 The annual revenue raised by the tax is £502 million (2001/02)¹⁰¹ net of contributions to the Landfill Tax Credit Scheme, of which 95% is ‘active’ waste revenue. This is offset by a 0.2% reduction in employer National Insurance Contributions.

6.47 Since the introduction of the tax, there has been a 60% reduction in the volumes of ‘inactive’ waste sent to landfill sites, whilst the volume of ‘active’ waste sent to landfill has remained broadly unchanged.¹⁰² The latter is explained by the fact that the costs of landfill, including landfill tax, remain low compared to other alternative methods of treatment/disposal.

Moreover, landfill disposal costs represent a relatively small proportion of business operating expenses.¹⁰³

6.48 If a reduction in landfill is desirable (and the earlier chapters of this report argue it is), a further increase in the landfill tax would be one way in which this could be achieved.^{104,105,106} It would be important, however, that any increase in the landfill tax strikes the right balance between stimulating the desired change in behaviour whilst not imposing unacceptable burdens on local authorities and business.

6.49 Of the total revenue sourced from active waste, approximately 46% is paid by business and the remaining 54% by local authorities. Some analysis has shown that for business sectors, a landfill tax as high as £45/tonne would mean that waste management costs would rise to at most only a few tenths of a percent of turnover in any one sector.¹⁰⁷ However, this analysis would need to be supplemented by more work to look at the impact in more detail.

¹⁰¹ Latest year. The Landfill Tax Credit Scheme is explained in more detail in Chapter 7. Source: Customs and Excise Annual Boards Reports

¹⁰² Customs and Excise

¹⁰³ Quoted in ACBE *Resource Productivity, Waste Minimisation and the Landfill Tax* (August 2001) – Original source: *Effectiveness of the Landfill Tax in the UK: Barriers to Effectiveness and Options for the Future*, ECOTEC Research and Consulting (March 1998)

¹⁰⁴ Environment, Transport and Regional Affairs Select Committee 5th Report op.cit

¹⁰⁵ ACBE, op.cit

¹⁰⁶ Budget 2002: “The Government anticipates that the standard rate of landfill tax will need to be increased significantly in the medium term as part of the mix of future policy measures.”

¹⁰⁷ ACBE, op.cit



Figure 12: Landfill tax rates and prices in other countries

EU states:	Tax rates £/tonne	Landfill prices £/tonne
Austria	18-54	36-82
Belgium	3-14	43-51
Denmark	28	13-21
Finland	9	-
France	4	-
Germany	none	16-32
Greece	none	4-9
Ireland	none	-
Italy	0.6-16	-
Luxembourg	none	-
Netherlands	8-40	47
Portugal	none	4-9
Spain	none	9
Sweden	17	-
UK	2-13	13-23
Non-EU states:		
Czech Republic	11	-
Norway	24.50	-
Switzerland	6-20	56-65
Note: figures are approximate due to rounding. Figures represent the latest years available and may not be consistent between countries		

Sources: OECD, ENDS and Austrian Federal Environment Agency, 2002

6.50 Of those countries which have a landfill tax, the UK currently has the lowest tax rates for active waste (Figure 12), apart from France (which has an escalator of 1 Euro per tonne per annum) and Finland which is proposing large

increases (See Box 23 below). As the UK also has relatively low gate fees¹⁰⁸ the overall cost of landfill remains low compared to other countries.

¹⁰⁸ the price charged by the waste management facility for dealing with the waste



Box 23: Recently announced increase in landfill tax in Finland

The Finnish government has proposed doubling its landfill tax over the next three years. A newly approved national waste plan, covering the years 2002 to 2005, stresses the need for urgent measures to improve waste management practices in Finland as progress has been slow. Under the plan, waste taxes are to rise in steps from their present level of €15.14 per tonne of waste to €30 per tonne by 2005. Revenue is to be used to increase government spending on research and development and other investments in waste management.

6.51 Like businesses, a rise in landfill tax will provide local authorities with an incentive to fund alternative ways of managing and disposing of waste. For example, increasing recycling through civic amenity sites and bring sites – the lowest cost ways of recycling – would become economically attractive options.

6.52 It is not envisaged that the operation of the tradable allowances scheme (Box 24) will be adversely affected by increases in the landfill

tax. It supplements the effect of the tax by providing an additional incentive to ensure that targets under Article 5 of the Directive relating to biodegradable municipal waste will be met. However, significant rises in landfill tax rates to those approaching the highest rates in Europe, could remove the incentive for local authorities to trade allowances as the net cost of diverting waste to alternative waste management options falls.

Box 24: Tradable landfill allowances for local authorities

The Waste and Emissions Trading Bill was published on 15 November 2002. Part 1 of the Bill sets up a system of tradable landfill allowances. This is believed to be the first of its kind in Europe. If an active trading market develops, this system should help to ensure that the targets in Article 5 of the Landfill Directive are met in the most cost efficient and effective way for the UK as a whole.

Waste disposal authorities will be able to send to landfill biodegradable municipal waste only up to the levels of the allowances which they hold. Local authorities that divert more waste away from landfill (e.g. through more recycling) will be able to trade their unused allowances with a local authority that does not hold enough allowances to cover the amount of waste it plans to landfill.

The key advantage of tradable allowances is that they allow the Landfill Directive targets to be met at less cost. This is because those authorities with high costs of diversion from landfill will wish to buy allowances from those with lower costs of diversion so that they can continue to landfill. Lower cost diverters will be incentivised to over-achieve their targets and receive an income from selling the surplus allowance.



6.53 Lessons from the introduction of high rates of landfill tax in other countries include:

- the importance of signalling the increase 2 to 3 years in advance to allow time for the transition and the development of alternatives; and
- there may be advantages in banning specific waste products from landfill sites in parallel with the tax increase.

6.54 Based on SU analysis of the relative prices of waste management options, a landfill tax rate of £35/t would provide a sufficient incentive to change behaviour and reduce reliance on landfill as the major waste management option. This is broadly in line with previous estimates.¹⁰⁹

Recommendation 11:

HM Treasury should consider an increase in the landfill tax to £35/t for active waste in the medium term.

6.55 The proceeds from an increased landfill tax are considered in Chapter 8.

- it forces all firms to comply regardless of the costs.

6.57 There is less of a case for applying a ban now, however it could be retained as an option for the future. A suitable time for review would be 3-4 years before the first Article 5 target on municipal biodegradable waste to landfill in 2010.

6.58 A specific ban on biodegradable material could be considered if the other instruments designed to meet Article 5 of the Landfill Directive were failing to make progress. Another alternative is to impose a ban on recyclable materials at some future point. Consideration could also be given to extending a similar ban to incineration.

Recommendation 12:

DEFRA and DTI should review the case for a ban on the landfilling of recyclable products in 2006/7 and at the same time consider the case for a similar ban on incinerating recyclable products.

Option (b): banning waste from landfill

6.56 The combination of instruments recommended in this chapter should provide a strong incentive to reduce volumes of waste sent to landfill. Consideration of a ban would be necessary if these instruments were less effective than anticipated.¹¹⁰ However, an outright ban has several disadvantages:

- it allows less flexibility within the waste management system compared to economic incentives;
- it can be counterproductive if, for some wastes, landfilling is the most cost-effective option; and

Should there be a complementary increase in fines?

6.59 As the landfill tax increases and waste costs go up, there is a strong argument for increasing the penalties for illegal dumping of waste.

6.60 The evidence on fines and prosecutions shows that current penalties are low. Although the fines imposed for waste offences by Magistrates Courts under Section 33 of *The Environmental Protection Act 1990* have been gradually increasing,¹¹¹ the average levels of fines still fall far short of the maximum that can be awarded for waste offences i.e. up to £20,000 as shown by Figure 13 below.

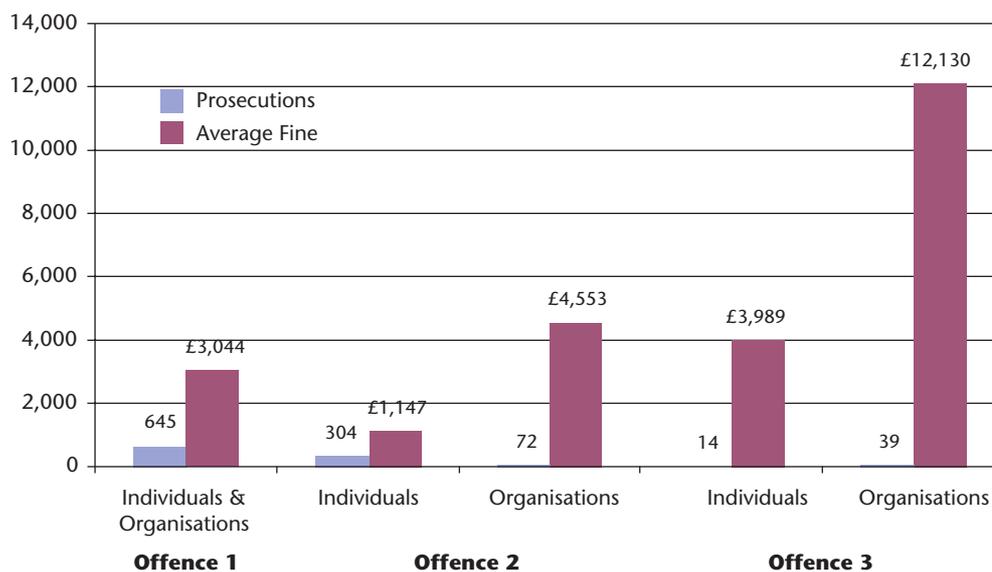
¹⁰⁹ See for example Biffa *Future Perfect* (2002) and the House of Commons Environment, Transport and Regional Affairs Committee Fifth Report

¹¹⁰ Sweden has banned combustible municipal waste from landfill from January 2002. This was first proposed in 1997. Sweden already landfills just under one quarter of household waste, the figure is estimated to fall as low as 5-10% within three years (Swedish Environmental Protection Agency)

¹¹¹ Data supplied by the Environment Agency. Maximum penalties for waste offences under Section 33 (8) of *The Environmental Protection Act 1990*: on summary conviction, imprisonment for up to six months or a fine up to £20,000 or both; on conviction on indictment, imprisonment for up to two years or a fine or both



Figure 13: Prosecutions and average fines for various waste management offences between 1999-2002



Offence 1: Section 33 – Unauthorised or harmful depositing, treatment or disposal of waste
 Offence 2: Section 33 (1) (a) – Fly-tipping and Related Offences
 Offence 3: Section 33 (6) – Contravention of conditions of a waste management licence

6.61 A recent Home Office report¹¹² on fine enforcement in magistrates' courts highlighted the need for more effective imposition of fines at the point of sentencing; shortening timescales for enforcement actions; and measures to deal with persistent offenders. More generally, the report highlighted the importance of increasing courts' capacity to trace and pursue offenders more efficiently and the need for better training for magistrates.

6.62 The Lord Chancellor's Department has in place (from April 2002) a 2-year collection scheme by which revenue from fines paid is netted off and returned to the courts, ring-fenced for enforcement. Legislation on more stringent fine enforcement arising from the Government's "Justice for All" White Paper¹¹³ is also being taken forward through the Courts Bill, introduced in the House of Lords on 28 November 2002.

Recommendation 13:
The Home Office/Lord Chancellor's Department should ensure that guidance directed to magistrates is sufficient to support more prosecutions for waste crimes. Strengthening the role of other deterrents to waste crimes, such as vehicle confiscation, driving license removal, and more 'on the spot' fines, should also be considered.

Even if high levels of recycling are reached, it will still leave a significant proportion of the waste stream to be managed

6.63 Less of England's waste stream will go to landfill for the reasons explained in earlier chapters. The implications for incineration and other residual waste management methods will depend on the success of the future waste

¹¹² Home Office, *Fine enforcement in magistrates' courts* (2002)

¹¹³ The Government White Paper *Justice for All* was published in July 2002 and set out a programme of reform of the Criminal Justice System



management strategy in reducing waste volumes, increasing re-use and promoting recycling. The more successful these aspects of the strategy, the smaller will be the volume of residual waste to be disposed of, and the lower the requirement for associated facilities.

6.64 England makes less use of incineration than other industrialised countries (see Box 25). Incineration capacity has been increasing very slowly in the UK in recent years. There are currently 12 incinerators dealing with municipal waste.

Box 25: How other countries manage their residual waste

The two main methods of managing residual waste in other nations are incineration and landfill. Incineration is widely used in other nations as a means of recovering some energy as electricity and heat.

It accounts for about 20% of municipal waste management on average in the EU. Even countries with high recycling rates e.g. the Netherlands incinerate around 30% of their waste. The UK currently incinerates about 9% of its waste.

Despite having kerbside recycling and other measures in place to tackle waste, the Italian Government has recently decided it must build some incinerators to deal with residual waste and has set out a national programme to this end.

What is the potential role of incineration?

6.65 Although there is some recovery of energy and heat from incineration it can be quite small, and the EU is currently deciding if incineration should be classified as a disposal option. In the SU's view, recycling is higher up the waste hierarchy than incineration. However, incineration is widely used in the EU (even in nations with high recycling rates) for waste that is not easily recycled or cannot be recycled as an alternative to landfill.

6.66 Its place in England's waste management, like any other option for managing residual waste, depends on our success in reduction, re-use and recycling and the development of alternative residual waste facilities such as MBT. If we do not reduce our residual waste/develop alternatives we will need far more incinerators to manage residual waste.

6.67 Ultimately it is for local authorities to decide on the BPEO for managing their waste. When considering incineration they should:

- take care to avoid being locked into long term tonnage contracts that do not take account of plans to reduce and recycle considerably more waste;
- make the choice between lower costs, by sharing large-scale incinerators with neighbours, and higher cost local incinerators on a smaller scale;
- give thought to the development of contracts that only allow the incineration of residual waste i.e. waste after it has been pre-segregated; and
- consider other options like MBT for managing residual waste.



6.68 The aim should be to find the best options for dealing with waste which cannot be reduced, re-used or recycled. This is a decision best made by local authorities depending on local circumstances.

Should there be a complementary introduction of an incineration tax?

6.69 The introduction of a much higher rate of taxation on landfill sites raises the question of whether an incineration tax needs to be introduced in parallel to reflect the logic of the waste hierarchy. Several considerations are relevant to this:

- the evidence on the environmental externalities associated with incineration is mixed. Some estimates point to environmental costs of £50 per tonne whilst others point to benefits of £30 per tonne depending on the assumptions about which fuels and generating technologies are used to produce the electricity displaced by the incinerator;¹¹⁴
- a significant increase in the landfill tax is unlikely to make incineration the cheapest option for disposing of waste. Furthermore, it is not expected that all waste diverted from landfill would automatically be incinerated.

Recommendation 14:

The case for an incineration tax should be kept under review. The purpose of raising the landfill tax is not to promote incineration at the expense of all other options, but rather to send a clear signal about landfill.

6.70 Any review should consider the possibility of applying differential tax rates e.g. to promote 'cleaner technology' and/or on different types of waste processed through incineration, with perhaps higher taxes on incineration of unsorted waste, recyclable materials, or materials with a high level of toxicity.

What are the health effects of incineration?

6.71 No waste management options carry zero risk. Incineration is one of the most widely studied of all the waste options. There are those who say that there are significant health effects¹¹⁵ and those who disagree.¹¹⁶

¹¹⁴ These figures reflect the range of external cost estimates in the available literature

¹¹⁵ Greenpeace, *Incineration and Human Health*, Friends of the Earth, *Incineration and Health issues*

¹¹⁶ Environment Agency, *Solid Residues from Municipal Waste Incinerators in England and Wales*, National Society of Clean Air, *Comparisons of emission from waste management options*



Box 26: Department of Health evidence on the health effects of the incineration of municipal solid waste:¹¹⁷

- A report on “Health effects of waste combustion products” published in 1997 by the Medical Research Council Institute for Environment and Health concluded that epidemiological studies of people who work or live near incinerators have shown no consistent excess incidence of any specific disease.
- Similarly, a report on waste incineration and public health published in 1999 by the US National Research Council, concluded that “few epidemiological studies have attempted to assess whether adverse health effects have actually occurred near individual incinerators, and most of them have been unable to detect any effects.” The studies which did report any health effects had shortcomings and failed to provide convincing evidence.
- The independent advisory committee on the carcinogenicity of chemicals in food, consumer products and the environment has considered studies on cancer incidence near municipal solid waste incinerators. It considers that any risk of cancer due to residency near to municipal solid waste incinerators is exceedingly low and probably not measurable using most modern epidemiological techniques. The committee said there was no further need for investigations of cancer incidence near municipal solid waste incinerators. Their statement can be found at www.doh.gov.uk/munipwst.htm

These studies suggest that, while health effects cannot be completely ruled out, the potential effects are so small that they are very difficult to isolate from other potential causes. Indeed, exposure to risk was hard to measure with any precision.

The Department of Health states it is not aware of any subsequent epidemiological studies that invalidate these conclusions. Furthermore most of these studies concern older incinerators which are now required to comply with much more stringent emissions standards.

6.72 Despite this research and the fact that emissions from incinerators are falling rapidly, incineration continues to be the subject of a good deal of controversy. This is particularly with respect to the potential health effects of even very low levels of emissions.

6.73 The SU’s initial review of the literature¹¹⁸ suggests that whilst there are concerns about the health effects of materials produced from all waste management facilities, the risks are very low and difficult to measure. Like the Department of Health, the review found no evidence of a proven causal link between incinerators and cancer.

6.74 Incineration should be treated like any other waste management approach. This means that every effort should be made to ensure that they are well regulated. If it is the BPEO for an area, and it is effectively regulated, it should be for local authorities to decide if they wish to use this method. Although all residual waste options should be scaled to ensure they take full account of waste reduction and recycling targets.

6.75 However, building on the initial review undertaken by the SU, there is a case for setting up a more comprehensive evidence base on the health and environmental effects of incineration and all other waste management options to:

¹¹⁷ Department of Health

¹¹⁸ SU working paper, Envirospire, *The Context for Emissions and Health Impacts Associated with Waste Management*. This is summarised in Annex J, available on SU website



- help planners and local authorities when making decisions; and
- provide the conditions for greater public acceptance of all the different options for managing residual waste.

Recommendation 15:

An independent body should bring together the literature and evidence on the relative health and environmental effects of all the different waste management options; relative both to each other and to other activities affecting health and the environment.

7. STRATEGIC INVESTMENT MEASURES

Summary

The changes described in chapters 5 and 6 need to be backed up by practical measures now if we are to achieve a sustainable system of waste management.

This requires a balanced package, which will:

- (i) reduce the rate of growth in waste quantities through an expansion of home composting, the promotion of waste minimising measures in the retail sector and encouraging the design of new products specifically to reduce biodegradable waste;
- (ii) expand and develop the infrastructure for recycling through a programme of best practice advice on the collection of materials, the development of recyclate markets, and kerbside, bring and civic amenity site design;
- (iii) provide better information and advice to households and businesses;
- (iv) improve the quality and range of data and research on waste by improving the co-ordination of existing surveys and data, increasing dissemination, filling critical gaps and ensuring efficient data collection systems; and
- (v) promote new technologies and approaches to waste management through a package of technical support and advice and a programme of pilot studies.

If England is to make progress towards sustainable waste management new investment is needed now

7.1 Chapter 6 set out the recommended framework of incentives and regulation that needs to be put in place in the medium to longer term. This chapter sets out what is required in the short term.

7.2 There are five key elements:

1. Reducing the amount of waste produced by households.
2. The expansion of recycling via kerbside collection, increased bring and well designed civic amenity sites, and composting.
3. Improving information and advice available to households and industry on all aspects of managing and reducing waste.
4. Improving the data and research available to government, local authorities and the waste industry for policy formulation, strategic planning and service delivery.
5. Promoting new technologies.

Priority 1: reducing the amount of waste produced by households

7.3 This is a crucial yet challenging element of the overall strategy since it requires a significant shift in behaviour, lifestyles and attitudes to waste. But, if successful, it offers potentially high returns in terms of lower long-run costs of waste management and a reduced number of extra facilities, minimising public opposition.

What's needed?

7.4 Five key measures are proposed. Their aim is to bring about a 1% per annum reduction in the rate of growth in household waste quantities from 3% to 2%, equivalent to about 1 million tonnes each year by 2005/06. The measures are described in more detail in Figure 14 but, in summary, consist of:

- an extension of home composting participation;
- greater use of re-usable nappies;
- a retailer initiative focused on the top 5 supermarkets;
- increased research and development on waste minimisation through better product design; and
- WRAP to help LAs conduct incentive based schemes for waste minimisation and education to accompany waste minimisation programmes.



A Home Composter – photo courtesy of The Composting Association

Figure 14: Four Investment Measures to Reduce Waste

Measure	Aims	Rationale	Estimated Cost	Benefit/impact
<p>1. Extension of home composting</p> <p>A three year programme to help households start home composting and to improve composting rates for those who already participate. Led by WRAP through a programme of roll-out of composting bins and high quality, practical advice directly to individual households. Based on the successful Master Composter model from the US and Canada.</p>	<ul style="list-style-type: none"> To raise householder participation in home composting by 10% in urban areas and 15% in rural areas; specific target areas would be selected after research. The emphasis will be on rural areas where a realistic target would be 120 kg/household a year diverted. In urban areas a realistic target is 90kg/household a year diverted;¹¹⁹ aim is to reduce arisings by a total of 400,000 tonnes over three years; in each of the following years the aim is to reduce arisings by 300,000 tonnes per annum. 	<ul style="list-style-type: none"> Home composting carried out to high standards is an effective way of reducing the organic component of waste arisings. There have been successful schemes in Austria, Italy and Belgium as well as in Canada and the US. Around a third of households in England have participated in some form of composting activity in the last 12 months.¹²⁰ Local authorities are estimated to have rolled out 1.5 million composting bins since 1995/6.¹²¹ However, the lack of sustained support for householders is a major factor in the relative lack of demonstrable success of current home composting activities. 	<p>Based on an average one-off bin cost of £20 per household (assuming major economies of scale from large orders) and an average support package of £10 per household a year, the programme costs are £30 million over three years.</p>	<ul style="list-style-type: none"> An overall diversion of 300,000 tonnes could be achieved from the third year of the programme onwards. This is based on raising participation by an additional 10% in urban areas and 15% in rural areas assuming waste reduction/diversion from the household stream of 90kg-120kg per household a year. Based on average waste management costs of £45/t,¹²² the reduction would save £13.5 million in waste management costs per year. The programme breaks even by 2006/07.

¹¹⁹ Parfitt J. (2002), *Home Composting – from participation to diversion?* Paper presented at Home Composting Conference 2002, Imperial College, London. This shows a range of estimated home composting diversion rates from 50-250kg/household per year, not all of this material would otherwise have become part of the household waste stream. See also Wheeler P. & Parfitt J. (2002), *Lifecycle assessment for home composting*. Paper presented to Waste 2002 Conference. Recent analysis of home composting diversion field trials showing average 5.25kg/household per week.

¹²⁰ Onyx/NOP (2000) *Public attitudes towards waste*

¹²¹ DoE/DEFRA

¹²² SU analysis. Estimated average unit waste management cost per tonne, net of landfill tax, 2003/4 – 2005/6.

Figure 14: Four Investment Measures to Reduce Waste (continued)

Measure	Aims	Rationale	Estimated Cost	Benefit/impact
<p>2. Re-usable nappies Building on successful schemes such as the West Sussex Initiative, promoting re-usable nappies and developing nappy washing businesses.</p> <p>The main feature is pump priming grant aid for SMEs and new start-ups for nappy washing businesses.</p>	<ul style="list-style-type: none"> To achieve an average diversion of 225kg/yr per participating household by the third year of the programme. The scheme would aim to reach 550,000 households, equivalent to 24% of households with children aged 0-3 years; aim is to reduce arisings by a total of 200,000 tonnes over three years. 	<ul style="list-style-type: none"> Disposable nappies make up between 2-3% of household waste. Even modest initiatives to displace disposable nappy use with re-usable nappies can have a significant waste minimisation impact. Promotion and education form an integral part of any nappy washing initiative, and more successful schemes have also included an element of financial incentives to households. 	<p>Based on the West Sussex Scheme, an average cost of £18 per household per year and a target of 550,000 in the scheme at any one time gives a total cost of £24 million over 3 years.</p>	<ul style="list-style-type: none"> Based on a target of 500,000 households and an average of 225kg waste diverted per participating household per year, the total reduction is 124,000 tonnes per year at the end of the three-year programme.



Figure 14: Four Investment Measures to Reduce Waste (continued)

Measure	Aims	Rationale	Estimated Cost	Benefit/impact
<p>3. Retailer initiative</p> <p>Engaging the top 5 supermarket chains at a high level to secure agreement to reduce own brand packaging and plastic film, introduce refillable bottles and help households reduce food waste, for example through improved labelling of sell by/use by dates. WRAP will draw up the strategy and take the lead in its implementation. WRAP should also work with DEFRA to ensure that existing requirements placed on retailers under the Packaging Regulations are properly taken into account.</p>	<ul style="list-style-type: none"> To reduce plastic bags, own-brand packaging, householder food waste, plastic film waste and to promote the use of refillable bottles; aim is to reduce arisings by a total of 310,000 tonnes over three years; in each of the following years the aim is to reduce arisings by 250,000 tonnes per year. 	<ul style="list-style-type: none"> WRAP has established that between 35-40% of all household waste which ultimately ends up in landfill began its life as a purchase from one of the top 5 supermarket chains.¹²³ The supermarkets link massive supply chains with households' behaviour and are therefore best-placed to influence change. 	<p>It is difficult to assess the costs at this stage. The supermarkets will incur costs in changing labels etc. WRAP will require a budget to run the programme estimated to be £12 million over 3 years.</p>	<p>The potential benefits of this initiative are probably greater than any of the other waste minimisation programmes in securing a real reduction in household waste over the long term. Over the 3 year period the programme should have reduced waste by over 300,000 tonnes. From 2005/6 onward the estimated reduction is 250,000 tonnes, saving £11 million a year.</p>

¹²³ Parfitt J. (2002)

Figure 14: Four Investment Measures to Reduce Waste (continued)

Measure	Aims	Rationale	Estimated Cost	Benefit/impact
<p>4. R&D Innovation Fund Establish an innovation fund for waste minimisation including mechanisms for targeting products that impact on the municipal waste stream, particularly biodegradable waste. The fund would be competitive based on key criteria of reduction in tonnage of material and be led and managed by WRAP. The fund should be sufficient to identify and develop five new innovative products that will reduce biodegradable MSW.</p>	<ul style="list-style-type: none"> ● Provide funding for the development of high quality innovations. 	<ul style="list-style-type: none"> ● Further work is needed to challenge industry and the retail sector to develop innovative ways of minimising material use in products, design for minimum material use and maximum recyclability. 	<p>A fund of £12 million over 3 years.</p>	<p>The benefits will come once these innovations are in place. It is difficult to assess at this stage.</p>

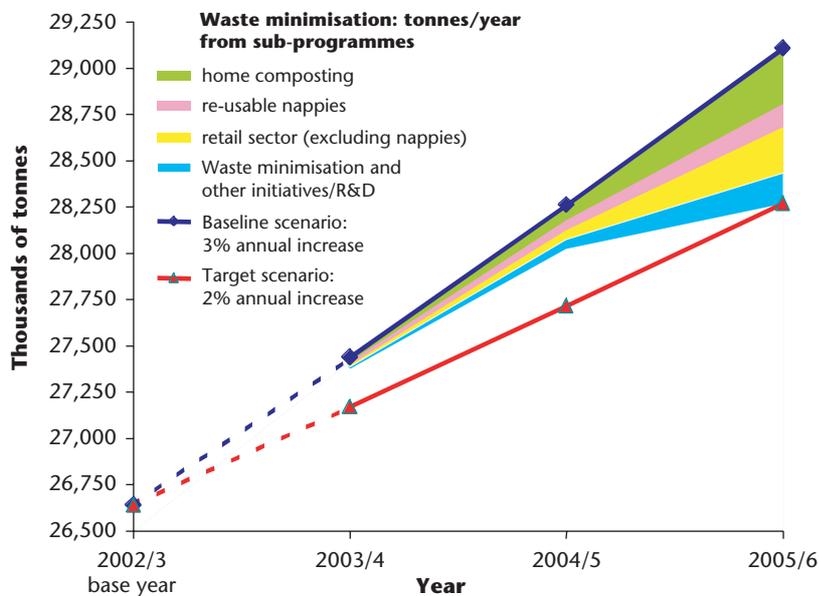


What could a reduction in waste growth achieve?

7.5 Taking 2002/3 as a base year, in which it is estimated that household arisings in England will be over 26 million tonnes, growth at 3% per annum would lead to waste arisings of 29.1

million tonnes by 2005/6 but only 28.3 million tonnes if the growth rate were only 2% per annum – giving a waste reduction target of 800,000 tonnes by year 3. Figure 15 below illustrates the estimated contribution of each programme to achieving this.

Figure 15: Projected tonnes reduced from household waste arisings in relation to baseline (3%) and target scenario (2%): indicative contribution from sub-programmes



Source: WRAP

7.6 In summary, the total cost over three years is £100 million, resulting in an estimated reduction in waste volumes of 1.14 million tonnes. This is estimated to save £51 million in waste management disposal costs over three

years. However, the impacts of home composting, the retail sector initiative and R&D and other waste minimisation measures will continue beyond the 3-year period, potentially saving £32 million per year.

	Over 3 years 2003/4 to 2005/6
Cost of four programmes	£100m
Anticipated reduction in arisings	1.140 million tonnes
Waste management disposal cost savings @ £45/t ¹²⁴	£51m

¹²⁴ SU analysis. Estimate of unit waste management cost, net of landfill tax, 2003/04 – 2005/06



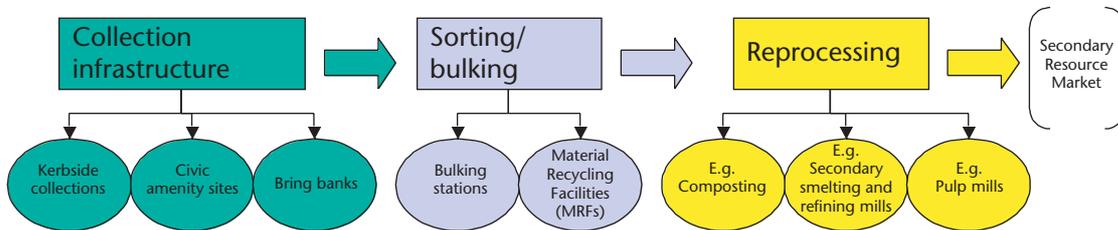
Recommendation 16:
WRAP should take forward four measures to reduce waste volumes through an extension of home composting; promotion of the re-use of nappies; joint initiatives with the major supermarkets to reduce packaging; and support for R&D.

Priority 2: expanding recycling and composting infrastructure

7.7 Without the necessary infrastructure, a shift to more recycling and composting will not be delivered.

Figure 16 sets out the key elements of the infrastructure needed for increased recycling and composting.

Figure 16: infrastructure for recycling and composting



7.8 The development of collection infrastructure has been relatively slow because of cost and the added challenge of encouraging people to participate. Provision of kerbside collections has grown from 20% of households in 1995/96 to 52% in 2000/01. Box 27 summarises the current situation.



Outside the Material Recovery Facility (MRF) in Portsmouth – photo courtesy of Hampshire County Council/Onyx



Inside the Material Recycling Facility (MRF) in Huddersfield (part of the Kirklees Energy and Materials Recycling Park) – photo courtesy of Kirklees Metropolitan Council



A recycling bring site – photo courtesy of Hartlepool Borough Council



Box 27: current collection infrastructure for municipal waste

Kerbside collections – 52% of local authorities have some kind of kerbside collection for recyclables. These are very varied e.g. collecting paper only or a mixed collection of paper, cans and glass or bulky items only. These types of collection are the most expensive, but also the most convenient for households. During the period of growth in kerbside collections, there has been a shift away from paper only collections towards multi-material schemes. Currently only 8% of households receive organic waste collections.

Civic amenity (CA) sites – 1.2 million tonnes of waste are collected through CA sites. The current network of civic amenity sites achieves variable recycling rates. The average is 22% although best practice sites have achieved much higher rates (Essex 53%, Hampshire 51%).

Bring banks – 0.7 million tonnes of waste, mainly paper and glass is collected from bring sites. The current density of provision is 1:1,170 households – below that in Belgium (1:400) and Germany (1:800). The Audit Commission recommended in 1997 that good practice should involve the provision of one bring bank for every 750 households.

J. Parfitt (2002)

What's needed?

7.9 Two investment programmes are needed:

1. a WRAP-led programme of advice to local authorities on the expansion of kerbside collection. There should be particular emphasis on supporting the roll-out of organic waste collections where current provision is low; and
2. a corresponding expansion of markets for compost.

The objectives of the programmes would be to:

- expand collection infrastructure to provide simple and convenient facilities and to enable critical capacities to be reached and economies of scale to be achieved;
- increase participation and bring about behavioural change;
- develop recycle markets focusing more attention on organic wastes; and
- develop secondary materials markets to stabilise prices and encourage private sector investment.

7.10 Details of the two proposed programmes are set out in Figure 17.

What could they achieve?

7.11 The aims are to achieve a step change in the overall levels and quality of composting in England:

- to produce an additional 1 million tonnes per annum of compost produced from new local authority organics collections by 2006. This should add 3.5% to the average household recycling/composting rate; and
- expand the market for compost in the landscaping, horticultural and agricultural sectors to 1 million tonnes by 2006.

7.12 The estimated cost of the programmes is £45 million over 3 years. The programmes could be run by WRAP, building on their current role in developing markets for compost and drawing on their extensive expertise.

7.13 This would contribute towards meeting DEFRA's PSA target of 25% recycling and composting of household waste that cannot be composted at home by 2005/6.¹²⁵

¹²⁵ Spending Review 2002

Figure 17: Two Investment Measures to Expand Recycling and Composting

Measure	Aims	Rationale	Estimated Cost	Benefit/Impact
<p>1. Advice to local authorities on the implementation and improvement of kerbside collection, particularly for organic waste, through a Kerbside Taskforce (KTF) service to local authorities.</p>	<ul style="list-style-type: none"> To give direct advice to local authorities; to deliver training to recycling/composting managers. 	<ul style="list-style-type: none"> WRAP is currently piloting a national training programme for recycling managers as part of the Quality Sourcing Initiative. Even at this early stage, it is clear that there is a strong demand from local authorities for more intensive expert advice and support to assist them in devising and implementing successful kerbside collection programmes. The role of the KTF is advisory but it would work alongside the roll-out of the Challenge Fund and other government initiatives. 	<p>£7 million over 3 years.</p>	<ul style="list-style-type: none"> The KTF would be available to local authorities for up to 30 person days/year on an application basis. Criteria would be developed for provision of support, based on local authority need, current performance, likely resources available to them and potential tonnages recycled/composted to secure maximum leverage in raising recycling/composting rates.



Figure 17: Two Investment Measures to Expand Recycling and Composting (continued)

Measure	Aims	Rationale	Estimated Cost	Benefit/impact
<p>2. Expansion of markets – priority on organics</p> <p>WRAP has developed an outline Organics Material Programme, key elements of which are:</p> <ul style="list-style-type: none"> ● capital competition for investment support for additional, large scale primary processing capacity; ● Business Development initiative for smaller-scale emerging composting businesses; ● continued development of Compost Standards to underpin expansion of end-markets for composted products; ● marketing and product development activities with the landscaping and horticultural sectors. 	<ul style="list-style-type: none"> ● To double the market share of compost into landscaping and horticultural markets by 2006; ● increase by 17% the utilisation of compost in agriculture; ● 30 new business start-ups in composting. 	<ul style="list-style-type: none"> ● A broad cross-section of WRAP stakeholders have repeatedly argued for a specific programme to address organics issues. ● Organic collection systems and the link with home composting will be a vital component in reducing biodegradable material sent to landfill. ● There would be a strong link to best practice activity in collection – the Kerbside Taskforce (see above). 	<p>£36 million over 3 years.</p>	<ul style="list-style-type: none"> ● 1 million tonnes per annum additional compost produced from local authority organics collections.



Recommendation 17:

WRAP should take forward two measures to increase recycling and composting through the provision of advice to local authorities on kerbside collection infrastructure and support for the expansion of markets in recyclable materials.

Priority 3: improving the information and advice available to households and industry

Households: what's needed?

7.14 The level of awareness of waste in the UK is very low. As noted in Chapter 4, a recent MORI survey found that only 7% of respondents saw waste as a key environmental issue unless prompted. However, 94% said they were concerned about the disposal of society's waste.¹²⁶ It also demonstrated that there were many misconceptions about waste, and that if the facts were explained to them, people would be more receptive to various waste measures that they would not intuitively accept.

7.15 Many national campaigns have already been led by the National Waste Awareness Initiative (NWAi). However, awareness of waste remains low so it is not clear that a further large-scale generic campaign would in itself be effective. There is a stronger case for continuing education and awareness through more targeted and focused practical messages in parallel with the roll-out of specific schemes and programmes.

7.16 To support the strategy recommended in this report and to tackle awareness and attitudes – one of the key identifiable barriers set out in chapter 4 – it is recommended that two measures are taken forward:

1. a national programme to raise public awareness of waste issues, building on the 'Rethink Rubbish' brand used by NWAi; and
2. a series of issue-specific programmes to support the related programme activity in waste minimisation and kerbside recycling at local level (set out in recommendations 16 and 17).

7.17 Good practice from other countries indicates a significant level of spend per capita on waste awareness would offer good value for money in support of government objectives for waste. For example, Canada spends the equivalent of about 45 pence per household per year. A well-designed campaign is estimated to cost £30m over 3 years.

Households: what could it achieve?

7.18 It is difficult to assess the direct impact of educational programmes, as the effects are generally combined with other policy changes. For example, the WasteWatch campaign to promote garden waste collection raised recycling rates by up to 10% and the Rethink Rubbish road show increased paper recycling by 9%. In order to achieve maximum impact, each education/awareness activity will need to ensure that:¹²⁷

- key audiences are identified and clearly understood;
- messages are clearly defined, taking account of lessons from past awareness programmes; and
- monitoring and evaluation of impacts is comprehensive and sustained with appropriate feedback to programme design.

Recommendation 18:

WRAP should promote education and awareness of waste issues through a programme of national and targeted local or issue-specific campaigns related to waste minimisation and recycling.

¹²⁶ MORI research report for SU: www.strategy.gov.uk/2002/waste/downloads/mori.pdf

¹²⁷ WRAP Delivery Plans, 11 October 2002



Industry: what's needed?

7.19 Since around 50% of waste is generated during the production process,¹²⁸ effective

action at this stage can have major impacts on waste volumes. The ways in which industry can reduce waste are shown in Box 28:

Box 28: Producers, retailers and waste reduction

- more efficient use of raw materials and leaner production processes;
- eco-design to ensure products are more recyclable and friendlier to the environment;
- design for upgradeability/ease of repair where practicable;
- taking more responsibility for their products e.g. through producer responsibility obligations (whether statutory or voluntary) – which is progressing as a part of EU legislation; and
- reduction in the packaging/waste passed on to households.

7.20 Some of these are already being progressed, but the need for an overarching source of information for industry has already been recognised through the creation of

Envirowise. Envirowise has been successful in helping businesses to reduce costs through waste minimisation measures (Box 29).

Box 29: Envirowise

Envirowise is a government sponsored programme that offers free, independent advice to industry on minimising waste, and adopting cleaner, cost efficient technologies to transform turnover into profit, and reduce reliance on landfill through more sustainable waste management. The programme achieves this through the provision of sector tailored tools (including seminars, case studies, guides, a web site and a Helpline).

Envirowise has a target of helping companies to save £10 per year for every £1 of programme expenditure. Research has shown that industrial companies can typically save about £1,000 per employee through waste minimisation programmes. By 31 December 2001, Envirowise had achieved total cost savings to UK industry approaching £180 million.

Examples of the support Envirowise gives businesses include:

Example 1:

Service Business Forms Ltd employs 32 people and designs and prints business stationery. It decided to join the West Midlands Waste Minimisation Project. A team of employees investigated how to reduce paper use and waste during major product runs. They identified ways to reduce the amount of virgin paper being used and the waste going to landfill. Implementing the findings reduced the amount of paper used by 21 tonnes per year. This reduction in waste saves the company £24,000 per year. [Envirowise Case Study CH116 Process Improvements Reduce Paper Waste.]

¹²⁸ Robin Murray – Zero Waste – Greenpeace Environmental Trust



Box 29: Envirowise (continued)

Example 2:

Some wastes are unavoidable but can be recovered to be re-used on site. The Electronic Controls Division of Stadium plc employs 180 people and manufactures electronic assemblies and injection moulded plastics. Stadium became concerned about the high cost of new solder needed to replace that lost in dross. They tested on-site solder recovery and found that the recovered solder met their specifications. They now recover 3600kg of solder from their waste dross and are saving £11,500 per year in avoided purchase costs. [Envirowise Case Study CS319 Solder and Cost Recovery from Dross.]

Example 3:

One way of reducing waste is to reduce the amount of material in a product, so there is less to dispose of when it is finally discarded. Fulleon Ltd is a leading supplier of elements for fire alarm systems, employing 170 people in South Wales. In March 1999, Fulleon decided to redesign its 'break-glass' call point product. A cross-functional design team was set up to look at all aspects of the product design. The new design has reduced the number of parts from 17 to 11 and reduced plastic consumption by 27%. It is also quicker to manufacture and assemble. Manufacturing costs have been reduced by £92,000 per year, with a payback period of just over a year. The new design was also the first product to gain certification to a new European standard for manual fire alarm call points. [Envirowise Case Study CS326 Product Redesign Cuts Materials and Costs.]

Further details about Envirowise are available on their web site: www.envirowise.org.uk

7.21 However, while Envirowise has reached up to 90% of companies in the areas where it has concentrated, only about 5% of UK companies are aware of the programme. The impact of Envirowise could be increased by expanding awareness (and hence use) of the programme, possibly through targeted marketing campaigns directed at companies with more than 10 employees. Envirowise estimate that awareness of the programme amongst companies could be increased to at least 20% within two years. Increasing the regional focus of Envirowise through closer links with the RDAs, Business Links and Local Enterprise Councils would also help raise the programme's profile. An increase in resources would allow Envirowise to offer more individual support to companies; to play a

larger role in skills enhancement in the workforce; and to offer better support to waste minimisation clubs. It might also enable Envirowise to expand coverage to other sectors including agriculture and construction.

Industry: what could it achieve?

7.22 It would be feasible to extend Envirowise's coverage to up to 20% of all UK companies. This would help improve business efficiency and reduce waste arisings with consequent economic and environmental benefits.

Recommendation 19:

The role of Envirowise should be expanded so its coverage is extended to 20% of UK companies over the next 2 years.



Priority 4: improving the research and data available to government, local authorities and the waste industry

What's needed?

7.23 Chapter 4 set out the key research and data gaps. Some of these gaps will be filled by:

- a forthcoming review of the Municipal Waste Management Survey by DEFRA;
- a forthcoming National Household Waste analysis programme by the EA. This will provide information for local authorities on the biodegradable content of municipal waste and the household behaviours that influence recycling.

7.24 As part of its regulatory role, the EA has responsibility for the collection of data for monitoring purposes. It also puts the EA in a strong position to lead on major areas of data collection and in the co-ordination of research. In carrying out this role, the EA should:

- be resourced with the right mix and level of skilled statisticians and analysts;
- be able to liaise effectively with other major users of data, namely government departments; and
- disseminate available data, and lead discussion and peer review on major pieces of data and research in consultation with DEFRA.

What could it achieve?

7.25 Good quality data on waste is vital to:

- formulate strategy;
- monitor and evaluate performance of the strategy;

- design specific policy interventions; and
- understand the role that waste plays in the economy and how it is integrated with other policy areas.

Recommendation 20:

DEFRA and the Environment Agency should jointly draw up a data and research strategy for the next three years to identify and fill key data and analytical gaps

Priority 5: promoting new technologies

What's needed?

7.26 As landfill diminishes in importance, and if the development of incineration continues to make slow but steady progress, new options will need to be developed and tested in the medium term for dealing with residual waste. Several alternative technologies are already employed in other countries but have yet to be introduced into the UK. For example, MBT is used extensively in Germany and Austria but its introduction in the UK is recent and as yet on a small scale. Advantages of the MBT process¹²⁹ include:

- reducing the volume of waste and therefore the landfill void space taken and the cost to the local authority of disposal;
- reducing the biodegradable element of waste and therefore the production of methane; and
- enabling good quality metals to be recovered for recycling.

7.27 The SU commissioned a comprehensive survey¹³⁰ of new and emerging technologies to assess the current state of development and potential deployment of alternative technologies. This also looked at existing technology, including incineration. Figure 18 gives a simple guide to the options.

¹²⁹ See Annex G

¹³⁰ McLanaghan (2002) www.strategy.gov.uk/2002/waste/downloads/technologies.pdf



7.28 The Government needs to ensure that there is an economic environment that provides adequate incentives for the development and take-up of these new technologies both to provide more alternatives to landfill for managing residual waste, and to offer England a wider variety of waste management options for the future.

7.29 However, there are a number of potential barriers to the take-up and development of new technologies:

- higher costs relative to landfill;
- local authority purchasing rules; and
- risk aversion.

7.30 Some of these barriers can be addressed through other recommendations in this report (e.g. a rise in landfill tax). The Government has a role in ensuring that there are no major barriers to development so that local authorities can have maximum freedom to develop the most appropriate waste management systems for their area.

7.31 New technology development can be addressed in a number of ways to tackle the barriers set out above. These include:

- financial support to reduce risks;
- pilot or demonstration projects; and
- co-ordinating or disseminating expertise and advice.

7.32 The availability of EU funds to support new technology should be investigated. Other member states have funded small-scale capital investment in this way. Given the long lead times in planning and acquiring new capital, this should be taken forward immediately by DEFRA and DTI.

What could it achieve?

7.33 New technology opens up potentially cheaper and/or cleaner ways of managing waste.

Recommendation 21:

DEFRA and DTI should take forward a programme of advice on and development of new technologies including pilots for more innovative waste management practices in partnership with industry and local authorities.



A Mechanical Biological Treatment (MBT) plant in Edmonton, Alberta, Canada – photo courtesy of Edmonton City Council, Alberta, Canada

Figure 18: Summary Review of Available and Developing Technologies for Municipal Solid Waste (MSW) Management

Waste Management Technology	Description & development status	Economics	Design to commissioning timescales	Biodegradable Municipal Waste (BMW) diversion role and environmental benefits	Environmental and health issues
Landfill	containment and stabilisation – employs proven technology	UK landfill tax low. Site-engineering & conditioning plan requirements raising costs	substantial consented UK void space, problems in some areas	no direct role – indirect from methane combustion. Future need will increasingly focus on MSW reprocessing residues	concerns: health effects & vehicle movements. Sub-optimal resource recovery option
BIOLOGICAL Composting	aerobic degradation of organic material – commercially developed	low-medium cost. Windrow technology exhibits clear economies. In-vessel technology is more modular	plants designed today should be on-stream by 2006-10	potentially significant role – returns biomass and nutrients to soil, reduces soil erosion, acts as a carbon sink and displaces natural peat & manufactured soil conditioners	concerns: Animal By-Products cross-contamination issues, odours and vehicle movements
Anaerobic Digestion	biological process in the absence of oxygen. Whilst trialed, not yet commercially proven in the UK on MSW	low-medium cost. Plant is somewhat modular requiring step-change for capacity increase	with right incentives, could be on-stream by 2006-10, subject to securing planning	potentially significant role – returns nutrients to soil, displacing manufactured fertilizers, acts as a carbon sink and produces a renewable energy	concerns: likely to mirror those for composting. Renewable bio-gas offers CO ₂ neutral combustion
Ethanol production	waste fermentation followed by distillation. Commercially proven in non-MSW applications	medium-high cost. First commercial MSW plant under construction – may become a test-bed	not as yet known where MSW is concerned – probably similar to process engineering facilities	potentially significant role – ethanol is a renewable energy source which can be used in existing hydrocarbon infrastructure, resulting in CO ₂ neutral combustion	public concerns likely to mirror those for any process engineering facility, or as per composting

Figure 18: Summary Review of Available and Developing Technologies for Municipal Solid Waste (MSW) Management (continued)

Waste Management Technology	Description & development status	Economics	Design to commissioning timescales	Biodegradable Waste (BMW) diversion role and environmental benefits	Environmental and health issues
THERMAL Mass-burn Incineration (MBI)	controlled combustion process – most developed waste treatment technology	significant economies with larger plant sizes	unpopularity resulting in long lead-times. Plants at design stage today are unlikely to meet 2006-10 target date	full bio-stabilisation, potentially significant role for residual BMW. Maximises overall recycling rates from residual MSW. Energy recovery (heat &/or power)	concerns: dioxins & local air quality deterioration (driven by poor perception), visual intrusion & vehicle movements
Advanced Thermal Treatment (ATT)	partial conversion of waste into intermediaries. Relatively unproven worldwide on non-uniform waste. UK pilots in progress	difficult to extrapolate from pilot plants. Currently expensive without wider (economic) incentives	probable more limited contribution to residual BMW streams this side of 2006-10	full bio-stabilisation, potentially significant role for residual BMW. Maximises overall recycling rates from residual MSW. Energy recovery (heat &/or power)	initial public concerns likely to mirror those for mass-burn incineration
HYBRID Mechanical-Bio Treatment (MBT)	ranging from bio-stabilised followed by landfill, through to more complex options. Proven: UK tested in progress	considerable economies envisaged on larger plants	use of residue for energy recovery – or landfill – could have an impact on overall timescales	provides bio-stabilisation & bulk reduction. Assists in maximizing overall recycling rates from residual MSW. Use of residue for energy recovery	concerns: bio-aerosols and odours, vehicle movements
MECHANICAL Clean Material Recovery Facility (MRF)	processing option: separates clean co-mingled recyclates. Commercially proven in UK	considerable economies can result from increased plant size	probably easiest waste management facilities to secure planning permission	no direct BMW diversion role – but offers an important material processing/bulking role	concerns: perception of dirty MRFs equating to poor standards, vehicle movements

Source: McLanaghan Dr S. *Delivering the Landfill Directive: The role of new and emerging technologies*



8. Funding and Delivery

Summary

Spending Review 2002 announced additional resources for waste. There is also potential for getting better value for money from existing sources of funding and to contain or reduce costs through investment and better management.

New funding and investment needs to be accompanied by reform of delivery structures.

Roles, responsibilities and accountabilities need to be clear and ensure maximum coherence between central policy-making and delivery at local level.

It is recommended that:

- co-ordination of waste policy at national level should be improved by strengthening the policymaking, technical, legal and other resources available to DEFRA;
- WRAP's role should be expanded so it can take on delivery of key elements of the investment package to reduce waste volumes and increase recycling and the education packages that go with this;
- delivery at local level should be strengthened by the creation of a taskforce to help local authorities gain access to best practice methods e.g. in contracting with the waste industry; and
- local authorities should be encouraged to work more effectively with each other and with waste companies and community groups.



The future costs of managing England's rising volume of household waste are very uncertain but clearly subject to upward pressure

8.1 Local authorities in England are estimated to spend around £1.6 billion each year on waste collection and disposal services.¹³¹ This is largely spent through contracts with the private sector

and, as set out earlier in this report, is dominated by disposal of waste at landfill sites. If policies remain unchanged, this expenditure will double over the next twenty years as a result of rising waste volumes.

Various commentators and analysts have attempted to estimate the cost to local authorities of meeting various targets over the medium term. These are shown in Box 30.

Box 30: The cost of reducing reliance on landfill

Ernst and Young(a) have estimated that additional investment of £600-700m per annum over the next 10 years will be required to reduce the volume of waste sent to landfill, sufficient to meet the Article 5 targets of the EU Landfill Directive.

A County Surveyor's Society(b) report has estimated future costs of waste management in the medium and long term. This analysis concluded that local authority expenditure might have to increase by 60% compared to 2001 in order to meet the 2005 Best Value recycling targets (25% of household waste recycled and composted by 2005) and by over 100% by 2013.

Waste Strategy 2000(c) estimated the additional costs over a baseline of different mixes of waste management options to meet the Waste Strategy targets. These ranged from £3.4 billion to £7.7 billion in present value terms.

(a) Ernst and Young Local Authority Waste Management Survey, 2001

(b) AEA Technology Waste Strategy Compliance Costs – Phase II, 2002

(c) DETR, Waste Strategy 2000, Part 2

8.2 Predicting the future cost of waste management is, of course, highly dependent on the assumptions made. The SU estimates that the cost of implementing the strategy set out in this report would not be significantly different from doing nothing over the 18 years to 2020 – less than £3 billion more in present value terms: £26.7 billion versus £29.6 billion.¹³²

8.3 The least value for money option is making no change. Environmental damage will continue and potentially valuable resources will continue to be squandered. The costs of managing the municipal waste stream will double by 2020, the UK could face fines from the EU for failing to meet its international obligations, and more landfill sites and incinerators will be required.

¹³¹ Estimated. Latest out-turn figure is £1.5 billion in 2000/01, CIPFA

¹³² SU analysis. These figures differ slightly from those presented in Figure 10 in chapter 5 and result from incorporating more information into the analysis of 'status quo' and the package of SU recommendations

Pressures for increased spending on managing and disposing of household waste can, in part, be dealt with by making better use of existing resources

8.4 There are currently five main funding routes for waste management. It is important that best use is made of each.

1. Local Government Standard Spending Assessments: the EPCS block

8.5 The main source of funding for local authority waste services is through the Environmental Protection and Cultural Services (EPCS) Standard Spending Assessment (SSA). This SSA is not a limit on local authority expenditure on these services, but is the means by which government distributes resources to local authorities.

8.6 The EPCS SSA provides for a wide range of local authority services including libraries, local transport and flood defence, as well as waste. In total, the provision for the block is:

2002/3	2003/4	2004/5	2005/6
£8,961m	£9,435m	£9,703m	£10,024m

8.7 This provision includes the following increases announced in the Spending Review 2002.

2003/4	2004/5	2005/6
£82m	£350m	£671m

8.8 Provision for waste services is not separately identified within the total.

2. The Waste Minimisation and Recycling Fund: "The Challenge Fund"

8.9 Announced as part of the 2000 Spending Review, this Challenge Fund is designed to support better waste management practices including waste minimisation, re-use and recycling. In November 2001, DEFRA consulted local authorities and other interested parties on the distribution of £140m available to the fund in England.

8.10 For 2003/4 a total of £76.3m will be available for projects. An expert panel evaluates the bids. Project categories include:

- partnership working;
- turning around low performance;
- high performance innovation and best practice;
- developing community initiatives; and
- general projects

8.11 Whilst this scheme has not been without its problems, notably allocation of funds for 2002/3, it remains an important means of providing support for waste management. Efforts need to be made to ensure that sufficient weighting is given to waste minimisation projects as well as recycling projects. Building on the challenge elements in the fund, consideration should be given to open up some of these funds to the private sector to tackle municipal waste.

Recommendation 22:

The Challenge Fund should be retained with consideration given to opening up the fund to bids from the private sector either independently or in partnership with local authorities to tackle municipal waste.



3. The Private Finance Initiative (PFI)

8.12 PFI is one of the mechanisms through which local government funds investment in waste services and improves the value for money that they get from existing expenditure. To date, 5 waste PFI projects have been signed and a further 5 are in procurement.

8.13 Waste PFI projects in the past tended to focus on funding incineration projects. In September 2000, DEFRA re-issued the criteria that they use in selecting PFI projects. These criteria placed much greater emphasis on recycling than had been the case in the past and required that any new incineration proposals demonstrated that they did not crowd out recycling. Since the waste PFI criteria were revised in September 2000, DEFRA has approved two further applications with a value of £62m that will provide infrastructure for local recycling.

8.14 Government has increased the resources provided for waste PFI projects in recent years. Spending Review 2002 provided PFI credits of £355m for waste PFI projects from 2003/4 to 2005/06.

8.15 The interpretation of the September 2000 criteria and the need to adapt projects that were in development at the time, has meant a slow throughput of projects to procurement and some uncertainty in the market. DEFRA also underestimated the resources that were needed to fully implement the September 2000 criteria and to develop waste PFI solutions. Recognising this, DEFRA have now set up a Waste PFI delivery panel of key central and local government interests to consider in detail what can be done to improve the flow of PFI projects.

Recommendation 23:
DEFRA should accelerate the current programme of work to improve delivery of waste PFI projects.

4. The Landfill Tax Credit Scheme (LTCS)

8.16 Under the LTCS, registered landfill site operators may allocate up to 20% of their landfill tax liability for the year to fund approved environmental projects. Not more than 90% of the costs of these projects may be met by this funding; the remainder of the cost must be funded from other sources. These projects are administered through environmental bodies approved by ENTRUST, the private sector regulator of the LTCS. Some £400m from the scheme has so far contributed to environmental projects.

8.17 The scheme has not been without criticism.¹³³ This has centred on its complexity, the potential for fraud or conflicts of interest, whether the waste industry has too much influence over the scheme and poor arrangements for evaluating outcomes.

8.18 The current target of directing 65% of LTCS funds specifically to waste projects is being met, but without reference to strategic objectives or value for money. There are also concerns over transparency. In April 2002, DEFRA and HM Treasury published a consultation document outlining possible changes to the LTCS. These ranged from retaining the scheme as it currently exists to its replacement in whole or in part by public spending. Whilst there was a considerable degree of support for retaining the current scheme (over 80% of respondents) there was also support for a more strategic approach to sustainable waste management objectives.

Recommendation 24:
The LTCS should be reformed to adopt a more strategic approach to waste. This could be done by transferring around two-thirds of current funds into a public expenditure

¹³³ See for example *Landfill Tax Credit Scheme* – House of Commons Public Accounts Committee 47th report. Also Financial Times, 25 July 2002 – *Landfill Tax Credit Scheme Lacks Accountability*



scheme to tackle priority areas for investment in waste management. One third of funds should remain under the current scheme.

8.19 Five priority areas for investment in waste are set out in chapter 7, together with details of how these can be taken forward and their expected outcomes. The five areas cover:

- I. reduction in the rate of growth in waste volumes;
- II. expansion and development of collection systems and markets for recycling;
- III. provision of better information and advice to households and business;
- IV. improvement in the quality and range of data and research on waste; and
- V. promotion of new technologies and approaches to waste management.

5. New Opportunities Fund (NOF)

8.20 The current round of the New Opportunities Fund (lottery funds) will provide £38.7m for England for community sector waste re-use, recycling and composting projects. The directions for the programme were agreed 18 months ago. These funds are likely to be committed by 2003/4.

8.21 The community sector plays an increasingly important role in waste management at a local level. There are several hundred not-for-profit SMEs and many more voluntary groups and societies operating 1.2 million household kerbside collections.

New investment and better management could also help to reduce the costs of managing and disposing of waste

8.22 Ways in which the costs of managing and disposing of waste could be reduced include:

1. Reducing the volume of waste produced

The recommendations in this report that will contribute to reducing waste growth and associated expenditure are:

- the waste minimisation programme led by WRAP (recommendation 16);
- producer responsibility initiatives (recommendation 2); and
- introducing greater incentives for households to curtail the waste they produce (recommendation 1).

2. Reducing the unit costs of recycling and composting through market expansion and development

In broad terms, a doubling in volumes handled by the recycling industry could reduce unit costs by around 15%.¹³⁴ The recommendations in this report that will contribute to reducing unit costs are:

- advice on best practice kerbside collections, led by WRAP (recommendation 17);
- expanding the markets for compost and recyclates, led by WRAP (recommendation 17); and
- more bring and better designed civic amenity sites (recommendation 17).

¹³⁴ SU analysis of segregated kerbside collections based on research by J Hummel



3. Improving local service delivery

Local authorities can reduce costs by:

- looking carefully at the efficiency of different collection systems; and
- introducing a charging mechanism, e.g. at civic amenity sites, where small businesses use the service and contribute to the municipal waste stream.

Any increase in landfill tax revenue could provide vital funding for new investment

8.23 A rise in landfill tax to £35 a tonne, discussed under recommendation 11, would raise a significant revenue stream. The proceeds could be redirected back to local authorities and business (including, for example, Envirowise) and used to promote investment in alternative methods of waste management.

8.24 For business, this should minimise any upward pressure on business costs and ensure that competitiveness is not undermined. For local authorities it could support investment in new infrastructure and collection systems that are vital to realising the strategy laid out in this report.

Recommendation 25:
HMT, DEFRA and other government departments should consider how tax revenues might best be redirected to incentivise investment in reduction, re-use and recycling.

New funding and new investment need to be accompanied by reform of delivery structures

8.25 If more resources are to be spent on waste, then delivery structures must be reformed to ensure outcomes are delivered efficiently and progress is made in line with the strategy. It is clear that lack of delivery over a number of strategies and administrations¹³⁵ is due in part to the complex structure of government responsibility for waste policy and waste services.

A potential framework for delivery

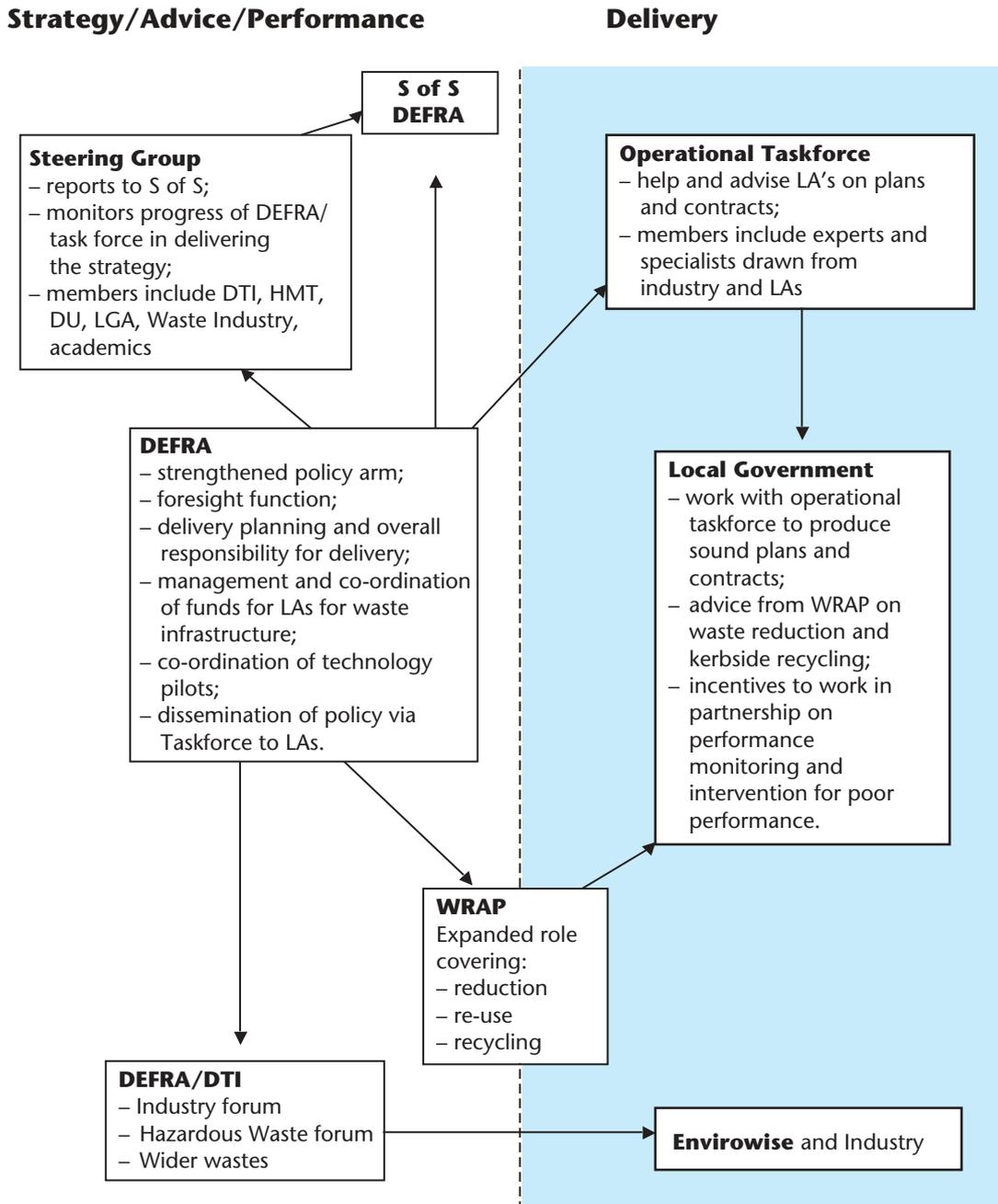
8.26 The essential elements of an effective delivery framework are shown in Figure 19. This framework aims to:

- take forward the SU strategy;
- facilitate improved LA performance;
- co-ordinate funding more effectively; and
- boost the take up of wider options for waste management.

8.27 The remainder of this chapter summarises the framework and then describes each element and the associated recommendations. A more detailed version of required delivery structures has been developed jointly by DEFRA and the Delivery Unit. This is available on the SU web site as Annex K.

¹³⁵ At least since *This Common Inheritance* op.cit 1990

Figure 19: A new framework for the delivery of waste policy and waste services





8.28 In summary, the main features of the structure are:

For improved strategy and policy:

- a strengthened role for DEFRA

For improved delivery on the ground:

- an operational taskforce that helps local authorities to improve the effectiveness of their waste management and meet targets;
- an extended role for WRAP in waste minimisation, recycling and education and awareness;
- a new government-industry forum;
- an expanded role for Envirowise;
- incentives for local authorities to work together; and
- improving the planning process for waste facilities.

For improved performance:

- a Steering Group reporting to the Secretary of State for DEFRA; and
- performance measures for local authorities.

Improved strategy and policy

8.29 DEFRA will need to be strengthened if it is to put more effort into policy dissemination, dialogue and delivery. The key responsibilities of DEFRA should be:

- policy-making on all waste issues;
- responsibility for negotiations in EU;
- foresight planning, specifically on upcoming waste issues and the direction of EU waste policy;
- dissemination of policy to stakeholders; and
- co-ordination of research into health effects of waste management options.

8.30 In order to do this effectively, the waste function in DEFRA should have a dedicated policy unit, supported by a greater level of legal advice, a waste delivery unit and a team of technical experts. DEFRA should ensure that resources are fully available to support this function.

8.31 This should help to achieve:

- a more proactive approach to waste at the centre of government;
- more effective management of waste funds; and
- more timely implementation of directives.

Recommendation 26:

There should be a strengthening of waste policy-making, strategic planning, technical, legal and other services available to DEFRA. DEFRA should carry out a review to assess the scale of the resources required.

8.32 Responsibility for responding to some EU waste directives is split between DTI and DEFRA, as both Departments have major interests. However, stakeholders outside government are sometimes confused about who leads and the respective roles of DEFRA, DTI and the EA in disseminating and interpreting waste policy.

Recommendation 27:

A review should be undertaken to assess the merits of focusing all waste policy in one Department.

Improved delivery on the ground

A delivery task force

8.33 There is wide variation in the skills of local authorities and their progress in developing waste plans.^{136,137} If additional resources are to be directed to waste, well-developed waste plans that meet local needs and national targets

¹³⁶ BIFFA, *Future Perfect*, (2002) and the Audit Commission, *Waste Management Guidance for Improving Services* (July 2001)

¹³⁷ The Audit Commission, *Waste Management Guidance for Improving Services* (July 2001)



will be required and then translated effectively into contracts with industry and/or community groups.

8.34 A taskforce comprising a mix of experts and specialists with practical experience of waste management, drawn from industry and local authorities, should be available to help local waste managers.

8.35 The main function of the taskforce would be to help local authorities to prepare sound plans for the investment in waste management infrastructure to meet national targets and local needs. This would include advice on contract design and negotiation. The taskforce would consist of a “nerve centre” in DEFRA and regional advisors and support specialists. Local authorities would be able to bid to DEFRA for taskforce time.

Recommendation 28:

A delivery taskforce to fill the gap between national policy and local plans should be set up to work with delivery teams in DEFRA and local authorities. This taskforce should be staffed predominantly by experts with a proven track-record in delivering waste management in local authorities, the waste industry and community groups, drawing on the expertise of the EA as required. The taskforce should also provide advice on contracting, and set up a website of best practice advice and details of approved waste consultants. DEFRA should work up criteria to ensure the most effective allocation of taskforce time.

An extended role for WRAP

8.36 In the short time since it was set up, WRAP has proven to be a successful organisation, commanding a great deal of respect at all levels across the waste industry. Building on this, its role should be expanded to focus on waste

minimisation, re-use and recycling alongside its existing focus on developing markets for recyclates.

8.37 Key recommendations in this report (Chapter 7) have set out the need for investment in priority areas that WRAP should take forward working with local authorities. In summary its functions would therefore become:

- providing advice on reduction, re-use and recycling;
- taking forward the waste minimisation programme and kerbside collection programmes including the associated education/awareness programmes (recommendations 16 and 17);
- helping LAs evaluate household incentive schemes (recommendation 1); and
- the co-ordination of national awareness campaigns on waste (recommendation 18).

Recommendation 29:

WRAP should be allocated additional funding to boost investment in waste reduction, re-use and recycling measures, as well as the development of recyclate markets.

Working with industry

8.38 A government-industry forum could provide a venue to discuss wider waste measures and producer responsibility issues, and help to bring various waste initiatives together. It could absorb the hazardous waste forum already set up by DEFRA.

Recommendation 30:

DEFRA/DTI, the Environmental Services Association, the Chartered Institution of Wastes Management and the CBI should set up a joint government-industry forum



An expanded role for Envirowise

8.39 Recommendation 19 in chapter 7 set out the case for an extended role for Envirowise. An increased coverage of business and closer working with government agencies will provide a key element of the delivery framework.

Incentives for local authorities to work together

8.40 The fragmentation of local authorities' waste management into two distinct functions

of collection (at district level) and disposal (at county level) should be addressed to improve the effectiveness of the delivery of waste management.

8.41 The Project Integra model adopted by Hampshire shows that co-operation between local authorities can work well (see Box 31 below). There are also other examples in Warwickshire, Bedfordshire, and West Devon where joint working between districts has led to greater progress and more effective and efficient waste management.

Box 31: Project Integra, an example of partnership working at local authority level

Project Integra is the name given to the county-wide integrated waste management strategy being implemented in Hampshire. It is an example of how overall added value can be achieved through collaborative working:

- Risk and Investment Share: individual authorities (mainly districts and boroughs) share the increased risks of recycling and offset costs within the partnership. They benefit from access to advanced collection, processing and recovery systems that would ordinarily be outside the financial or 'risk' reach of most second tier authorities.
- Performance comparison: comparative assessments of different types of collection systems become significantly easier when made within the comfort of the partnership 'family'. It is often agreed that one partner authority will try a particular collection approach and the other partners receive detailed feedback on cost, take-up and performance. A good example of Best Value in action.
- Effective use of capital assets: through integrated partnership working, the Waste Disposal Authorities (Hampshire, Southampton and Portsmouth) have been able to focus and target new infrastructure (developed, built and operated) in line with detailed plans for accelerated collection systems. Joint working means that Members can ascertain and prioritise future expenditure and commitments based on an understanding of the 'whole picture.'
- Market Influence: considerable advantage has been gained by aggregating material volumes (plastic, paper, glass, metals) and securing contracts for supply at a price above that achieved by individual authorities working alone.

Further information about Project Integra can be found at: www.hants.gov.uk/integra



Recommendation 31:
DEFRA and ODPM should carry out a joint review to establish what further financial incentives might be put in place to encourage waste disposal and waste collection authorities to work together more effectively.

Current financial relationships could be improved by:

1. changing the basis on which collection authorities pay disposal authorities. There is currently a flat rate charge but changing to a rate per tonne would create an incentive to reduce waste for disposal;
2. reviewing the function and operation of recycling credits – the payment from disposal authorities to collection authorities for each tonne recycled – and considering expanding credits to incorporate waste reduction achieved by collection authorities.

Options for further incentives are:

1. taking forward Joint Municipal Waste Strategies between collection and disposal authorities, as agreed and shown to be beneficial in Waste Strategy 2000. The delivery taskforce (recommendation 28) could help LAs produce good quality plans and avoid unnecessary duplication; and/or
2. agreeing pooled waste management targets between all collection and disposal authorities.

8.42 In addition, DEFRA and ODPM should consider:

1. waste disposal authorities requiring waste collection authorities to deliver waste separated for recycling to particular sites;¹³⁸ and

2. where waste is managed in two tiers, consider the combination of collection and disposal functions into a single ‘resource management authority’ over the next 3-5 years.

Improving the planning process for waste facilities

8.43 An effectively functioning land use planning system is essential to secure best use of land and location of facilities. This will become increasingly important in the future as more waste facilities are required to deal with growing waste volumes and diversion from landfill.¹³⁹

8.44 General improvements to make the planning system faster and more consistent are being addressed by the ODPM’s review of the whole planning system.¹⁴⁰ These general improvements will in part address the problems associated with waste (summarised in Chapter 4). The emphasis on improved local plans (recommendation 31) will also help industry to be aware of, and plan for the timescales involved. However, there remains a need to address issues that affect waste specifically.

8.45 These can be addressed through a revision of Planning Policy Guidance (PPG10 provides guidance on waste) that will be updated as part of ODPM’s review.

Recommendation 32:
ODPM and DEFRA should discuss and revise PPG10 as a priority to ensure all required waste facilities can proceed.

¹³⁸ Waste Disposal Authorities (counties in rural areas) have the power to direct the district councils in their area, who collect waste from householders and others, to deliver the waste they collect to particular sites. In Waste Strategy 2000, the Government announced that it would extend this power so that disposal authorities could require certain wastes to be delivered to them separately from other wastes so that they can be recycled

¹³⁹ Recycling and composting facilities are smaller relative to thermal treatment and landfill, so an increasing number of planning applications for waste facilities can be expected in future. Material Recycling Facilities (MRFs) can generally handle between 25,000 to 50,000 tonnes, composting facilities between 5,000 to 50,000 tonnes, and thermal treatment plants can range from 50,000 to 400,000 tonnes

¹⁴⁰ Being addressed through the reforms to the planning system indicated in ODPM’s statement *Sustainable Communities: delivering through planning* which was published on 18 July 2002. The aim is to speed up the planning system and make outcomes more predictable



The revision should cover:

1. guidance to ensure that conditions to lessen any health impacts of a waste facility are dealt with in granting a pollution control permit rather than within the planning permission process (this happens, for example, for telephone masts). There should also be clarification of which other issues are for the pollution control permit rather than planning;
2. guidance on the requirement to keep development plans up to date; and
3. an expectation that local authorities should give reasons when they turn down a specific application which conforms with their plan. If their reasons are site or facility specific they should make these clear and retain them for any future application.

8.46 As part of this revision, consideration should be given to designating specific sites in the local plan for locating waste facilities in advance of individual planning applications. This would have the advantage of speeding up the planning process. On the other hand, it could delay the whole plan, and identification of sites in advance may blight land and prevent any development in the vicinity.

Improved performance

A Steering Group reporting to the Secretary of State

8.47 In the short to medium term, there needs to be a driving force for co-ordinating all the recommendations in this report. Waste Strategy 2000 was followed up by a monitoring and evaluation group that no longer exists. In order to make progress, a high-level and high-powered body to drive forward implementation of the strategy in this report is required.

8.48 A high level steering group that reports to the Secretary of State and chaired by a senior external figure should be set up. It should comprise around 10 senior figures able to address delivery, strategy and performance issues from government, the EA, the waste industry, the community sector, local government, WRAP and academia. A core of the current SU Waste Advisory Group might provide some of the members for this group.

Recommendation 33:

A high-level steering group, chaired by a senior external figure and reporting to the Secretary of State for the Environment, Food and Rural Affairs should be set up to drive forward the recommendations in this report.

Performance of local authorities

8.49 Over 100 local authorities say they will fail to meet their statutory waste targets. If additional resources are directed to waste management, then an appropriate performance framework must be in place to ensure that progress is made.

8.50 The Local Government White Paper¹⁴¹ sets out an approach to address all aspects of service performance. Outcomes are assessed through the new Comprehensive Performance Assessment (CPA) that includes an analysis of Best Value Performance Indicators (including nine indicators for waste), inspections and corporate service planning systems. Improvements identified by the CPA are set out in its Best Value Performance Plan. Chapter 6 set out the reasons why the Best Value indicators for waste management provide conflicting signals for local authorities. Making the appropriate changes will therefore enhance the CPA process applied to waste. An additional consideration is whether this is enough or whether waste should be given a higher priority within this process, albeit for a limited period.

¹⁴¹ DETR, *Strong Local Leadership – Quality Public Services*, (2001)



Recommendation 34:

ODPM and DEFRA should ensure that Best Value Indicators support waste reduction and recycling and that realistic penalties and incentives are available for LAs to meet waste targets.

Options are:

1. enhancing the existing Comprehensive Performance Assessment by making the Best Value Performance Indicators for waste consistent and in line with a reduce-re-use-recycling strategy and possibly placing more emphasis on waste aspects of performance, at least for a short period;
2. a performance reward grant that provides a positive incentive by linking funding in part with achievement of a certain target – for example on statutory performance standards for recycling – and in part through an advance allocation of resources to take account of the up-front costs and effort required to meet the target;
3. fines could be levied on poor performers. However, this could have an adverse impact if LAs subsequently reduced their waste spend; and/or
4. for high performing authorities or the waste industry to take over the management of the waste function in poor performing authorities.

9. SUMMARY OF KEY RECOMMENDATIONS AND ACTION PLAN

Summary

- Successful implementation of the strategy and measures in this report requires a clear action plan.
- For each recommendation, this chapter sets out who should have lead responsibility, what the timetable for implementation should be, and how success should be measured in each case.
- The Secretary of State for the Environment, Food and Rural Affairs should have overall long term responsibility for the implementation of the strategy

9.1 Figure 19 summarises the key recommendations in this report and the order in which they need to be carried out. The key is to signal the changed economic framework, provide time, funds and incentives for new waste treatment methods to develop, and then, if necessary to provide incentives or regulation to boost the use of the new infrastructure.

The table of recommendations gives more detail of the actions to be taken, who is responsible for them and how progress is to be measured.

The key recommendations in this report are:

1. Economic and regulatory framework

- freedom for LAs to introduce household incentive schemes to encourage waste reduction and recycling, if they wish to do so;
- extend voluntary producer responsibility for waste reduction and recycling;
- incentives for the re-use of goods;
- economic instruments to encourage environmentally friendly products to reduce hazardous/non-recyclable waste;
- promote use of secondary resources;
- raise the landfill tax to £35 a tonne in the medium term;
- make space in new housing developments for storage for recycling;
- increase government green procurement;
- new targets for waste minimisation/disposal;
- review the case for banning the use of landfill/incineration for some materials in 2006/7;
- higher fines and more rigorous enforcement of fines for fly-tipping; and
- keep the case for an incineration tax under review.



2. Strategic investment measures

- waste minimisation measures – including extension of home composting;
- roll out kerbside recycling to the majority of households, and increase the number of bring sites and well designed civic amenity sites;
- information and education campaigns to support these programmes;
- better waste data; and
- incentives for the take up of the wider range of technologies that exist.

3. Funding and delivery

- the Challenge Fund should be retained and opened up to the private sector;
- the LTCS should be reformed to provide more support for the strategic waste investment measures outlined in this report;
- DEFRA's waste management function should be strengthened;
- a multi-disciplinary operational task-force should be set up to help local authorities deliver;
- the role of WRAP should be extended to minimising and recycling waste (focusing on organics) as well as boosting recycle markets;
- improved incentives are needed to encourage tiers of local authorities and adjacent local authorities to work together to increase efficiency and realise economies of scale;
- ensure the planning system and associated guidance can deliver the new facilities that will be required;
- set up a high level steering board to drive forward implementation; and

- ensure that the full range of appropriate interventions are used when local authorities fail to deliver on their waste plans and targets.

Key actions needed between now and 2005

- decide the phasing of increases in the landfill tax and how tax revenues will be recycled to assist industry and local authorities move to more sustainable waste management;
- make decisions on an incineration tax;
- agree adequate resourcing of the strategy set out in this report and the allocation of reformed LTCS and other funding streams;
- put in place the multi-disciplinary operational task force to help local authorities deliver;
- expand WRAP's role and fund its programme of reduction, re-use and recycling and the education that goes with it;
- expand the role of Envirowise for commercial waste;
- adequately resource waste management in DEFRA; and
- invest in the infrastructure required to deliver the SU plan.

Key decision points/milestones

9.2 Waste Strategy 2000 is due to be reviewed in 2005. The key decision point will be 2010. If we have made no significant progress by then, very urgent and costly action will be required to meet the EU Landfill Directive by 2020.

9.3 Key milestones will be:

- progress in reducing waste growth by end 2006;



- achieving a household recycling rate of 35% by 2010 and 45% by 2015; and
- achieving the 2010 Landfill Directive target.

Implications of failure to make progress

- waste will continue to grow, meaning costs will rise and the inevitable transition to a more sustainable waste management system will cost more;
- EU fines of £180m could be levied;
- more landfill sites and incinerators will be needed; and
- the UK will face more waste crises, as occurred with fridges, due to its slow progress in developing alternative waste management options. This could transfer the costs of managing commercial wastes to local authorities.

Overall responsibility for this report

9.4 The Secretary of State for the Environment, Food and Rural Affairs should be the Ministerial Champion for the strategy and measures in this report. In the short term, however, a Ministerial Group reporting jointly to the Secretary of State and the Chief Secretary to the Treasury should develop the public expenditure programmes and institutional arrangements needed to implement the report's recommendations.

Summary of key recommendations and action plan

It is mainly the role of DEFRA to take forward and monitor the recommendations of this strategy. The table below summarises these actions and lists the other lead departments/organisations who would need to be involved in taking them forward.

Where appropriate, the recommendations will need to be subject to a Regulatory Impact Assessment.

Key (w) = recommendations that may impact on the better management of wider wastes in addition to municipal waste

* = recommendations likely to have a significant impact on the waste management of the Devolved Administrations

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 1: Local authorities that wish to take forward household incentive schemes to help reduce waste volumes and increase recycling should be allowed to do so.	Benefits: It rewards those households who reduce and recycle waste. It reduces costs, boosts recycling and therefore the number of extra landfill sites, incinerators and other facilities required. It allows households to reduce their bills. Factors for LAs to consider when taking up incentive schemes: – need composting/recycling infrastructure in place; – needs to be accompanied by education and safety net for low income families; – ideally conduct pilots first.	LAs to take up and try schemes.	As LAs wish but starting now.	DEFRA/ ODPM/LGA	LAs/WRAP	(i) 30% of collection authorities to have tried incentive based schemes by 2006. (ii) Reduction in rate of household waste growth to 2% per annum by 2006.
Schemes could include:						
Council tax discounts for households that home compost.						
Rewards/prizes for homes that recycle.						
Variable charging schemes to reduce Council Tax – those who reduce waste and recycle pay less.						

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 2: DEFRA and DTI should extend voluntary agreements with industry to reduce waste and increase the use of recycled materials and the recyclability of products. (w)	Benefits: reduces waste and boosts recycling. Risks: voluntary agreements have not always been successful.	Examine the UK waste stream to identify areas where producer responsibility would make a big impact.	Study now. Aim for two new voluntary agreements per year.	Study to be carried out by DEFRA/DTI.	CBI/WRAP and Envirowise.	Addition of 2 new schemes per year and increasing targets on existing ones e.g. junk mail.
Recommendation 3: DEFRA and WRAP should consider the options for increasing incentives for re-use.	Benefits: less waste to manage, reduces costs, prolongs life-cycle of products. Risks: extra administration/transport costs.	Study now.	Pilots of selected areas in 2003.	WRAP/DEFRA.	Industry/ Retailers.	Successful pilots and implementation of at least two waste streams.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 4: HMT and DEFRA to consider the case for applying incentives such as economic instruments to encourage environmentally-friendly products. (w)	Benefits: increases demand for environmentally friendly products. Increases markets for 'green' products. Risks: burdens on sectors of industry if not signalled in advance.	VAT would need to be discussed in the context of renegotiation of the EU VAT Directive in 2003. Need to identify products for which green taxes are more appropriate than producer responsibility.	HMT to study options.	HMT/DEFRA.	DTI	HMT to develop effective economic instruments to increase demand for environmentally friendly product purchase.
Recommendation 5: DTI should work with DEFRA, WRAP, industry and the BSI Group to assess what more can be done to promote the use of secondary resources through BSI standards. (w)	Benefits: boosts the use of recycle through reducing recycling costs and removing artificial barriers to its use. Risks: none where this is practicable.	Assess what can be done to promote the use of secondary resources where appropriate, including reviewing areas of BSI standardisation where practicable, which may block the use of recycled materials.	Complete review by 03/04. Implement required changes by 05/06.	DTI/BSI group.	WRAP/ Envirowise DEFRA.	Change in standards. Less barriers to use of recycled materials. Greater use of recycle. Specifications to encourage use of recycle.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 6: ODPM should revise the building regulations to require the allocation of space in housing developments for accessible recycling facilities.	<p>Benefits: removes problem of storage space which is a major hindrance to recycling.</p> <p>Risks: slight extra costs to housing. Space will be used for other purposes.</p>	<p>Could apply to new housing developments with more than 50 houses.</p> <p>Allocate space within the development for recycling facilities.</p> <p>Housing Corporations to consider similar standards for social housing, and NHBC standards for private developments.</p>	Start now.	ODPM	WRAP/Housing Corporations/Construction Industry/LAs	New dwellings and estates have suitable storage and space for recycling facilities.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
<p>Recommendation 7: OGC and other Departments to finalise central government targets for the use of recycled materials. All Departments to also have in place a trained Green Procurement Officer. (w)</p>	<p>Benefits: expansion of markets for recyclates. Government departments meet targets.</p> <p>Risks: slight increase in costs until recycle falls in price, unless good economies of scale in purchase obtained.</p>	<p>OGC and other Departments to work through SPG (taking advice from WRAP) to set targets for purchasing goods with minimum recycled content. Recommend training for green procurement officers. Consider waste minimisation targets for office waste in the medium term.</p>	<p>Start now. Waste min targets by 2006/7</p>	<p>OGC, SPG.</p>	<p>WRAP, other government departments</p>	<p>More green goods procured by 2006/7. Higher percentages of waste recycled.</p>

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
<p>Recommendation 8:</p> <p>ODPM and the LGA to consider setting voluntary green procurement targets for local authorities to purchase more recycled goods, to minimise waste volumes and to encourage them to recycle more of their waste.</p> <p>(w)</p>	<p>Benefits: expansion of markets for recycle.</p> <p>Risks: could be a small initial cost increase.</p>	<p>ODPM and LGA to consider setting voluntary environmental procurement targets for local authorities and targets for them to reduce their own waste.</p> <p>Consider linking targets to implementing service area targets within Sustainability Action Plans or re-instating waste in Beacon status for councils.</p>	Now	ODPM/LGA	DEFRA/WRAP	<p>Higher % of green goods procured.</p> <p>Increase in recycling rates for local authorities' own waste.</p> <p>Re-instate waste in Beacon status.</p>



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 9: DEFRA together with ODPM, the Audit Commission and WRAP to develop proposals for alternative indicators that incorporate success in reducing waste volumes. New targets for local authorities should then be set to reflect the SU reduction and recycling strategy. e.g. (i) New targets – combined waste minimisation/ recycling targets for LAs. Waste minimisation targets to be statutory.	Benefits: motivates efforts on waste reduction. Risks: may be difficult to measure.	Once local authorities have more tools e.g. funds for home composting and variable charging.	Review 05/06. Targets set 05/06.	DEFRA/ODPM	WRAP/Audit Commission.	Reduction in rate of growth of waste per head in LA area.
e.g. (ii) New targets – set LAs targets for roll out of home composting.	Benefits: encourages households to reduce waste production. Means LAs don't collect green waste they do not need to at extra cost. Risks: people do not compost effectively.	50% of homes by 05/06.	Start now. Targets now.	DEFRA/ODPM	WRAP/Audit Commission.	Increase in effective home composting. Reduction in green/organic waste entering domestic stream unnecessarily.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 9: (continued) e.g. (iii) New targets – higher national recycling targets: 35% by 2010; 45% by 2015. (DEFRA to consider making these statutory later)	Benefits: encourages recycling. Risks: LAs pursue green waste that could be composted and increase waste growth.	A minimum of 45% by 2015 (up from 33%). Incentives for LAs that do even better.	Start now.	DEFRA/ODPM	WRAP	Recycling rates increase by more than 1% per annum to meet SU trajectory milestones (35% by 2010 and 45% by 2015).
e.g. (iv) New targets – consider the option of replacing recycling targets with targets to reduce residual waste or a balanced scorecard.	Benefits: one simple target meeting the needs of the strategy. Reduction in residual waste/landfill. Risks: defining residual waste clearly.	Could provide right signal in one target. Does not have the perverse incentive of high recycling targets i.e. growth in waste.	Start now.	DEFRA/ODPM	WRAP	Introduce targets that create the right behaviour and reflect where we wish to be. Reduce focus on disposal.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 10: DEFRA to encourage the development of quality standards for compost. These should inform DEFRA's position during any negotiations on an EU Bio-waste Directive. (w)	Benefits: composting is a major element of any recycling strategy. Risks: none.	DEFRA to draw up a bio-waste strategy and implement WRAP/ Composting Association standards. The strategy should also include a review of the potential to use compost for soil improvement.	By end 2003.	DEFRA	WRAP/ Composting Association	Expansion of markets for compost.
Recommendation 11: Raise landfill tax to £35 a tonne for active waste in the medium term. (w)*	Benefits: reduces reliance on landfill. Makes it economic to develop alternatives. Risks: revenue needs to be recycled to ensure alternatives are developed without significant impact on competitiveness/LAs.	HMT to decide timing and phasing of rise of landfill tax.	By Budget 2003.	HMT and C&E		Percentage and level of waste to landfill falls. Investment in alternatives to landfill increases.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 12: DEFRA and DTI to review the case for a ban on landfill or incineration of recyclable products or materials. (w)*	Benefits: boosts recycling and reduces disposal facilities required. Risks: danger if in place before recycling infrastructure and markets developed. Increases regulatory burden.	Consider a ban on the landfill of recyclates from 2006/7 in light of progress towards 2010 targets. Should not be required if kerbside rolled out and bring site density increases.	Review dependent on progress. Can be enforced once kerbside is in place and bring sites have been intensified.	DEFRA/DTI	EA	Increase in level of recycling. Reduction in landfill.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
<p>Chapter 6 – Economic and regulatory framework</p> <p>Recommendation 13: The Home Office/Lord Chancellor's Department should ensure that guidance directed to magistrates is sufficient to support more prosecutions for waste crimes. Strengthening deterrents should also be considered. (w)</p>	<p>Benefits: provides a more valuable deterrent as costs of waste rise. Risks: few are caught. Costs of court time. Could be mitigated, for example, by more on the spot fines and vehicle confiscation.</p>	<p>Prosecutions and fines for flytipping/dumping currently very low. Will need to increase as waste costs rise. LCD are taking forward legislation on more stringent fine enforcement as follow up to White Paper, "Justice for All". Ensure magistrates have sufficient guidance on the importance of imposing balanced fines. Consider other penalties e.g. vehicle confiscation/on the spot fines.</p>	Start now.	Home Office	LCD/Local magistrates/police	<p>Deterrent factor leads to a decrease in the amount of flytipping. Heavy penalties for those that are caught. Reduction in repeat offenders.</p>

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 6 – Economic and regulatory framework						
Recommendation 14: The case for an incineration tax should be kept under review. (w)*	Benefits: would send a clear signal about the intention to focus on reduction and recycling. More information needed to make the case.	HMT to conduct more work.	Now – decisions by 2004	HMT		
Recommendation 15: An independent body should bring together the literature and evidence on the relative health and environmental effects of all different waste management options, relative to each other and to other activities affecting health and the environment. (w)	Benefits: an independent body could bring together current best research for the use of local authorities and to provide a definitive and objective line on effects. Risks: does not resolve debate on health effects or address perceptions of risk. Leads to a freeze in development of all facilities whilst study is undertaken.	DEFRA to identify a suitable independent body, perhaps the Royal Society.	Now. Review completed by Summer 2003.	DEFRA	EA	Definitive and objective review of current knowledge available to all. Helps LAs to understand pros and cons, communicate risks to households.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 7 – Strategic investment measures						
Recommendation 16: WRAP should take forward four measures to reduce waste volumes.	Benefits: WRAP is well placed to manage this. Package will reduce waste growth, therefore saving money.	Four programmes for: extending home composting; reusable nappies; retailers' initiative; R&D Innovation Fund.	Fund now, programmes implemented from Spring 2003.	WRAP	DEFRA, LAs, Businesses, Retailers, Households	DEFRA, LAs Businesses, Retailers Households.
Recommendation 17: WRAP should take forward two measures to increase recycling and composting.	Benefits: boosts recycling, reduces level of incineration and landfill otherwise required. Risks: public do not take part as expected. Mitigate risk via: <ul style="list-style-type: none"> • education • well-designed schemes • incentives to recycle. 	A package of measures to improve bring site density, increase effectiveness of civic amenity sites and roll out kerbside recycling. WRAP to implement kerbside taskforce and market development programme. DEFRA will manage co-ordination of funds for LA infrastructure.	Fund and start now. WRAP, kerbside taskforce and market development programme from 2003/4.	DEFRA/WRAP/ Operational task force/LAs		By 2006: 1 million tonnes per annum additional compost. An additional 3.5% to the average household composting/recycling rate. Boost recycling rates to at least 35% by 2010 and 45% by 2015.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 7 – Strategic investment measures						
Recommendation 18: WRAP should promote education and awareness of waste issues through a programme of national and targeted local or issue specific campaigns related to waste minimisation and recycling.	Benefits: greater participation in waste management schemes. Less contamination in recycle. More informed attitudes on local waste planning.	There are two levels; raising awareness of the issue and how households can help, and specific education alongside initiatives that are required to ensure they are effective.	Start now.	WRAP	DEFRA/LAs, NGOs e.g. Waste Watch, Nwai	Education will lead to a more informed debate about waste options in local areas. Increase participation in waste management schemes. It is an essential facilitator of success.
Recommendation 19: The role of Envirowise should be expanded so its coverage is extended to 20% of UK companies over the next 2 years. (w)	Benefits: starts to tackle wider wastes. Waste minimisation easier at industry end. Risks: some additional extra costs to industry, though many have saved money immediately with Envirowise.	Envirowise to cover 20% of companies over 2 years. Target more problematic waste streams/sectors.	Start/fund now.	Envirowise/DTI/DEFRA	WRAP/CBI/SMEs	Reduction in waste growth rates and size of problematic streams. Savings for business.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 7 – Strategic investment measures						
Recommendation 20: DEFRA and the Environment Agency should jointly draw up a data and research strategy for the next three years. (w)	<p>Benefits: better data on which to base effective waste specific interventions. Information for a wider waste strategy. Data to monitor and evaluate.</p> <p>Risks: failure to act means data is not collected and analysed accurately.</p>	Draw up a data and research strategy for the next three years to plug gaps in data.	Start now.	DEFRA/EA to lead	Waste industry, CBI, SMEs, Departments and local government	Good data on waste arisings for all waste streams including composition, growth rates and trends.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 7 – Strategic investment measures						
Recommendation 21: DEFRA and DTI should take forward a programme of development of new technologies or approaches, including pilots.	<p>Benefits: broaden options for managing waste; kick-starts investment prior to landfill tax reaching £35.</p> <p>Reduces risk to government of not meeting Landfill Directive.</p> <p>Provides LAs with a low-risk way to try innovative options.</p> <p>Risks: money not well targeted – DEFRA to form technology board to provide advice on options to assess pilot schemes.</p>	<p>Until landfill tax increases significantly, there is no incentive for new technologies in the waste area. LAs need to use proven technologies and are reluctant to take risks. Grants will pump prime the development of options and reduce the risk for waste companies and LAs who can fund in partnership with government.</p>	Start now, provide grants to help.	DEFRA/DTI	Waste industry/ CBI/Carbon Trust/EA	A greater range of effective options for managing waste and the provision of alternatives to landfill and incineration e.g. MBT.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery						
Recommendation 22: The Challenge Fund should be retained with consideration given to opening up bids from the private sector, either independently or in partnership with LAs to tackle municipal waste.	Benefits: Challenge Fund ensures resources for waste are available and more focused.	Ensure Challenge Fund is spent effectively. Consider option of opening this up to private sector.	Now	DEFRA		Quality of Challenge Fund bids improves. Funds channelled swiftly and accurately. Improved partnership working if combined bids accepted.
Recommendation 23: DEFRA should accelerate the programme of work to improve delivery of PFI waste projects.	Benefits: ensure PFI is used flexibly and has maximum impact.	DEFRA has made considerable progress in this area.	Now	DEFRA	HMT	PFI used for a wide range of projects and to improve the flow of PFI targets.
Recommendation 24: The LTCS should be reformed with 2/3rds of current funds transferred into a public expenditure scheme to fund priority areas for investment in waste management. 1/3rd of funds to remain under the current scheme.	Benefits: ensure this fund is better focused on strategic waste management. Risks: some good work is lost so 1/3rd of existing scheme is retained for valuable projects.	Whilst the LTCS has made progress, there is insufficient transparency and ability to measure progress of projects. The fund is also not open to local authorities directly.	Now	HMT		Funds directed at strategic waste management projects with clear benefits and measurable outcomes.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery						
Recommendation 25: HMT, DEFRA and other government departments should consider how landfill tax revenue might best be redirected to incentivise investment in reduction, re-use and recycling. (w)	To increase incentives for investment in alternative waste management options.	Assessment of options.	In advance of landfill tax increase.	HMT, DEFRA & other government departments	Industry, LAs	Landfill tax revenues are recycled to incentivise and fund the change to alternative waste management options.
Recommendation 26: DEFRA's waste policy/management function should be strengthened. DEFRA should carry out a review to assess the scale of the resource required. (w)	Benefits: waste is an area subject to more legislation and additional funding. A strengthened policy centre helps delivery. Risks: none.	To include a policy cell, delivery unit and team of technical and legal support. Strengthen following areas: Negotiation with EU/legal advice. Liaison with key stakeholders and dissemination of policy.	Start now.	DEFRA	Steering Group	Effectiveness of negotiation. Clarity of policy amongst stakeholders. Peer review of satisfaction with DEFRA amongst key stakeholders. Peer review of funding management by Steering Group and HMT.



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
<p>Chapter 8 – Funding and Delivery</p> <p>Recommendation 27: There should be a review to assess the merits of focusing responsibility for waste policy in one government department. (w)</p>	<p>Benefits: coherence of response to EU legislation.</p> <p>Risks: problems during transition</p>	Undertake a study to assess the merits of focusing waste policy in one Department, including responsibility for the integration of EU Directives and regulations.	Start now. Report end 2003	Study by Machinery of Government Secretariat.	DTI/DEFRA	Clearer focus for stakeholders. Joined-up policy.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery Recommendation 28: A multi-disciplinary operational task force should be set up to help and provide advice to LAs.	<p>Benefits: provides extra support for LAs and helps to bridge the gap between central policy and local planning.</p> <p>Helps to ensure local plans meet central and local needs as far as possible.</p> <p>Helps LAs to put successful bids for funds together.</p> <p>Helps LAs with writing contracts.</p> <p>Risks: not getting right skills on taskforce and not focusing its efforts. Mitigate with careful planning.</p>	<p>To bridge the gap between policy and delivery.</p> <p>To help LAs produce their plans and design their schemes.</p> <p>To act as a central reservoir of best practice and waste expertise.</p>	<p>Start now – team to include:</p> <p>DEFRA policy representatives; Waste Industry experts; LGA experts on waste; managers/contractors from successful areas; WRAP; and Community Groups.</p>	<p>DEFRA/Task Force/LGA/WRAP</p>	<p>Waste industry/ community groups, LAs</p>	<p>Increase in awareness of national policy.</p> <p>Spread of best practice.</p> <p>Increase in number of quality joint plans for waste management.</p> <p>Effective contracts in place to operationalise strategies.</p>



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery						
Recommendation 29: The role of WRAP should be extended and additional funding allocated for waste minimisation, re-use, recycling and the development of recycle markets. (w)	Benefits: WRAP well regarded. Original role included reduction, re-use and recycling. Putting all 3 roles together ensures efforts are effectively balanced.	Provide central focus for reduction, re-use and recycling activities, avoiding duplication and ensuring appropriate action.	Start now.	WRAP	DEFRA	Better and effective co-ordination of initiatives in this area. Reduction in residual waste. Increase in recycling rates. Reduction in overall amount of waste.
Recommendation 30: An industry forum should be established. (w)	Benefits: wider waste and municipal/waste policy drawn closer together. Better joint action by Govt/industry. Allows for joint strategy/co-disposal of waste. Provides a forum to share views on EU policy, upcoming issues etc.	Municipal waste is only 28 million tonnes out of 400 million. An industry forum would provide a venue to discuss wider waste measures, producer responsibility, and bring waste initiatives together.	Start now.	DEFRA/DTI and ESA to set up a wider waste forum	CIWM, CBI, SMEs, LA representatives	Creation of a wider waste strategy. Better communication of EU legislation. Scope for joint solutions/co-disposal identified.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery						
Recommendation 31: DEFRA and ODPM should carry out a joint review to establish whether further fiscal incentives are needed to encourage LAs and tiers of authorities to work together more effectively	<p>Benefits: Best practice shared.</p> <p>Economies of scale.</p> <p>Faster progress.</p>	<p>Options:</p> <p>Change the basis on which collection authorities pay disposal authorities to a rate per tonne;</p> <p>Review recycling credits and consider expanding them to incorporate waste reduction achieved by collection authorities;</p> <p>Building on recommendations in Waste Strategy 2000; make Joint Municipal Waste Strategies statutory;</p>	Now.	DEFRA/ODPM	LGA, LAs	<p>More LAs working in partnership.</p> <p>Two-tier waste management works together effectively.</p>



Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery Recommendation 31: <i>(continued)</i>		Agree pooled targets between collection and disposal authorities; Give disposal authorities more control over the form in which waste is delivered; Consider the combination of two-tier waste management into a single level.				
Recommendation 32: ODPM and DEFRA should discuss and revise PPG10 as a priority to ensure the required facilities for recycling and residual waste management can proceed.	Benefits: waste facilities required can be built. Risks: objections if planning process seen to be “unfair”.	Consider whether further revisions are required to PPG10 or other planning guidance to secure delivery of waste facilities. LAs to start identifying suitable sites.	Start now	ODPM/DEFRA	LAs	% of waste facilities getting planning permission. Development of alternatives to landfill including a number of recycling/composting facilities.

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
Chapter 8 – Funding and Delivery						
Recommendation 33: A high level Steering Group should be set up, reporting to the Secretary of State for DEFRA, to drive forward implementation of the strategy in this report. (w)	Benefits: provides multi-disciplinary expertise and expert challenge to DEFRA's work and delivery process.	Drawing on SU advisory board, a group chaired by a senior external figure reporting to Secretary of State for DEFRA. Group will: <ul style="list-style-type: none"> • help to design/deliver policy; • provide peer review of delivery of strategy. 	Start now (membership to cover key departments and waste stakeholders as SU board)	DEFRA to provide facilities and Secretariat		Gives continuity from the SU study. Provides expert challenge and monitoring of progress against SU recommendations. Helps to drive forward implementation.
Recommendation 34: ODPM and DEFRA should ensure that Best Value Indicators support waste reduction and recycling. There should be appropriate penalties and incentives for LAs to meet waste targets.	Benefits: stimulates LAs to perform in this area. Risks: may discourage further some low performing LAs.	Variety of options: <ul style="list-style-type: none"> • performance grants; • fines; • take over waste management of poor authorities. 	Start now	DEFRA/ODPM	HMT	Fewer low performing authorities. Progress in low performing areas.



ANNEX A. THE ROLE OF THE STRATEGY UNIT

The Strategy Unit exists to provide the Prime Minister and government departments with a project-based capacity to look creatively at strategic long-term issues. It acts as a resource for the whole of government and tackles issues that cross public sector institutional boundaries.

It was created by a merger of the Performance and Innovation Unit (PIU), the Prime Minister's Forward Strategy Unit, and part of the Policy Studies Directorate of the Centre for Management and Policy Studies (CMPS).

The unit carries out long-term strategic reviews and policy analysis, which can take several forms:

- long-term strategic reviews of major areas of policy;
- studies of cross-cutting policy issues;
- strategic audit; and
- working with departments to promote strategic thinking and improve policy making across Whitehall.

Project work is carried out by mixed teams drawn from inside and outside government, the private and voluntary sectors, universities, NGOs, and local government.

The director of the Unit is Geoff Mulgan. The Strategy Unit reports to the Prime Minister through the Cabinet Secretary.

There is more information about the work of the Strategy Unit and its projects on its website: www.strategy.gov.uk

ANNEX B. THE PROJECT TEAM, SPONSOR MINISTER AND ADVISORY GROUP

This report was prepared by a multi-disciplinary team, guided by a ministerial sponsor and an Advisory Group with government and non-government representation.

The Team

The team comprised:

Stephen Aldridge – Chief Economist, Strategy Unit

Dr Jane Beasley (née Price) – on secondment from the Chartered Institution of Wastes Management (CIWM)

Melanie Edmunds – Strategy Unit

Ray Georgeson – on secondment from the Waste and Resources Action Programme (WRAP)

Tom Graham – Strategy Unit

Anne Hemming – on secondment from DEFRA

Louise Hollingworth – on secondment from the Waste and Resources Action Programme (WRAP)

Dr Paul Hollinshead – Team Leader – Strategy Unit

Andrea Lee – Economist, Strategy Unit

Lizzy Lomax – Economist, Strategy Unit

Alison Sharp – Strategy Unit

Fiona Thompson – Economist, Strategy Unit

The team was assisted by **Dr Mark Broomfield** – Envirospire, **Philip Downing** – MORI Social Research Institute, **Dr Dominic Hogg** – Eunomia Research and

Consulting, **Dr Julia Hummel** – Eco Alternatives Ltd, **Dr Stuart McLanaghan** – Director, Associates in Industrial Ecology, **Dr Julian Parfitt** – WRAP, **Professor Peter Tucker** – University of Paisley.

Sponsor Minister

The work of all Strategy Unit teams is overseen by a sponsor minister; in this case it was Margaret Beckett, Secretary of State for Environment, Food and Rural Affairs.

Advisory Group

The team was greatly assisted by being able to draw on the experience and advice of its Advisory Group, although the report represents the views of the team and not of the Advisory Group. The team benefited from a process of consultation and review with the Advisory Group throughout the project. The group, chaired by Margaret Beckett, comprised:

Michael Averill – Group Chief Executive, Shanks Group

Richard Bird – DEFRA, Director, Environment, Energy and Waste Directorate

Richard Brown – HMT, senior environmental official (alternate **Jean-Christophe Gray**)

Vic Cocker – Chairman, Waste and Resources Action Programme (WRAP)

Dirk Hazell – Chief Executive, Environmental Services Association

Simon Hewitt – DEFRA, Head of Waste Strategy



Lester Hicks – ODPM, senior official on waste planning

Martin Hurst – Number 10 Policy Directorate

Alistair Keddie – DTI, senior environmental official (alternate **Mark Downs**)

Paul Leinster – Director of Environmental Protection, Environment Agency (alternate

Terry Coleman)

Andy Moore – Community Recycling Network

Robin Murray – Economist, London School of Economics

Cllr Kay Twitchen – Essex County Council

Andrew Price – Planning Officers' Society

Stuart Reynolds – Norfolk Environmental Waste Services Ltd

Dr Tom Simpson – ODPM

Graham Tombs – New Forest District Council

John Turner – VALPAK

John Twitchen – Cory Environmental

Dr Michael Waring – Department of Health

Janet Westmoreland – Kirklees Metropolitan Council

Support Group

The team was also assisted at working level by a Support Group comprising:

Andy Bond – ECT Group

Terry Coleman – Environment Agency

Paul Dumbleton – SITA

Paul Dunn – Stockport Metropolitan Borough Council

Mike Frizoni – London Borough of Bexley

Peter Gerstrom – Cleanaway

Dr Jane Gilbert – Composting Association

Ray Greenall – Hertfordshire County Council

Graham Harding – Lancashire County Council

Barbara Herridge – Waste Watch

Ross Hilliard – Shanks Group

David Hutchinson – Greater London Authority

Merlin Hyman – Environmental Industries Commission

Peter Jones – Biffa

Pat Kilbey – DEFRA

Sheila McKinley – DEFRA

Workshop attendees

The team was also assisted by being able to draw on the experience and advice of a number of experts and stakeholders who attended workshops associated with the project or bilateral discussions with the team. A full list of workshops, and of the attendees, is available on request from the Strategy Unit.

ANNEX C. WIDER WASTES

Summary

The SU report has focussed on municipal waste and its diversion from landfill sites. However municipal waste accounts for only 28 million tonnes out of a total of 400 million tonnes of waste generated each year.

A consultant¹⁴² engaged by the SU prepared an overview of the key issues raised by wider wastes, specifically focusing on hazardous waste and industrial waste. For these waste streams, the Government's role is setting the right economic and regulatory framework, ensuring policy is both clear and effectively disseminated and that facilities are well regulated.

The Government has set a target for 2005, to reduce the amount of industrial and commercial waste sent to landfill to 85% of that landfilled in 1998.¹⁴³ There are no specific targets for reducing or recycling hazardous waste, although the Government is committed to reducing the quantity and hazardous nature of this waste stream, and the Landfill Directive now requires pre-treatment and imposes bans for specific materials.

In general, management of much of the commercial and industrial waste stream is more sustainable than the municipal waste stream, with around 51% going to landfill and recycling rates at around 30% or more. However, there is still significant scope for improvement.

¹⁴² Dr Jane Beasley (née Price), Chartered Institution of Wastes Management

¹⁴³ *Waste Strategy 2000* op.cit



The conclusions of the overview are:

- One of the major factors holding back effective policy making in these wider waste streams is a lack of data on quantities, composition, growth rates, and impacts on the environment. Improving data on wider waste streams should be a priority for the Environment Agency to focus on.
- There is a case for government to build on its work on wider wastes in Waste Strategy 2000 so that the approaches to, and recommendations for managing municipal waste can be examined alongside wider waste issues. This will enable identification of common solutions and opportunities for joint management of waste streams. Correspondingly DTI and DEFRA should work closely on the issue of wider wastes.

It is recommended that:

- DEFRA, and the EA should design a project to produce quality data on wider wastes, growth rates, impacts and the capacity of the waste industry to manage them (linked to recommendation 20, chapter 7).
- The industry forum (recommendation 30) should play a central role in the future development of policy for wider wastes. It should consider the potential for joint disposal of waste (disposing of waste streams in common facilities) and whether additional economic and regulatory measures are required to manage these streams. This work can be taken forward in the industry forum (refer to recommendation 30).

Wider Controlled Waste Issues

Whilst the focus of the detailed analysis in this report has been municipal solid waste, specifically in the context of the European

Landfill Directive obligations and national recycling targets, consideration also needs to be given to wider controlled waste issues.¹⁴⁴ Over the next few years European legislation and policy will have a significant effect on management practices for all controlled waste. These legislative pressures include the Landfill Directive, Hazardous Waste Directive, Waste from Electronic and Electrical Equipment Directive, Packaging Directive, Waste Incineration Directive, Waste Oils Directive, End of Life Vehicles Directive, and the proposed Directive on Batteries. In addition there may be scope to develop economies of scale or more effective joint approaches for tackling municipal and wider wastes together.

1. Hazardous Waste

This waste stream urgently needs to be tackled as it is specifically targeted for diversion in the Landfill Directive. The actual amounts may not be large (approximately 4.5 million tonnes produced in 1999) but this is a potentially problematic waste stream.

In terms of improving the management of this waste stream, a number of specific needs have been identified:

- clarification of the constituents of the hazardous waste stream (including household hazardous waste);
- clear understanding of the acceptance criteria for such wastes so that industry can plan appropriately;
- an assessment of existing and planned capacity for hazardous waste management, to establish if a shortfall exists and therefore whether specific actions need to be taken. A decision on whether a strategy for hazardous waste is required could be taken following this work;

¹⁴⁴ In this case to include hazardous, commercial, industrial, construction and demolition waste. Agricultural waste is not considered by the SU review as this is already under study by DEFRA.



- consideration of the potential for fly-tipping of hazardous waste to increase as costs rise and how this would be managed;
- working with industry to look at how hazardous waste can be reduced through producer responsibility. More hazardous waste (e.g. waste oils) could also be recycled;
- setting targets for individual key hazardous waste streams;¹⁴⁵
- carrying out a review of product taxation as an instrument to reduce specific hazardous components of the waste stream;
- working with local authorities to look at the feasibility of separately collecting household hazardous waste, how this might be done; and the opportunities for co-disposal with industry.

The SU welcomes and supports DEFRA's decision to have a hazardous waste forum. In addition, a number of specific recommendations have been made in this report to address the needs identified and can be found in the table, 'Summary of Key Recommendations and Action Plan: Wider Wastes' attached to this annex.

2. Construction & Demolition Waste

The quantities of Construction and Demolition (C & D) waste arising each year are estimated to be 90¹⁴⁶ million tonnes and 72.5¹⁴⁷ millions tonnes respectively for England & Wales. The total is greater than both the municipal and commercial waste streams combined. C & D wastes have recently been the subject of a

significant data collection exercise (Spring 2000) for the Environment Agency.¹⁴⁸ The exercise undertaken by Symonds gives data on the estimated arisings of wastes from construction and demolition on a regional and national level for England & Wales, as well as the amounts recycled, re-used and disposed. In 2000, 35% of C&D waste was recycled, 13% was re-used on licensed landfill sites, and 28% was spread on sites registered as exempt from waste management licensing.¹⁴⁹ Only 24% was landfilled.

The principle wastes in this stream are soil, ballast, concrete, asphalt, bricks, tiles, plaster, masonry, wood, metal, paper, glass and plastic.

This is an area where a combination of landfill tax and the more recently implemented aggregates levy have been important tools in boosting recycling and re-use. Around half the construction and demolition wastes in England and Wales are re-used or recycled according to a recent UK Government study.¹⁵⁰ It is anticipated that further progress in this area would come through recommendations of the Egan¹⁵¹ report to improve productivity and a review of standards to ensure that artificial barriers to use of secondary aggregates were not reducing progress. Overall however, this appears to be an area where significant progress is being made.

The European Commission, in its working document on Construction and Demolition waste, suggested that Member States should aim towards combined recycling and re-use targets of 50-75% by 2005 and 70-85% by 2010.

¹⁴⁵ *Waste Strategy 2000*

¹⁴⁶ BDS Marketing & Research

¹⁴⁷ Symonds, *Construction and Demolition Waste Survey, R&D Technical Summary PS368*, (2001)

¹⁴⁸ Environment Agency, *Construction and Demolition Waste Survey, Research & Development Technical Report P402*, (May 2001) ISBN 1 85705 450 4

¹⁴⁹ Environment Agency data for England and Wales

¹⁵⁰ ODP, *Construction and Demolition Waste Survey: England and Wales 1999/2000*, (2001)

¹⁵¹ DTI, *Rethinking Construction*, Report of the Construction Task Force to the Deputy Prime Minister, (July 1998)



3. Commercial & Industrial Waste

Approximately 30 million tonnes of commercial waste, and 48 million tonnes of industrial waste was produced in England and Wales in 1998/99.¹⁵² From that total 36% was recycled and 54% was disposed of to landfill.

Business and industry will opt for the most cost effective way to manage their waste stream and the interest taken in recycling and waste minimisation activities will largely depend on quantities of waste produced, market availability and impact of activities upon their final waste bill. Instruments such as the landfill tax have not necessarily achieved the desired effect of diversion from landfill due to the level of taxation not being set high enough. In addition, as a result of resource and time constraints, it is the larger companies, multinationals, or those operating within an environmental remit that are more likely to consider different waste management options and incorporate recycling strategies. Essentially the drivers in this instance are not just economic but also external relations with the stakeholders. It is possible that further advancements can be made in this waste stream with the right levers for change.

There are particular problems with changing behaviour in the SME sector. SMEs and the smaller waste generators are more likely to have less knowledge of their waste production and management and will simply have opted for the cheapest collection service available, or simply utilise the services of a waste management company they are familiar with or have had recommended. It is then entirely dependent upon the services offered by that waste management company in terms of the options for managing the waste generated. There is little or no incentive for SMEs to make the necessary investment in alternative waste management options, particularly in relation to

time and resources, to bring about a change in waste practices.

As individual organisations, SMEs may be producing low levels of waste, but collectively they will be contributing a significant quantity to landfill for disposal. This could pose significant problems in the future if the UK is forced to readdress its definition of Municipal Solid Waste, which is contrary to the definition in use by a number of European countries, who include a significant quantity of commercial waste from SMEs and other small producers.

Currently, no incentive exists for local authorities to target commercial operations for the recovery of materials. However there is potential for combining paper and cardboard collections from household sources with business parks & trading estates: thus potentially making household recyclables collection more economically viable. This is done in other nations such as the Netherlands and should be considered here.

The use of tools such as mandatory environmental reporting (currently a voluntary initiative) could be considered as an approach to changing behaviour within the business sector. In 2000, the Government set a policy to encourage the top 350 companies to report on their environmental performance by the end of 2001.¹⁵³ However the response from business and industry to date has been limited. A number of other European countries¹⁵⁴ have implemented mandatory environmental reporting aimed at specific sectors or companies of a certain size. Clear guidelines would need to be established as to the content and specifically the waste management element of the report, if it is to have the desired effect of changing waste management practices. The intention is that with the publishing of an environmental report, a company becomes more aware of its

¹⁵² *Waste Strategy 2000*

¹⁵³ *Waste Strategy 2000*

¹⁵⁴ For example, Denmark, Netherlands, Norway and Sweden



waste generation and practices, and sets targets for the following year – in effect the report acts as an internal benchmark. Further work would be needed to assess if mandatory environmental reporting would be workable and yield significant benefits without imposing an additional burden on business. In the interim further encouragement should be given to voluntary take up of such environmental performance monitoring.

The wider development of both Waste Minimisation Clubs¹⁵⁵ and Waste Exchanges¹⁵⁶ is an opportunity for providing commercial and industrial waste producers with another approach to increase awareness, change in-house practices, and divert more material away from waste disposal options. There are approximately 100 active clubs across the UK and Envirowise is involved with them all to some extent. There is considerable scope to extend the number of clubs in operation and therefore increase the number of companies participating. In addition, the number of waste exchanges currently operating is minimal and the quantities of waste being re-used and recycled through these networks is limited, therefore there is potential to increase their role. The Environment Agency has set itself a policy to push waste exchanges and facilitate networks; however there has been limited evidence of progress to date and this area needs more work.

A number of specific key barriers to greater action on this waste stream have been identified as:

- a lack of good data on waste arisings (see recommendation 20);
- a lack of sufficient economic incentives to recycle: the landfill tax is too low (see recommendation 11);
- a lack of extensive voluntary targets to encourage reduction and recycling of commercial and industrial waste, plus a lack of appreciation whether statutory targets would be appropriate; and
- a lack of awareness at the SME level of sustainable waste management practices (refer to recommendation 19).

A number of specific recommendations have been made to address the key barriers and specific needs identified in this annex. Details can be found in the attached table 'Summary of Key Recommendations and Action Plan: Wider Wastes'.

¹⁵⁵ Aire and Calder and Project Catalyst, both demonstration projects in the early 1990's, supported by government, showed considerable financial savings largely as a result of waste minimisation

¹⁵⁶ Waste exchanges – where details of waste that may be used by others are available and can be exchanged

Annex C: Summary of Key Recommendations and Action Plan: Wider Wastes

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
HAZARDOUS WASTE	B = Benefits. R = Risks.					
Ensure clear definition of all hazardous waste (including household) is developed and disseminated.	B – clarity and time to plan.	Clear list disseminated to all stakeholders.	2003	DEFRA	EA	Measures in place to manage hazardous waste.
Assess existing and planned capacity for hazardous waste management.	B – identify shortfall and time to plan. R – difficult to get data & information.	Develop & implement data collection.	2003	DEFRA	EA/Chemical Industry Association/ESA	Sufficient capacity in place to meet requirements.
Assess the potential for flytipping in light of legislative requirements.	B – ensure effective management of hazardous waste.	Examine the need for increased regulation and enforcement.	2003	EA		Measures in place to manage flytipping.
Hazardous Waste Forum.	B – proactive approach to overcoming barriers and proposing solutions.	Exchange of information and good practice.	2003	DEFRA + key stakeholders	CBI, CIA, SMEs, ESA, LAs, EA	Co-ordinated approach towards the development of more sustainable management practices.

Annex C: Summary of Key Recommendations and Action Plan: Wider Wastes (continued)

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/organisation	Others involved	Measuring progress
COMMERCIAL & INDUSTRIAL WASTE						
Explore the potential for supporting the wider development of waste exchanges.	B – industry led diversion of waste from landfill. R – take-up may be small.	Good practice dissemination, including operational guidance and standards.	2003	DTI/DEFRA/ Envirowise	CBI, SMEs	Diversion of waste from landfill, increased re-use and recycling.
Consider the value of mandatory environmental reporting.	B – improved in-house environmental practices. R – expertise may be lacking in some businesses to complete an environmental report.	Establish effectiveness of voluntary approach to environmental reporting and assess costs/benefits of implementing a mandatory programme.	2003	DTI/DEFRA/ Envirowise	EA, CBI, SMEs	Higher standards of operation and increased awareness of waste generation and management. Increase in the number of environmental reports produced.
Increase the role of Waste Minimisation Clubs.	B – greater awareness of waste minimisation, particularly amongst the SMEs.	Increase awareness of Waste Minimisation Clubs and promote their benefits.	2003	DTI/DEFRA/ Envirowise	CBI, SMEs	Improved waste management, particularly in SME sector.



Annex C: Summary of Key Recommendations and Action Plan: Wider Wastes (continued)

Recommendation	Benefits/Risks	Action to be taken	By when	Lead dept/ organisations	Others involved	Measuring progress
<p>COMMERCIAL & INDUSTRIAL WASTE (continued)</p> <p>Consider the use of statutory targets for commercial and industrial waste. Consider increasing targets after 2005.</p>	<p>B – enforceable requirement to divert material away from disposal R – baseline date against which targets set may not be accurate. Markets may not be adequate to accommodate increase in materials available.</p>	<p>Examine potential opportunities, incentives and barriers to waste minimisation, re-use and recycling.</p>	<p>2005 – review against progress and the success of Waste Strategy 2000 target for commercial and industrial waste.</p>	<p>DEFRA/DTI</p>	<p>CBI/SMEs/ WRAP, EA</p>	<p>Strategy developed regarding the use of targets for reducing disposal of commercial and industrial waste.</p>

ANNEX D. GLOSSARY OF TERMS

Active waste – a term used to differentiate between the upper and lower rate of landfill tax, essentially referring to biodegradable material

Aggregates – granular material used in construction

Anaerobic digestion – a process where biodegradable material is encouraged to break down in the absence of oxygen. Material is placed into an enclosed vessel and in controlled conditions the waste breaks down into *digestate* and *biogas*

Basel Convention – the 1989 United Nations Basel Convention on the control of transboundary movements of hazardous wastes and their disposal provides a framework for a global system of controls on international movements of hazardous and certain other wastes

Best Practicable Environmental Option (BPEO) – a BPEO is the outcome of a systematic and consultative decision-making procedure which emphasises the protection and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term

Best Value – places a duty on local authorities to deliver services (including waste collection and waste disposal management) to clear standards – covering both cost and quality – by the most effective, economic and efficient means available

Bring site – A localised collection point for recyclates, e.g. glass, paper and cans

Bulky Waste – waste which exceeds 25kg or any article that does not fit into a receptacle provided for householders, or if no receptacle is provided, a cylindrical container of 750mm in diameter and 1 metre high

CBI – Confederation of British Industry

Central composting – large-scale schemes which handle kitchen and garden waste from households and which may also accept suitable waste from parks and gardens

Civic amenity waste – a sub-group of household waste, normally delivered by the public direct to sites provided by the local authority. Consists generally of bulky items such as beds, cookers and garden waste as well as recyclables

CIWM – Chartered Institution of Wastes Management

Clinical waste – waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practices, which may present risks of infection

Combined Heat and Power – a highly fuel efficient technology which produces electricity and heat from a single facility

Commercial waste – waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding municipal and industrial waste



Community sector – including charities, campaign organisations and not-for-profit companies

Composting – an aerobic, biological process in which organic wastes, such as garden and kitchen waste are converted into a stable granular material which can be applied to land to improve soil structure and enrich the nutrient content of the soil

Construction and demolition waste – arises from the construction, repair, maintenance and demolition of buildings and structures. It mostly includes brick, concrete, hardcore, subsoil and topsoil, but it can also contain quantities of timber, metal, plastics and (occasionally) special (hazardous) waste materials

Controlled waste – comprised of household, industrial, commercial and clinical waste which require a waste management licence for treatment, transfer or disposal. The main exempted categories comprise mine, quarry and farm wastes. Radioactive and explosive wastes are controlled by other legislation and procedures

Decoupling – removal of the linkage between economic growth and environmental damage

DEFRA – Department for the Environment, Food and Rural Affairs

Delivery structures – mechanisms or frameworks to achieve the desired outcomes

Dredged spoils – sediments left over from dredging operation from estuaries or coastal areas

DTI – Department of Trade and Industry

Duty of Care – applies to anyone who imports, produces, carries, keeps, treats or disposes of waste. Everyone subject to the duty of care has a legal obligation to comply with it and there are severe penalties for failing to do

so. The Duty of Care does not apply to waste collection from households

EC Directive – a European Community legal instruction, which is binding on all Member States, but must be implemented through the legislation of national governments within a prescribed timescale

Eco-design – the process of producing more goods using fewer resources and causing less pollution, both in manufacturing and disposal

ELV – End of Life Vehicle: a vehicle which is waste within the meaning of Article 1 of the Waste Framework Directive

Energy recovery from waste – includes a number of established and emerging technologies, though most energy recovery is through incineration technologies. Many wastes are combustible, with relatively high calorific values – this energy can be recovered through (for instance) incineration with electricity generation

Environment Agency (EA) – established in April 1996, combining the functions of former local waste regulation authorities, the National Rivers Authority and Her Majesty's Inspectorate of Pollution. Intended to promote a more integrated approach to waste management and consistency in waste regulation. The Agency also conducts national surveys of waste arisings and waste facilities

Envirowise – aims to demonstrate the benefits of managing resource use and reducing environmental impact to companies across the whole of the UK

ESA – Environmental Services Association

Feedstock – raw material required for a process

Gasification – The thermal breakdown of hydrocarbons into a gas via partial oxidation under the application of heat



Green waste – Vegetation and plant matter from household gardens, local authority parks and gardens and commercial landscaped gardens

Home composting – compost can be made at home using a traditional compost heap, a purpose designed container, or a wormery

Household waste – this includes waste from household collection rounds, waste from services such as street sweepings, bulky waste collection, litter collection, hazardous household waste collection and separate garden waste collection, waste from civic amenity sites and wastes separately collected for recycling or composting through bring or drop-off schemes, kerbside schemes and at civic amenity sites

Incineration – is the controlled burning of waste, either to reduce its volume, or its toxicity. Energy recovery from incineration can be made by utilising the calorific value of paper, plastic, etc. to produce heat or power. Current flue-gas emission standards are very high. Ash residues still tend to be disposed of to landfill

Industrial waste – waste from any factory and from any premises occupied by an industry (excluding mines and quarries)

Inert waste – waste which, when deposited into a waste disposal site, does not undergo any significant physical, chemical or biological transformations and which complies with the criteria set out in Annex III of the EC Directive on the Landfill of Waste

Integrated waste management – involves a number of key elements, including: recognising each step in the waste management process as part of a whole; involving all key players in the decision-making process; and utilising a mixture of waste management options within the locally determined sustainable waste management system

Integrated Planning Pollution and Control (IPPC) – is designed to prevent or, where that is not possible, to reduce pollution from a range of industrial and other installations, including some waste management facilities, by means of integrated permitting processes based on the application of *best available techniques*

In-vessel (composting) – this is the controlled biological decomposition and stabilisation of organic material in vessels that are usually enclosed affording an enhanced level of process and emission control

Kerbside collection – any regular collection of recyclables from premises, including collections from commercial or industrial premises as well as from households. Excludes collection services delivered on demand

Land use planning – the Town and Country Planning system regulates the development and use of land in the public interest, and has an important role to play in achieving sustainable waste management

Landfill sites – are areas of land in which waste is deposited. Landfill sites are often located in disused quarries or mines. In areas where there are limited, or no ready-made voids, the practice of *landraising* is sometimes carried out, where some or all of the waste is deposited above ground, and the landscape is contoured

Landspreading – is the spreading of certain types of waste onto agricultural land for soil conditioning purposes. Sewage sludge and wastes from the food, brewery and paper pulp industries can be used for this purpose

LAs – Local Authorities

LGA – Local Government Association



Licensed site – a waste disposal or treatment facility which is licensed under the Environmental Protection Act for that function

Life cycle assessment – can provide a basis for making strategic decisions on the ways in which particular wastes in a given set of circumstances can be most effectively managed, in line with the principles of the Best Practicable Environmental Option, the Waste Hierarchy and the proximity principle

MORI – Market & Opinion Research International

Minimisation – see reduction

Mineral voids – spaces available through mining or quarrying activities

Municipal waste – this includes household waste and any other wastes collected by a Waste Collection Authority, or its agents, such as municipal parks and gardens waste, beach cleansing waste, commercial or industrial waste, and waste resulting from the clearance of fly-tipped materials

ODPM – Office of the Deputy Prime Minister

OGC – Office of Government Commerce

Open windrow (composting) – biodegradable waste is arranged into long, low, rows and turned periodically to aerate waste as it degrades

Planning Policy Guidance Notes (PPGs) and Mineral Planning Guidance Notes

(MPGs) – Government Policy Statements on a variety of planning issues, including waste planning issues, to be taken as material considerations, where relevant, in deciding planning applications

Producer responsibility – is about producers and others involved in the distribution and sale of goods taking greater responsibility for those goods at the end of the product's life

Proximity principle – suggests that waste should generally be disposed of as near to its place of production as possible

Putrescible – material with a tendency to decay, e.g. biodegradable material such as garden and kitchen waste

Pyrolysis – process in which organic waste is heated in the absence of oxygen to produce a mixture of gaseous and liquid fuels and a solid inert residue

Recycling – involves the reprocessing of wastes, either into the same product or a different one. Many non-hazardous industrial wastes such as paper, glass, cardboard, plastics and scrap metals can be recycled. Special wastes, such as solvents can also be recycled by specialist companies, or by in-house equipment

Reduction – achieving as much waste reduction as possible is a priority action. Reduction can be accomplished within a manufacturing process involving the review of production processes to optimise utilisation of raw (and secondary) materials and recirculation processes. It can be cost effective, both in terms of lower disposal costs, reduced demand for raw materials and energy costs. It can be carried out by householders through actions such as home composting, reusing products and buying goods with reduced packaging

Re-use – can be practised by the commercial sector with the use of products designed to be used a number of times, such as reusable packaging. Householders can purchase products that use refillable containers, or re-use plastic bags. The processes contribute to sustainable development and can save raw materials, energy and transport costs

DTI's Renewables Obligation – this was introduced in 2002 and creates a market in tradable renewable energy certificates for which each supplier of electricity must demonstrate compliance with increasing government targets for renewable electricity generation



Ring fenced (funds) – a method of allocating or reserving funds for a specific purpose or activity

Self-sufficiency – dealing with wastes within the region or country where they arise

Separate collection – kerbside schemes where materials for recycling are collected either by a different vehicle or at a different time to the ordinary household waste collection

Special waste – is defined by the Special Waste Regulations 1996

Sustainable development – development which is sustainable is that which can meet the needs of the present without compromising the ability of future generations to meet their own needs

Sustainable waste management – means using material resources efficiently, to cut down on the amount of waste we produce. And where waste is generated, dealing with it in a way that actively contributes to the economic, social and environmental goals of sustainable development

Treatment – involves the chemical or biological processing of certain types of waste for the purposes of rendering them harmless, reducing volumes before landfilling, or recycling certain wastes

Unitary Authority – a local authority which has the responsibilities of both Waste Collection and Waste Disposal Authorities

Waste – is the wide ranging term encompassing most unwanted materials and is defined by the Environmental Protection Act 1990. Waste includes any scrap material, effluent or unwanted surplus substance or article which requires to be disposed of because it is broken, worn out, contaminated or otherwise spoiled. Explosives and radioactive wastes are excluded

Waste arisings – the amount of waste generated in a given locality over a given period of time

Waste Collection Authority – a local authority charged with the collection of waste from each household in its area on a regular basis. Can also collect, if requested, commercial and industrial wastes from the private sector

Waste Disposal Authority – a local authority charged with providing disposal sites to which it directs the Waste Collection Authorities for the disposal of their controlled waste, and with providing civic amenity facilities

Waste Hierarchy – suggests that: the most effective environmental solution may often be to reduce the amount of waste generated – *reduction*; where further reduction is not practicable, products and materials can sometimes be used again, either for the same or a different purpose – *re-use*; failing that, value should be recovered from waste, through *recycling, composting or energy recovery from waste*; only if none of the above offer an appropriate solution should waste be *disposed of*

Waste management industry – the businesses (and not-for-profit organisations) involved in the collection, management and disposal of waste

Waste management licencing – licences are required by anyone who proposes to deposit, recover or dispose of waste. The licencing system is separate from, but complementary to, the land use planning system. The purpose of a licence and the conditions attached to it is to ensure that the waste operation which it authorises is carried out in a way which protects the environment and human health

Waste streams – Waste generated from different sources



Waste Strategy 2000 – Government vision of sustainable waste management in England and Wales until 2020 (Wales has subsequently produced its own strategy)

Waste transfer station – a site to which waste is delivered for sorting prior to transfer to another place for recycling, treatment or disposal

WEEE – Waste Electrical and Electronic Equipment

WRAP – Waste and Resources Action Programme

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