



National Audit Office

DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS Reducing the reliance on landfill in England

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 1177 Session 2005-2006 | 26 July 2006

The National Audit Office scrutinises public spending on behalf of Parliament. The Comptroller and Auditor General, Sir John Bourn, is an Officer of the House of Commons. He is the head of the National Audit Office, which employs some 850 staff. He, and the National Audit Office, are totally independent of Government. He certifies the accounts of all Government departments and a wide range of other public sector bodies; and he has statutory authority to report to Parliament on the economy, efficiency and effectiveness with which departments and other bodies have used their resources. Our work saves the taxpayer millions of pounds every year. At least £8 for every £1 spent running the Office.



National Audit Office

DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS
Reducing the reliance on landfill in England

LONDON: The Stationery Office
£10.75

Ordered by the
House of Commons
to be printed on 24 July 2006

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

John Bourn
Comptroller and Auditor General
National Audit Office

19 July 2006

The National Audit Office study team consisted of:

Marcus Popplewell, Jeremy Gostick, Paul Mills, Damian Cleghorn, Hannah Marks, Lynn Andrews, Andrew Munro, Lauren Kennedy, Chris Ballard and Emma Moorton, under the direction of Phil Gibby

This report can be found on the National Audit Office web site at www.nao.org.uk

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Email: enquiries@nao.gsi.gov.uk

© National Audit Office 2006

CONTENTS

SUMMARY AND RECOMMENDATIONS	1
PART 1	
England needs to reduce the amount of biodegradable municipal waste disposed through landfill	6
The United Kingdom has disposed of more municipal waste by landfill than most other European Union countries	7
The Government aims to reduce the amount of waste sent to landfill sites in England in order to meet European Union targets	8
The Department for Environment, Food and Rural Affairs must work closely with local authorities to achieve the targets for landfill	10
The scope of our work and our approach	10
PART 2	
Earlier delays in taking action made the European Union targets more difficult to achieve	12
Continued growth in the amount of biodegradable municipal waste produced will make the European Directive targets more difficult to achieve	13
The United Kingdom's historic heavy reliance on landfill left it poorly positioned in relation to many European countries who have already achieved their targets to reduce reliance on landfill	15



Departmental strategies to tackle waste, prior to the Strategy Unit report in 2002, lacked the clarity required to encourage quicker progress 16

The Landfill Allowance Trading Scheme provides a financial incentive for local authorities to divert biodegradable municipal waste from landfill, but the absence of timely and accurate data could undermine its effectiveness 16

PART 3

Without a step change in existing local authority plans, England will not achieve its share of the reductions in landfill the European Union requires by 2010 and 2013 18

At the current rate of progress, there is a significant risk of local authorities failing to divert sufficient biodegradable municipal waste from landfill to meet European Union targets 19

Local authorities require assistance in developing alternative methods of waste disposal 22

Getting waste treatment facilities up and running in time to meet the European Union targets in 2010 and 2013 depends upon quickly learning and applying lessons from earlier waste disposal projects 24

PART 4

Recycling and minimisation need to contribute more to reducing the amount of biodegradable municipal waste sent to landfill 26

The amount of waste recycled each year has increased considerably, but it will become more difficult to maintain this rate of increase 27

Initiatives to get businesses and households to minimise waste remain at a very early stage 30

APPENDICES

1 Recommendations arising from the Office of Government Commerce's review of the Municipal Waste Market 32

2 Alternative waste treatment options 33

3 Study methods 35

4 Analysis of the Government's 1995, 2000 and 2002 waste strategies 38

5 Amounts sent to landfill by waste disposal authorities in 2003-04 39

6 Financial impact of the Landfill Directive on authorities failing to meet Landfill Allowance Trading Scheme obligations 43

7 Stages in the Private Finance Initiative process 45

SUMMARY AND RECOMMENDATIONS



1 The European Union introduced a Directive in 1999 requiring all Member States to reduce the amount of biodegradable municipal waste, such as food, vegetation and paper, disposed by landfill.¹ Biodegradable materials in landfill sites release emissions to the air which are harmful to the environment and emissions to the soil and water which can be harmful to health.² (See paragraphs 1.1 and 1.4).

2 **Local authorities in the United Kingdom rely much more on landfill for municipal waste disposal than many other European countries.** According to performance data for 2003, 75 per cent of municipal waste (equivalent to 17.7 million tonnes of biodegradable municipal waste) was landfilled in the United Kingdom, compared to 38 per cent in France and 20 per cent in Germany. Provisional Departmental figures for 2004-05 for England indicate that the amount landfilled has fallen from 72 per cent in 2003-04 to 67 per cent.³ The United Kingdom's historic reliance on landfill left it poorly positioned in relation to many European countries who have already achieved their targets to reduce their reliance on landfill, partly due to

geological, cultural and historic differences in approach to waste management. Our consultants, SLR Consulting, suggested six common features of countries that had made greater progress:

- a** a greater acceptance of energy from waste as an alternative method of waste disposal;
- b** timely and clear promotion of preferred alternatives to landfill;
- c** encouraging investment in facilities through strategic planning and clear guidance on measurement of waste and operating standards of facilities;
- d** provision for municipalities to charge for waste collection;
- e** comparatively high landfill costs through taxes or high industry costs;
- f** infrastructure development risks shared between private investors and central or local Government.

(See paragraphs 1.2, 2.5-2.7)

1 The European Union definition of municipal waste is household waste and waste of a similar composition as household waste. In the United Kingdom this definition has been interpreted as all waste under the control of a local authority, and includes household rubbish, street litter and collected trade waste. This interpretation varies across Europe, however.

2 A study to estimate the disamenity costs of landfill in Great Britain, Cambridge Econometrics on behalf of the Department for Environment, Food and Rural Affairs (2003).

3 The figure for 2004-05 is based on data returns for 50 per cent of local authorities, plus estimates for the other authorities.

3 The European Union Directive targets require a considerable reduction in the use of landfill by local authorities in England. The targets for the United Kingdom are to reduce by 2010 the amount of biodegradable municipal waste sent to landfill to 75 per cent of that arising in 1995, with further reductions to 50 per cent by 2013 and 35 per cent by 2020. The majority of the reductions fall on local authorities in England and meeting the 2010 target will require a reduction of at least 3.5 million tonnes compared to the amount of biodegradable municipal waste landfilled in 2003-04, a further reduction of 3.7 million tonnes to meet the 2013 target, plus another 2.3 million tonnes for 2020.⁴ The Department's Waste Implementation Programme, which consists of various initiatives to encourage alternative disposal methods, particularly recycling and the minimisation of waste produced, is intended to help local authorities meet these targets. In 2006, the Department is carrying out a major review of its 2000 Waste Strategy to see, amongst other things, what more needs to be done to meet the Landfill Directive targets. (See paragraphs 1.4-1.6)

Overall conclusion

4 The Department has spent £336 million on initiatives to reduce reliance on landfill, which has contributed to an increase in the proportion of municipal waste being recycled in England from 13 per cent in 2001-02 to 23 per cent in 2004-05. Reductions in the proportion of biodegradable waste sent to landfill have, however, been offset by growth in the amount of waste produced. The value for money of the Department's initiatives depends in part on whether the United Kingdom meets targets imposed by the European Union. At this stage there is a significant risk that the targets will not be met, and failure to do so could result in the United Kingdom incurring fines for non-compliance. It is difficult to determine the extent of any fine at this stage but the Prime Minister's Strategy Unit suggested the United Kingdom could be fined up to £180 million a year.⁵

5 An emphasis on increasing recycling alone is unlikely to enable the European Union Directive on landfill to be met. The Department therefore needs to focus its resources towards helping the 25 waste disposal authorities sending the largest amounts of municipal waste to landfill to develop alternative waste treatment facilities, such as energy from waste plants, alongside encouraging more households to recycle and compost, and initiatives to minimise waste production.⁶

Our findings in more detail

6 In April 2005 the Department introduced the Landfill Allowance Trading Scheme to encourage local authorities to improve their waste management. Local authorities across England have been set limits on the amount of biodegradable municipal waste they can dispose of in landfill sites, in line with the European Union targets set for England as a whole. The Scheme allows authorities to trade allowances if they have excess or insufficient capacity. The Department has confirmed that it would impose penalties on each local authority of £150 for every tonne of biodegradable waste disposed by landfill in excess of its allowance. (See paragraphs 2.10-2.12)

7 The effectiveness of the Landfill Allowance Trading Scheme will depend, in part, on the reliability of data from authorities and contractors. The Department reported that, by July 2006, all waste disposal authorities were using the system, with 120 of the 121 waste disposal authorities having completed returns for the first year of the Scheme (2005-06). There are still problems with the reliability of the data, however, and the Environment Agency has (at 10 July 2006) so far completed the first stage validation process for only 21 authorities for the first year of the Scheme. As of 10 July 2006 validation has not been feasible for 25 of the 40 waste disposal authorities in two tier areas because of the lack of data from some waste collection authorities in their areas (only waste disposal authorities are required to supply data under the Waste and Emissions Trading Act 2003).⁷ In Wales, where the Scheme started six months earlier, the Environment Agency found a 10 per cent discrepancy in returns between local authorities' and operators' figures. (See paragraphs 2.13 and 2.14).

⁴ These figures assume there is no growth in the amount of waste generated.

⁵ *Waste not, Want not, A strategy for tackling the waste problem in England*, Prime Minister's Strategy Unit, November 2002, paragraph 3.5.

⁶ Energy from waste involves burning materials in controlled condition and, where possible, using the heat to generate power. The inert waste can then be landfilled or used by the construction industry.

⁷ Section 13 of the Waste and Emissions Trading Act 2003.

8 There is a significant risk that local authorities in England will fail to reduce tonnages of biodegradable waste sent to landfill by enough for the United Kingdom government to meet the European Union targets for 2010 and 2013. Although the local authorities we contacted confirmed that waste management is a high priority, an Office of Government Commerce survey in 2005, with responses from over 70 per cent of English local authorities with waste disposal responsibilities, revealed that many have been slow to finalise their plans to divert waste from landfill.⁸ On the basis of the existing facilities for managing municipal waste, and the planned facilities identified by the Office of Government Commerce's survey of local authorities in 2005, we estimated that authorities would exceed total allowance limits for sending biodegradable municipal waste to landfill by approximately 270,000 tonnes in 2010 and by approximately 1.4 million tonnes in 2013. The consequent penalties imposed on local authorities could amount to £40 million in 2010, and £205 million in 2013. These results assume no further action is taken by local authorities beyond that already planned. In practice, though, the Department assumes local authorities will respond to the incentives in place, such as the Landfill Allowance Trading Scheme, and the constraints, such as how long it takes to get new waste treatment facilities built, and take sufficient alternative courses of action to allow them to meet their allowance limits. (See paragraphs 3.4, 3.5, and Appendices 1 and 6).

9 The Department's modelling suggests that, to meet European Union targets, approximately 40 per cent of household waste should be recycled by 2010. This is likely to be difficult to achieve. According to published data, England's recycling rate is much lower than that of leading European countries, though it has increased from 11 per cent of waste composted or recycled in 2001 to 23 per cent in 2004-05.⁹ This compares to levels in 2001 of 41 per cent in Germany and 60 per cent in

Austria. Some European countries use household charging schemes to encourage recycling and reduce volumes of waste requiring collection.¹⁰ The Department has indicated that the Government plans to consider whether charging could be adopted in England. (See paragraphs 4.1, 4.2, 4.10 and 4.11)

10 The Waste and Resources Action Programme (WRAP Ltd) and the Department's Waste Implementation Programme have proved effective in encouraging local authorities and the public to recycle more.¹¹ The technical advice and support offered by the two groups is appreciated by the majority of authorities that receive it. WRAP has mounted national campaigns on the Department's behalf to raise awareness about recycling which have shown improvements in the proportion of people willing to participate in such schemes. And WRAP has introduced several schemes to encourage home composting. (See paragraphs 4.7 and 4.9).

11 Existing efforts to encourage more recycling and composting have been offset by the growth in the tonnage of waste collected by local authorities. The Department provided local authorities with £336 million between 2002-03 and 2005-06, and offered advice to encourage greater recycling and composting of biodegradable municipal waste. Local authorities recycled an additional 2.5 million tonnes of municipal waste between 1996-97 and 2004-05. The increased recycling has been outweighed, however, by a 21 per cent increase in waste tonnage collected by authorities over the same period. Assuming that waste tonnage continues to increase by 1.5 per cent a year, the proportion of waste recycled or composted would have to increase from 23 per cent in 2004-05 to 40 per cent by 2010 and nearly 50 per cent by 2013. The Department's 2006 Waste Strategy Review accordingly proposes a national 2010 recycling and composting target of 40 per cent. (See paragraph 2.1, 4.1, 4.5)

8 *Improving Competition and Capacity Planning in the Municipal Waste Market*, Office of Government Commerce, May 2006.

9 Local authority recycling figures in the report refer to amounts for households unless stated otherwise.

10 Austria, Denmark, France, Germany, Ireland, Italy, the Netherlands and Sweden.

11 WRAP (the Waste & Resources Action Programme) was established in 2001 in response to the Government's Waste Strategy 2000 to promote sustainable waste management. Following the Strategy Unit report "Waste Not, Want Not", WRAP was tasked with carrying out a range of programmes on municipal waste, funded by the Waste Implementation Programme.

12 Until 2003 the Department (and its predecessors) had been slow to develop a clear action plan on how local authorities could develop waste treatment plants. Our analysis indicates that, before the introduction of the Waste Implementation Programme in April 2003, earlier strategies lacked practical plans for reducing reliance on landfill. Until the introduction of the Landfill Allowance Trading Scheme in April 2005, waste management targets set by government were not designed to deliver the level of diversion from landfill required by the European Union Landfill Directive. Our interviews with local authority staff confirmed that developing alternative methods of waste treatment required a much greater range of staff skills and experience than was needed to manage existing landfill contracts, and that they would welcome more detailed, specific advice on their schemes in addition to existing Departmental initiatives. The creation of the Waste Implementation Programme, and the work of WRAP, have improved matters but, as our consultants, SLR, found, progress depends on the commitment of local authorities to deliver their own plans. (See paragraphs 2.8-2.10, 3.11-3.13)

13 Meeting the European Union targets will require the construction of waste treatment and recovery plants, such as mechanical and biological treatment and energy from waste plants, but difficulties in securing funding have contributed to delays.¹² The typical cost of building an energy from waste plant can be between £40 million and £100 million, and many local authorities have therefore opted to use the Private Finance Initiative to secure funding. Nine years after the first Private Finance Initiative deals were signed, though, only six authorities have treatment facilities in operation or under construction.¹³ Our analysis found that it typically took two years to put the financing in place for such deals, compared to 10 months for standard contracts. (See paragraphs 3.18 and 3.19)

14 Speeding up the construction of facilities that provide an alternative to landfill, such as energy from waste plants, depends on addressing public concerns. Authorities planning to develop energy from waste plants told the Office of Government Commerce that they were allowing between six and 26 months to gain approval, although in practice some cases might take much longer. The Department, in conjunction with the Department for Communities and Local Government (formerly the Office of the Deputy Prime Minister), has issued revised guidance to speed up the planning process, but it will be several years before the full effects are realised. Although the Department's previously published study on health effects considered risks to human health from incineration were small by comparison with other known risks, 47 per cent of respondents to our public survey were concerned about the health risks from energy from waste plants. Such public concerns can lead to objections, so delaying planning permission for waste treatment plants. The Department has recently commissioned further research into the health effects of energy from waste plants. (See paragraphs 3.7, 3.8, 3.23-3.25)

15 By putting a greater focus on those waste disposal authorities sending the largest amounts of biodegradable municipal waste to landfill, the Department might improve the possibility of meeting the targets by providing better advice and deterring authorities from unnecessarily 'reinventing the wheel'. The range and innovative nature of many proposed schemes increase the risk and uncertainty in the waste industry and financiers, and, therefore, the prices charged. Twenty five local authorities are responsible for 50 per cent of municipal waste sent to landfill, and 19 of them face a considerable challenge in meeting their reductions. The Waste Implementation Programme is increasing its focus on major infrastructure projects, as recommended by the Office of Government Commerce, by: drawing together and improving public advisory services to local authorities through a new Waste Infrastructure Development Programme; modifying Private Finance Initiative criteria and guidance better to suit the waste market; strengthening links with the investment community; and developing an improved national overview of local authority infrastructure plans.¹⁴ (See paragraphs 3.13 and 3.14)

12 Energy from waste involves burning materials in a controlled condition and, where possible, using the heat to generate power. The inert waste can then be landfilled or used by the construction industry. The mechanical and biological treatment of waste typically involves a drying and bulk reduction process prior to disposal in landfill.

13 East London Waste Authority, East Sussex County Council, Isle of Wight Council, Leicester City Council, Kirklees Metropolitan Borough Council and South Gloucestershire Council.

14 *Improving Competition and Capacity Planning in the Municipal Waste Market*, Office of Government Commerce, May 2006. The report's recommendations can be found at Appendix 1. The Waste Infrastructure Development Programme was announced by the Government in May 2006.



RECOMMENDATIONS

- 16 The Department should:
- **Put a greater focus on those local authorities sending the largest tonnages of biodegradable municipal waste to landfill so that council staff can more readily draw on the Department's expertise as required.** The guidance should encourage local authorities to produce strategies showing as clearly as possible how they are to meet their targets under the Landfill Directive for the years 2010, 2013 and 2020; and also include advice on how to minimise waste industry's and finance industry's concerns on the viability of projects by encouraging greater standardisation of proposals for waste treatment plants.
 - **Include waste collection authorities within the data obligations associated with the Landfill Allowance Trading Scheme to encourage them to submit performance data regularly so that the Environment Agency can validate progress.**
 - **Demonstrate to the public the benefits of alternative waste technologies, including the recovery of energy from waste, compared to landfill.** This could involve raising public awareness of the problems with landfill and wider publicising of scientific research into the impacts of other technologies.
 - **Work with the Department for Communities and Local Government to reduce the time taken to get planning permission for waste treatment plants.** The Department should target the advice it developed for its recent 'roadshows' towards key staff in the 25 local authorities who send the most biodegradable municipal waste to landfill. The Department should also monitor how long each planning application takes.
 - **Work with authorities to develop the most cost-effective waste collection solutions for a particular area.** The most cost-effective waste collection method in an urban area, for example, is likely to be different to that for a rural one.

PART ONE

England needs to reduce the amount of biodegradable municipal waste disposed through landfill



The United Kingdom has disposed of more municipal waste by landfill than most other European Union countries

1.1 Disposing of biodegradable waste, such as vegetation, waste food, paper or card, in landfill is detrimental to the environment. Research by Cambridge Econometrics in 2003 found that, in terms of emissions to air, landfill gas (mainly methane and carbon dioxide, which are harmful to the environment and contribute to global warming), created by the decomposition of degradable wastes in landfill, can be emitted for up to 30 years after closure of a landfill site.¹⁵ The research also found that volatile organic compounds (such as benzene and vinyl chloride) that are toxic or carcinogenic may cause health effects in nearby areas. Emissions to soil and water, termed leachate, may continue for several hundred years, and typically contain very high concentrations of organic compounds and heavy metals, detrimental to human health. Appendix 2 summarises the main types of alternative methods of waste management that can be used instead of landfill.

1.2 The United Kingdom has disposed of a higher proportion of municipal waste by landfill than most other European Union countries (see Figure 1 overleaf).¹⁶ Some 26 million tonnes (75 per cent) of local authority waste was landfilled in the United Kingdom in 2003-04, compared to 38 per cent in France, and 20 per cent in Germany. The reliance on landfill in the United Kingdom could reflect the relative abundance of potential sites as a result of past mining and quarrying activities.

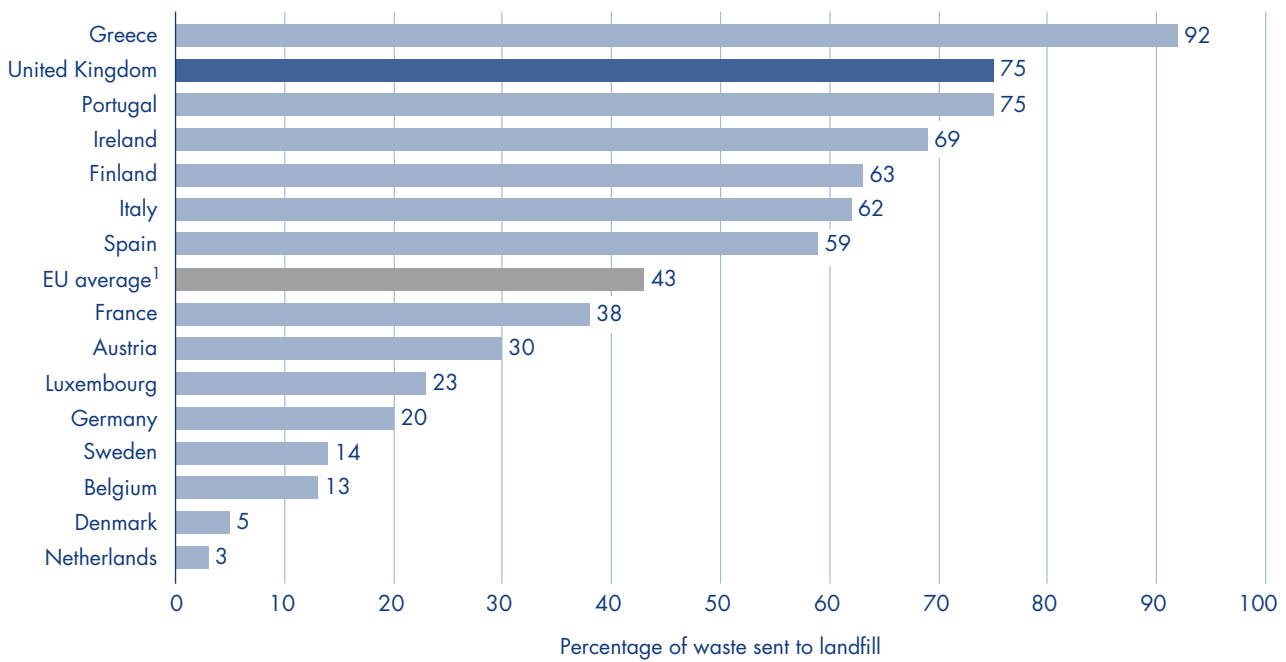
1.3 The proportion of biodegradable materials in each tonne of residual waste will vary according to where the waste has been collected and the extent of recycling by local authorities. Local authorities do not routinely measure how much waste is biodegradable. The Department estimates, however, that around 68 per cent of municipal waste is biodegradable, and we have used this proportion in our calculations.¹⁷

15 A study to estimate the disamenity costs of landfill in Great Britain, Cambridge Econometrics on behalf of the Department for Environment, Food and Rural Affairs (2003).

16 The European Union definition of municipal waste is household waste and waste of a similar composition as household waste. In the United Kingdom this definition has been interpreted as all waste under the control of a local authority, and includes household rubbish, street litter and collected trade waste. This interpretation varies across Europe, however.

17 Waste and Emissions Trading Act 2003, Section 21. Biodegradable municipal waste is as any waste product collected by a local authority that can be broken down by bacteria. It includes paper, card, organic matter (e.g. food and garden waste) and other elements such as some textiles. The estimate is based on research by WRAP Ltd.

1 The proportion of municipal waste sent to landfill in 2003



Source: Eurostat

NOTE

¹ The EU average bar represents the average for the 15 Member States shown. We have used data for 2003 as this is the most recent year where there are comparable data from each country.

The Government aims to reduce the amount of waste sent to landfill sites in England in order to meet European Union targets

1.4 In 1999, the European Union introduced the Landfill Directive, requiring all Member States to reduce the amount of biodegradable municipal waste going to landfill. The aim of the Directive is to reduce the negative effects on the environment of landfilled waste.¹⁸ The Landfill Directive targets for the United Kingdom are:

- By 2010, to reduce the amount of landfilled biodegradable municipal waste to 75 per cent of that arising in 1995 (i.e. to about 14 million tonnes).
- By 2013, to reduce the amount to 50 per cent of that arising in 1995 (i.e. to about 9 million tonnes).
- By 2020, to reduce the amount to 35 per cent of that arising in 1995 (i.e. to about 6 million tonnes).¹⁹

18 Council Directive 1999/31/European Commission of 26 April 1999 on the landfill of waste. Its aim is set out in Article 1 as “to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from the landfilling of waste, during the whole lifecycle of the landfill.”

19 The European Union agreed to defer the target dates by four years because the United Kingdom landfilled more than 80 per cent of its municipal waste in 1995.

1.5 The majority of the reductions in landfill required to meet European Union targets come from England (see Figure 2). On the basis of the estimated amount of biodegradable municipal waste landfilled in each country in 2003-04, local authorities in England will have to achieve reductions of at least 3.5 million tonnes a year by 2010, a further 3.7 million tonnes by 2013, and a further 2.3 million tonnes by 2020. The amount to be diverted by 2010 will be even more if the total amount of biodegradable municipal waste collected by local authorities increases.

2 Biodegradable municipal waste landfill targets for England, Scotland, Wales and Northern Ireland

Country	Actual amount in 2003-04	Maximum amount of biodegradable municipal waste to be sent to landfill (million tonnes):		
		By 2010 ¹	By 2013 ²	By 2020 ³
England	14.7	11.2	7.5	5.2
Scotland	1.8	1.3	0.9	0.6
Wales	0.9	0.7	0.5	0.3
Northern Ireland	0.7	0.5	0.3	0.2
Total	18.1	13.7	9.2	6.3

Source: National Audit Office

NOTES

- 1 Target is 75 per cent of the amount arising in 1995, to nearest 100,000 tonnes.
- 2 Target is 50 per cent of the amount arising in 1995, to nearest 100,000 tonnes.
- 3 Target is 35 per cent of the amount arising in 1995, to nearest 100,000 tonnes.

1.6 To help local authorities meet the Directive's targets, the Department has a Waste Implementation Programme, which consists of various initiatives to encourage alternative disposal methods, particularly recycling and the minimisation of waste produced. In 2006, the Department is carrying out a major review of its 2000 Waste Strategy to see, amongst other things, what more needs to be done to meet the Landfill Directive targets.

1.7 Failure to comply with the European Union Directive could result in fines for non-compliance. If the United Kingdom fails to meet the Landfill Directive targets, the Prime Minister's Strategy Unit suggested the United Kingdom could be fined up to £180 million a year.²⁰ We have identified three previous cases where a Member State incurred a fine for failing to comply with a Directive.²¹ One of these related to Greece's failure to comply with waste legislation on Crete and led to a fine of €20,000 (around £14,000) a day.

- 20 *Waste not, Want not, A strategy for tackling the waste problem in England*, Prime Minister's Strategy Unit, November 2002, Paragraph 3.5. The European Commission can enforce payment from Member States by means of lump sum payments, the use of periodic penalty payments or a combination of the two. The Commission calculates the amount to be fined by means of a coefficient for seriousness and duration. This result is then multiplied by an amount fixed by country taking into account the ability of the Member State to pay and the number of its votes in the Council. For further details see Commission Communication – Application of Article 228 of the EC Treaty (SEC (2005) 1658).
- 21 *Financial Penalties for Member States who fail to comply with Judgments of the European Court of Justice: European Commission clarifies rules*, European Commission, MEMO/05/482, 14/12/2005. There are many more actions against Member States for failure to fulfil obligations (193 in 2004, for example – see Annual Report 2004, European Court of Justice, Table 10, page 176).

The Department for Environment, Food and Rural Affairs must work closely with local authorities to achieve the targets for landfill

1.8 Waste collection and disposal is a key responsibility of the 388 local authorities in England. According to local authority returns to the Department for Environment, Food and Rural Affairs (the Department), municipal waste collection and disposal will cost £2.4 billion in 2005-06. Although the Department's relationship with local authorities is mainly to provide guidance and support, it has used a combination of penalties and grants to encourage authorities to increase recycling and reduce reliance on landfill:

- The Department of the Environment introduced the Landfill Tax in October 1996 to encourage more sustainable waste management by local authorities and divert waste from landfill.²² The standard tax rate for municipal waste rose to £15 a tonne from April 2004 and to £18 a tonne from April 2005. It is then set to rise by at least £3 a tonne a year, on the way to a medium-to-long term rate of £35 a tonne.
- The Landfill Allowance Trading Scheme, which began in April 2005, sets gradually reducing allowances for all disposal local authorities for the amount of biodegradable municipal waste that can be landfilled each year. If met, the allowances will collectively fulfil the Landfill Directive requirements. Financial penalties for exceeding allowances are fixed at £150 a tonne.

- The Waste Implementation Programme was set up in 2003 with a budget of £290 million over three years.²³ The Programme consists of various initiatives to encourage alternative disposal methods, particularly recycling and the minimisation of waste produced.
- Since 1997, the Department and its predecessors have allocated £856 million Private Finance Initiative credits to local authorities.²⁴ Private Finance Initiative schemes are intended to provide integrated waste management solutions (i.e. for collection and disposal). Seven waste Private Finance Initiative contracts have been signed, while a further 11 have been approved in the last three years but are still in procurement.

The scope of our work and our approach

1.9 We examined the Department's progress in reducing reliance on landfill in England. We sought evidence from a range of sources in our examination and further details of our methodology are in Appendix 3. In the rest of the United Kingdom, responsibility for waste disposal rests with the Scottish Executive, the Welsh Assembly Government and the Northern Ireland Executive. Audit Scotland is planning to publish a review of waste management in the first half of 2007. The Wales Audit Office published a report on waste management regulation in October 2004.²⁵ The Northern Ireland Audit Office published a report on waste management in June 2005.²⁶

²² Landfill tax was introduced at two rates: a standard rate for active waste (substances that either decay or contaminate land - which includes household waste) at £7 a tonne; and a lower rate for inert materials at £2 a tonne.

²³ This budget figure covers 2003-04 to 2005-06. The £336 million Challenge Fund discussed in part 4 predates the Waste Implementation Programme.

²⁴ Private Finance Initiative credits allow public bodies to secure private sector funding for the capital part of a proposed scheme.

²⁵ Environment Agency Wales: Regulation of Waste Management, Wales Audit Office, October 2004.

²⁶ Northern Ireland's Waste Management Strategy, Northern Ireland Audit Office, HC 88, Session 2005-06.



PART TWO

Earlier delays in taking action made the European Union targets more difficult to achieve



Continued growth in the amount of biodegradable municipal waste produced will make the European Directive targets more difficult to achieve

Amounts of biodegradable municipal waste collected continue to grow

2.1 Based on local authority data, amounts of municipal waste collected in England have increased each year over the last decade, from around 24.5 million tonnes in 1996-97 to an estimated 29.1 million tonnes in 2003-04. The 19 per cent increase in waste produced could be due to a number of factors: population, which has increased by 3.2 per cent; a possible increase in goods and services bought; the increased targeting of green waste for collection; and increased local authority collections from commercial entities.²⁷ Using the Department's estimate that 68 per cent of waste is biodegradable, the amount of biodegradable municipal waste collected in England increased from 16.7 million tonnes in 1996-97 to 19.8 million tonnes in 2003-04, further increasing the amount needing to be diverted from landfill.

2.2 The increase in volumes of municipal waste collected reflects trends outside England. Volumes increased by 3.3 per cent in Scotland and 10.9 per cent in Wales between 2000-01 and 2003-04. Elsewhere, our consultants, SLR Consulting, compared the average growth in waste per person a year between 1995 and 2003 across 10 European countries. **Figure 3 overleaf** shows a 2.6 per cent increase for the United Kingdom, compared to 1.1 per cent in the Netherlands and 4.6 per cent in Ireland.

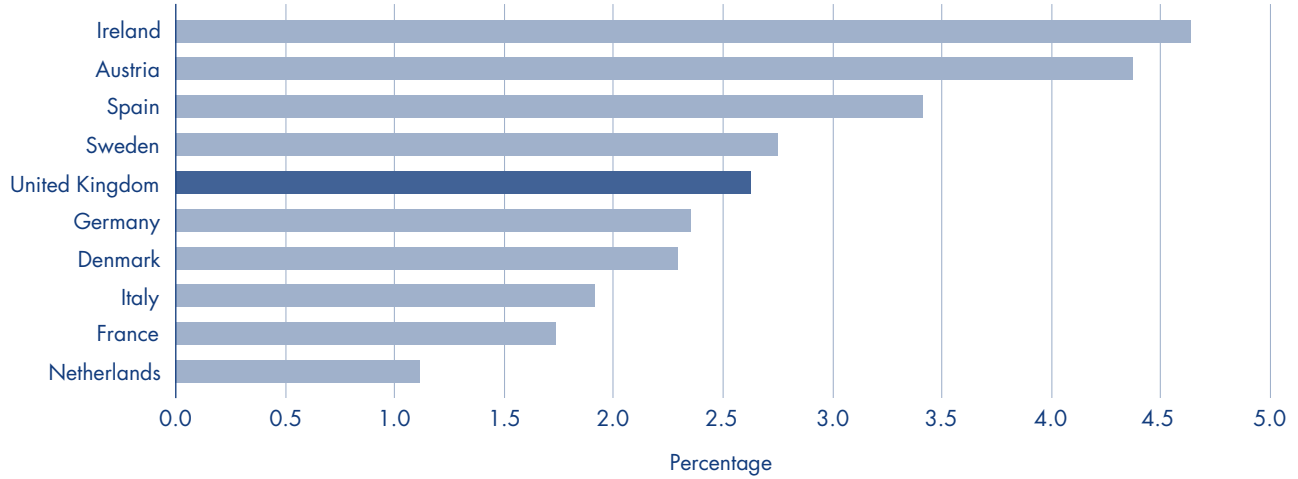
2.3 It is difficult to predict accurately the amount of biodegradable municipal waste likely to be generated over the next five years, but further increases are likely. The latest local authority data suggest the tonnage of waste collected rose in 2004-05.²⁸ Assuming a causal link between productivity and the amount of waste collected, the Treasury forecasts of a 2.25 per cent growth in the Gross Domestic Product in 2006, rising to 2.75 per cent in 2007 and 2008, suggest further increases in volumes of waste are likely. A 1.5 per cent growth in waste collected each year from 2001-02, for example, would lead to 22.1 million tonnes of biodegradable municipal waste in 2010, of which some 10.9 million tonnes would need to be diverted from landfill to meet the target (see **Figure 4 overleaf**). A 2.5 per cent a year growth in waste would raise the amount of biodegradable municipal waste to be diverted by 2010 to 12.8 million tonnes. Continued growth would further raise the amount to be diverted by 2013.

²⁷ The increase in goods and services is based on the increase in the Retail Sales Index by 36.5 per cent over the period. The increased targeting of green waste is based on analysis of household waste composition and factors driving waste increases by WRAP (2002).

²⁸ The estimate is based on data returns for 50 per cent of local authorities plus estimates for the remaining authorities.

3 Growth in municipal waste per person a year between 1995 and 2003 in Europe

Growth in waste per person a year between 1995 and 2003



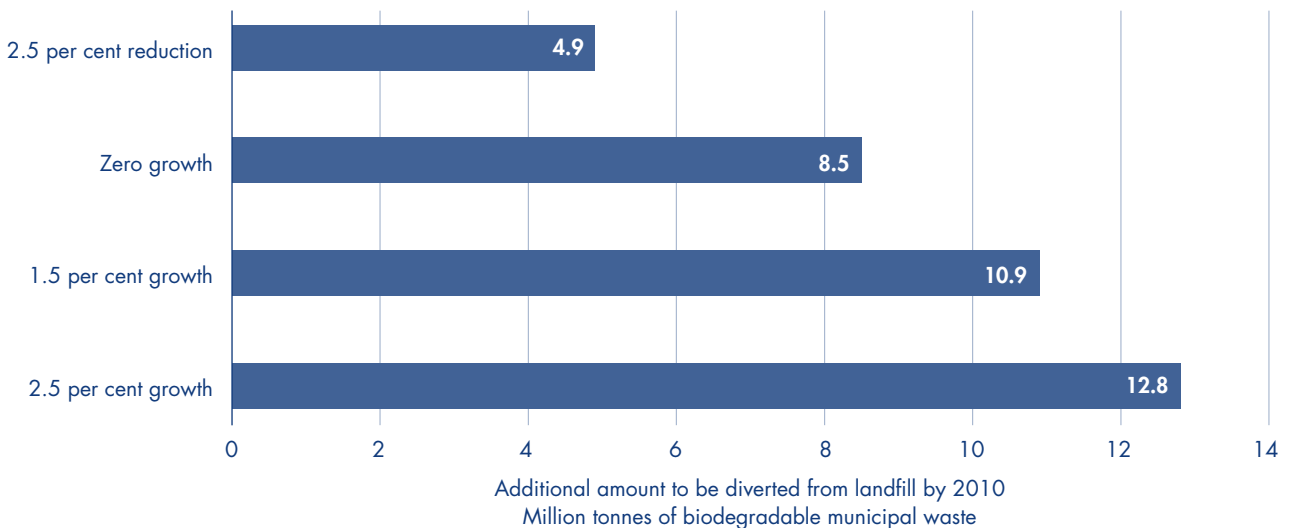
Source: National Audit Office

NOTE

The Department noted that, although the Netherlands has the lowest increase, it has the highest amount of household waste arising per person in Europe because it has, for several years, followed a mass biowaste diversion strategy. This strategy diverted kitchen and garden waste away from landfill. The collection of so much waste has therefore contributed to the Netherlands having had the lowest growth in waste arising per person. Home composting was not promoted in the Netherlands and their government is apparently now considering how to promote it as a waste minimisation measure.

4 Potential amounts of biodegradable municipal waste to be diverted from landfill to meet the 2010 target, based on different growth rate assumptions

Assumed annual growth rate to 2010



Source: National Audit Office

The United Kingdom's historic heavy reliance on landfill left it poorly positioned in relation to many European countries who have already achieved their targets to reduce reliance on landfill

2.4 Many other European countries have already met the European Union Directive targets on waste. As **Figure 5** shows, our consultants confirmed that seven of the countries they compared with the United Kingdom have already met their targets for 2006 and five have already met their 2016 targets. The European Union agreed to defer the target dates for the United Kingdom and Spain by four years because they sent more than 80 per cent of their municipal waste to landfill in the baseline year.²⁹

5 Progress of a range of European Union states against Landfill Directive targets

Member State	Landfill target for relevant year already met?		
	2006	2009	2016
Austria	✓	✓	✓
Denmark	✓	✓	✓
France	✓	✓	✗
Germany	✓	✓	✓
Ireland	✗	✗	✗
Italy	✓	✗	✗
Netherlands	✓	✓	✓
Sweden	✓	✓	✓
	2010	2013	2020
Spain	✗	✗	✗
UK	✗	✗	✗

Target met ✓ Target not met ✗

Source: National Audit Office

2.5 In part, cultural and historical differences in waste management explain why some European countries are ahead of the United Kingdom in diverting waste. In 1995, for example, Austria, Denmark, France, Germany, the Netherlands and Sweden already landfilled less than half their municipal waste. Our consultants highlighted the reasons for this as a greater acceptance of energy from waste as an alternative method of disposal and fewer available landfill sites.

2.6 Other European countries have generally made greater progress in using alternative methods of waste disposal since 1995 than England. With the exception of Ireland and Spain, the other European countries included in our comparison had achieved a steady reduction in the amount of municipal waste landfilled since 1995. Italy has achieved a significant reduction in landfill since 1995, with the amount falling from 24 million tonnes to 18 million tonnes in 2003. This contrasts with England, which did not achieve any reductions in amounts landfilled until 1999.

2.7 Our consultants identified a number of common features among European countries that had made progress in diverting waste from landfill since 1995:

- a greater acceptance of energy from waste as an alternative form of waste disposal;
- timely and clear promotion of preferred alternatives to landfill;
- encouraging investment in facilities through strategic planning and clear guidance on measurement of waste and operating standards of facilities;
- provision for municipalities to charge for waste collection;
- comparatively high landfill costs through taxes or high industry costs; and
- infrastructure development risks shared between private investors and central or local Government.

²⁹ Report from the Commission to the Council and the European Parliament on the national strategies for the reduction of biodegradable waste going to landfills pursuant to Article 5(1) of Directive 1999/31/EC on the landfill of waste, European Commission, 2005.

Departmental strategies to tackle waste, prior to the Strategy Unit report in 2002, lacked the clarity required to encourage quicker progress

2.8 There were four consultation papers and strategies on waste management between 1995 and 2000. The strategies included a range of targets to increase recycling:

- 'Making Waste Work: A strategy for sustainable waste management in England and Wales', (1995). This set a target of recycling 25 per cent of household waste by 2000. Although the target would reduce reliance on landfill, it was not sufficient on its own to achieve the reductions in landfill required to meet the European Union Directive.
- 'Limiting Landfill' (1999) – a consultation paper produced to stimulate discussion on possible options for reducing the amount of waste sent to landfill.
- 'A way with waste: A draft strategy for England and Wales' (1999). No targets set.
- 'Waste Strategy 2000' – this set targets of 25 per cent recycling for 2005, 30 per cent for 2010 and 33 per cent for 2013.

2.9 Our analysis of these strategies indicate that they lacked clear actions, responsibilities and timetables to reduce reliance on landfill (see Appendix 4). In 2001 the Prime Minister commissioned the Strategy Unit to review the Waste Strategy in England and Wales with a particular focus on the requirements of the Landfill Directive. The resulting report stated that the focus should be on reducing, re-using and recycling waste.³⁰ The report made 34 recommendations to reform incentives, regulations and funding and delivery measures but the initial government response accepted only 13 of these, was cautious of 17 and rejected four. In addition, the 'Waste Not Want Not' strategy proposed an increase in the 2015 household recycling target from 33 per cent in Waste

Strategy 2000 to 45 per cent. However, this was never adopted. The Department's current target is 'to enable at least 25 per cent of household waste to be recycled or composted by 2005-06, with further improvement by 2008'.³¹ The Department consulted publicly on proposed revisions to its approach between February and May 2006 and plans to issue a new strategy by the end of 2006. In its consultation document the Department proposes to increase recycling and composting targets to 40 per cent by 2010 and 50 per cent by 2020. The former would align the target level of recycling with that expected to be necessary to achieve the 2010 landfill diversion target.

The Landfill Allowance Trading Scheme provides a financial incentive for local authorities to divert biodegradable municipal waste from landfill, but the absence of timely and accurate data could undermine its effectiveness

2.10 The Department's Landfill Allowance Trading Scheme, which began in April 2005, seeks to encourage further reductions in biodegradable municipal waste going to landfill and more effective local authority collaboration in developing alternatives. Under the Scheme, waste disposal authorities were allocated allowances for the tonnage of biodegradable waste they could send to landfill. The allowances from 2009-10 onwards are based on the proportions of local authorities' waste arising in 2001-02 (i.e. if a local authority had one per cent of the waste arising in England it has been allocated one per cent of England's available allowances). To allow a smooth transition into the scheme, allocations between 2005-06 and 2008-09 gradually decrease from the amount of biodegradable municipal waste landfilled in the base year (2001-02) to the authorities' 2009-10 allocation. Each allowance entitles an authority to landfill one tonne of biodegradable municipal waste.

30 Key points, Pages 5-7, 'Waste Not Want Not', Prime Minister's Strategy Unit, 2002.

31 Target 6, Public Service Agreement 2005-2008, Department for Environment, Food and Rural Affairs.

2.11 The Department has confirmed that any English authority which landfills in excess of the allowances it holds after the reconciliation period will be liable to a financial penalty of £150 a tonne.³² Appendix 5 summarises the allowances set for each waste disposal authority. Authorities who already operate within their allowance could benefit from further reductions because they are entitled to sell their spare allowances to other authorities. Waste collection authorities, responsible for much of England's recycling effort, are not tied into the scheme by regulation but are encouraged to work with waste disposal authorities to support landfill diversion and provide waste statistics.

2.12 The effectiveness of the Scheme will depend on the Department's rigour in imposing penalties and other sanctions and on the completeness and timeliness of the data from local authorities and waste disposal contractors. There is a potential risk that authorities might believe the Government would not in practice impose penalties because of the impact on council taxes, but the Department confirmed to us that penalties will be imposed if allowances are exceeded.

2.13 We found relevant data on amounts of waste sent for treatment and disposal in the past, however, were neither complete nor timely. During the first Scheme year many authorities failed to meet the deadlines for quarterly reporting of waste data. By July 2006, however, only one of the 121 waste disposal authorities had not submitted the data for the first Scheme year (April 2005 to March 2006).

2.14 The Environment Agency's validation of these returns has been delayed because in many cases the data were not of sufficient quality to pass the first stage validation process which is required before the Agency's validation can begin (at 10 July 2006 only 21 authorities had completed this stage for the first Scheme year). In addition, waste disposal authorities rely on data from their constituent waste collection authorities before reconciliation can take place. There is, however, no

mandatory requirement for waste collection authorities to submit such returns (only waste disposal authorities are required to supply data under the Waste and Emissions Trading Act 2003).³³ As a result there is a risk, that the scheme will lose credibility due to the late or inaccurate notification of validated results to authorities. In Wales, where the Landfill Allowance Trading Scheme began six months earlier, the Environment Agency found a 10 per cent discrepancy in returns between local authorities' recorded figures and operators' figures in the first quarter. The discrepancy in England may be larger since in urban areas the link between collection and final disposal passes through a number of intermediaries.

2.15 An innovative feature of the Scheme is the ability granted to authorities to offset their biodegradable municipal waste liability by trading their allowances. Authorities can buy or sell allowances now and for future years when it is advantageous for them to do so. They can also bank 5 per cent of their allowances for the following year or borrow up to 5 per cent of their following year's allocation. No banking or borrowing is allowed into or out of a target year (i.e. 2009-10, 2012-13 or 2019-20). By March 2006 just over half a million tonnes of allowances had been traded for periods up to 2008-09 at a cost of £10 million, with 16 authorities active in the market.³⁴

2.16 The Landfill Allowance Trading Scheme allows the national target for diversion to be achieved even if all authorities do not have the infrastructure in place in their area. There is a risk for some authorities planning to use the trading system to meet their allowances, however, since there is no guarantee the required level of allowances will be available at an affordable price in future years. This risk reflects the benefit of a flexible, market based mechanism such as the Landfill Allowance Trading Scheme. The Scheme thereby encourages authorities to avoid the possible long term problem of a lack of allowances by investing, in the shorter term, in appropriate new waste treatment facilities.

³² At the end of each financial year, each local authority has three months to submit its data returns to the Environment Agency. The Agency then has two months to calculate how much biodegradable municipal waste each authority has landfilled following which there is a one month reconciliation period during which authorities can bank, borrow, buy and sell allowances to deal with any surplus or shortfall in allowances. Similar schemes operate in Wales and Scotland but there are differences regarding the application of fines and trading of allowances.

³³ Section 13 of the Waste and Emissions Trading Act 2003.

³⁴ Information on authorities' Landfill Allowance Trading Scheme allowances and trades is available at <http://lats.defra.gov.uk>.

PART THREE

Without a step change in existing local authority plans, England will not achieve its share of the reductions in landfill the European Union requires by 2010 and 2013



At the current rate of progress, there is a significant risk of local authorities failing to divert sufficient biodegradable municipal waste from landfill to meet European Union targets

Achieving the European Union targets depends on developing some 15 million tonnes of new waste processing capacity

3.1 We reviewed the outputs of a Departmental steering group set up to oversee the development of a model to forecast the likely impact of different initiatives to reduce reliance on landfill.³⁵ The model takes account of, among other things: disposal method costs; existing and planned capacity; build times; taxes, penalties, targets and the Landfill Allowance Trading Scheme; and “pressure factors” to reflect non-financial issues (e.g. the political unpopularity of certain technologies reflecting public opposition).

3.2 To divert sufficient waste from landfill, the Department’s model (see **Figure 6 overleaf**) indicates the need for:

- significantly increased rates of recycling and composting to around 40 per cent by 2010;
- an increased requirement for residual waste treatment, including energy from waste (using refuse-derived fuels) for post-recycling residues;
- mechanical and biological treatment plants becoming operational between 2005-06 and 2012-13.

Incinerating waste in an energy from waste plant involves burning materials in a controlled condition and, where possible, using the heat to generate power. The inert waste can then be landfilled or used by the construction industry. The mechanical and biological treatment of waste typically involves a drying and bulk reduction process prior to disposal in landfill (see Appendix 2).

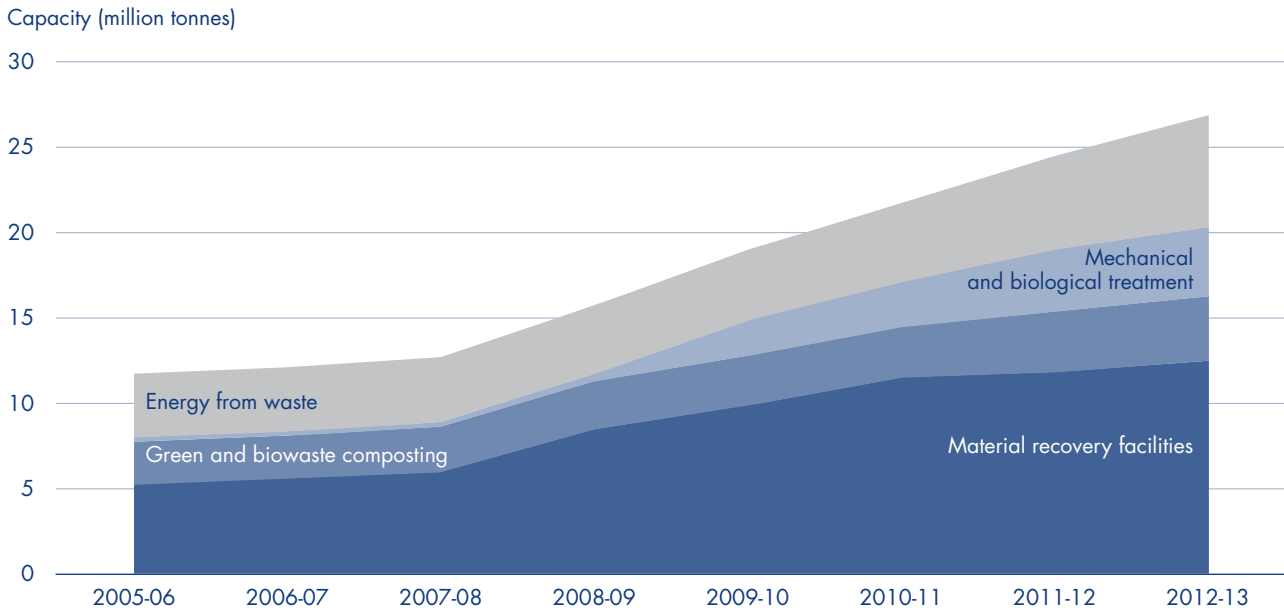
There is a significant risk of missing the Landfill Directive targets

3.3 Our participation in the Department’s development of a forecasting model enabled us to examine the rigour of the assumptions used. The Department’s modelling indicates that, if all existing plans for waste treatment facilities were realised within one year of their planned delivery date, the 2010 target could be met, implying a national recycling rate of around 40 per cent. The Department’s model implies local authority yearly municipal waste management costs will rise from just under £2 billion in 2003-04 to £3.4 billion in 2009-10 and £4.2 billion in 2012-13 to fund new waste management practices.³⁶ Yet such an increase could face opposition. Our survey found 39 per cent of the public think local authorities should be “most concerned about minimising the cost to council taxpayers when collecting and disposing of household rubbish.” We also found, however, that half of the public did not know how much they paid for their waste collection and disposal. Of those that did, the most popular choice was over £200 a council taxpayer a year. The actual average is around £75 a council taxpayer a year.

³⁵ The Local Authority Waste Recovery Recycling and Disposal Model.

³⁶ Costs in constant 2003-04 prices.

6 Increases in waste treatment and disposal capacity indicated by the Local Authority Waste Recovery Recycling and Disposal model as needed to meet European Union targets



Source: National Audit Office and AEA Technology

3.4 The Office of Government Commerce’s survey of waste disposal authorities in Autumn 2005 asked about progress in developing the new capacity needed to meet the Landfill Allowance Trading Scheme allowances. Eighty seven out of 121 authorities replied, of which less than one in five were entirely confident that they would divert the required level of biodegradable municipal waste and some one in three had not yet identified how they proposed to dispose of waste other than by landfill. On present plans, we estimate that authorities would miss their 2010 landfill allowances by approximately 190,000 tonnes and their 2013 allowances by approximately 960,000 tonnes.³⁷ Extrapolated to a national level, the figures would be 268,000 tonnes and 1.37 million tonnes, respectively.³⁸ On this basis, we estimate potential penalties could be as much as £40 million for missing the 2010 targets and £205 million for missing the 2013 targets (details in Appendix 6).

3.5 There is still an opportunity for authorities to amend or develop their plans to address any shortfall in alternative disposal capacity, although there is considerably more scope to do this in relation to the 2013 target rather than that for 2010. As things stand in Summer 2006, it may be too late for authorities to bring forward plans for new residual waste treatment facilities and have them ready in time for 2010, although such action could contribute to meeting the 2013 target. However, completion of new recycling and composting plants, as well as mechanical biological treatment plants, should still be achievable if procurement processes are already in hand.

37 This is net of the tonnage below allowances for authorities who are forecasting that their target will be met, so takes into account the impact of trading allowances.

38 These tonnages were grossed up to a national level using Landfill Allowance Trading Scheme allowances for each authority in England.

In the longer term, greater reliance on large new waste processing facilities depends upon overcoming public concerns

3.6 Our public survey confirmed that a significant minority of people recognise the need for local alternatives to landfill. Twenty seven per cent thought that there are enough places to dispose of rubbish locally for the foreseeable future, whereas 43 per cent thought that there was a need to 'build more facilities in the local area now'. Achieving the 2010 target depends on greatly increasing recycling while ensuring that other planned facilities are delivered on schedule. In the longer term, though, much more will have to be done to process the residual waste that cannot be recycled, particularly through greater use of energy from waste as a disposal option.

3.7 Progress in creating such waste disposal capacity depends on overcoming public perceptions that burning municipal waste creates a health hazard. Our public survey found that 53 per cent of people consider that 'there is no firm evidence to show that plants that burn rubbish are a health hazard', compared to 47 per cent who disagreed. There was no statistical difference between respondents with children and those without.

3.8 In 2004, the Department commissioned research to bring together the literature and evidence on the relative health and environmental effects of all the different waste management options.³⁹ The Department concluded: *"The review found no evidence to suggest that the current generation of municipal solid waste incinerators is likely to have an effect on human health. ... Compared with other waste management technologies, incineration produces the largest emissions of oxides of nitrogen and hydrogen chloride per tonne of municipal solid waste. However the potential negative effects, such as dust, poor air quality and effects on flora/fauna, soils and water quality can be controlled under normal operating conditions."* The study considered risks to human health from incineration were small in comparison with other known risks. The Department's study noted that the Royal Society qualified these comments by stating that less work had been done on releases of biowastes to soil and water and there was no research data on the potential environmental and

health effects of composting and other pre-treatment technologies.⁴⁰ The Department's Waste Research Team has commissioned research into a number of themes that the Royal Society highlighted as needing further research.

3.9 Our consultants found considerable variation in the levels of public opposition to large scale residual waste facilities across Europe. In their view, the United Kingdom, Spain and Italy are characterised by large scale protests and mobilisation of public opinion against new facilities; opposition is less pronounced in Austria, Germany, Denmark and the Netherlands. Our consultants identified two key driving factors behind public acceptance of such technologies: understanding of alternative waste management options and the benefits that can accrue from them; and strict enforcement of environmental regulations. The government in Germany, for example, has sought to improve public awareness by highlighting the progressive reductions in dioxins emitted from energy from waste plants. Denmark closed a generation of energy from waste plants in the 1970s when it became apparent that dioxin emissions from the types of energy from waste plant in use at the time were potentially harmful to public health.

3.10 Our consultants concluded that delays by the Department (and its predecessors) in implementing environmental policies to reduce pollution from the waste management sector have undermined public confidence in England and Wales, a view shared by other experts whose opinion we sought. As a result, the public are not aware of the benefits and drawbacks of key waste disposal methods. Although it is difficult for us to validate our consultants' assertion that Government actions have led to public antipathy, our survey does confirm that a significant proportion of the public (33 per cent) recognise that they do not have a good idea of the relative pros and cons of different methods of disposing of household rubbish.⁴¹ The proportion of people who thought they did not have a good understanding was particularly high in London (45 per cent) compared to 29 per cent in the South of England. National and local public awareness campaigns on waste supported by the Department have in the past concentrated exclusively on recycling.

39 *Review of Environmental and Health Effects of Waste Management: Municipal Solid Waste and Similar Waste*, Enviro Consulting and University of Birmingham on behalf of the Department for Environment, Food and Rural Affairs (May 2004). The review looked at existing literature, compared emissions from different facilities and evaluated the health effects of facilities.

40 *Ibid.*, Appendix 4.

41 Our survey asked whether people agreed with the statement "I have a good idea of the pros and cons of different methods of disposing of household rubbish". Replies were as follows: Strongly disagree – five per cent; Disagree – 28 per cent; Agree – 52 per cent; Strongly agree – 15 per cent.

Local authorities require assistance in developing alternative methods of waste disposal

3.11 Our discussions with local authorities and the Local Government Association confirmed that managing landfill contracts was considered relatively straightforward and required less senior management oversight than many other areas of work in local government. Developing alternative methods of disposal requires a much greater range of expertise and experience. And the development and implementation of a waste disposal strategy requires collaboration with a wide range of stakeholders, including: planners; the public; engineers; and the waste industry; as well as finance and procurement experts in getting the funding and contracts in place.

3.12 The department has instigated a number of initiatives to develop good practices and skills in waste management:

- Technical help with technologies new to the United Kingdom - the Department's new technologies demonstrator programme (funded to a value of £30 million over three years) is intended to help promote technologies dealing with biodegradable municipal waste and non-incineration solutions. There are nine projects, most of which are intended to be operational in 2007. They are not intended to contribute significantly to targets themselves, but to encourage local authorities to adopt the technologies. Stakeholders saw considerable risks that many local authorities will have to commit to solutions before plants are operational and that it would be better to promote a few proven high-diversion technologies instead;
- WRAP's Performance Improvement Through Communications Initiative trains local authorities in how to run campaigns to increase uptake of recycling schemes;
- WRAP has developed a programme of briefings to inform council members on the benefits and drawbacks of alternative methods of waste disposal. By November 2005 briefings had been provided to 37 collection and disposal authorities (about 10 per cent of the total), although attendance was not mandatory;

- WRAP has introduced the Recycling Manager Training Programme and the Recycling and Organics Technical Advisory Team (ROTATE) to provide technical support;
- The Department's Local Authority Support Unit has produced a range of toolkits to guide local authorities through best practice approaches to aspects of waste management such as kerbside recycling schemes and developing waste strategies, and has also provided direct consultancy support to local authorities;
- The Department offers the Waste Technology Data Centre on the web, which provides detailed case examples of different technologies with costs and outputs, for local authority officers and members. The Department's Waste Implementation Programme impact survey identified that awareness and use of the Data Centre amongst its target audience was still at low levels;
- The Energy and Utility Skills Council within the Sector Skills Development Agency is developing schemes to boost skills and fill gaps in the waste management workforce.




3.13 The local authorities we contacted confirmed they would welcome more specific detailed advice on their approach to waste management. The Department has few staff available for liaison with authorities, however, and instead relies on consultants to provide support, mainly on recycling schemes. The creation of the Waste Implementation Programme, and the work of WRAP, have helped, as noted in the paragraph above, but, as our consultants SLR found, a key issue is the willingness of local authorities to deliver their own plans. Providing more in-depth, specific advice on schemes will require the Department to prioritise. Efforts might best be focused on the 25 waste disposal authorities which together send roughly 50 per cent of all biodegradable municipal waste tonnage to landfill (see Appendix 5). The Waste Implementation Programme is increasing its focus on major infrastructure projects, as recommended by the Office of Government Commerce, by: drawing together and improving public advisory services to local authorities through a new Waste Infrastructure Development Programme; modifying Private Finance Initiative criteria and guidance better to suit the waste market; strengthening links with the investment community; and developing an improved national overview of local authority infrastructure plans.⁴²

⁴² *Improving Competition and Capacity Planning in the Municipal Waste Market*, Office of Government Commerce, May 2006. The report's recommendations can be found at Appendix 1. The Waste Infrastructure Development Programme was announced by the Government in May 2006.

3.14 Our analysis of the returns sent by local authorities to the Department indicates that only six of the 25 authorities who send the most biodegradable municipal waste to landfill are very likely to achieve the 2010 target, but a further 14 have the opportunity to do so (Figure 7). Of the six in the strongest position, three have existing incineration capacity, two have incineration or mechanical and biological treatment plants under construction and the other has well-advanced plans for mechanical and biological treatment and composting facilities. Any authority not meeting its 2010 target may be able to buy additional allowances from other authorities. There is a risk, however, that there will not be enough additional allowances to meet demand, if England's Landfill Directive target is not being met as a whole.

3.15 Other local authorities would benefit from closer collaboration to pool skills and resources, and to achieve economies of scale. Our consultants highlighted that strong regional planning structures are a feature of European Union countries who have successfully diverted large amounts of biodegradable municipal waste from landfill. Cooperation between disposal authorities helps to overcome problems of affordability, the need to find a suitable site and economies of scale. The Office of Government Commerce survey of local authorities in 2005 established that only 15 per cent of waste contracts were collaborative.⁴³ In the East Midlands, for example, only two out of 68 authorities had collaborated. Whilst 124 authorities were considering some sort of collaboration, in most cases this was for collecting waste; only 25 per cent were considering collaboration for the disposal of waste.

7 Prospects for 25 key waste disposal authorities meeting the 2010 diversion target

Status	Number of authorities	Biodegradable municipal waste tonnage sent to landfill in 2003-04
 Authorities who are very unlikely to achieve the target by increasing recycling and have not started procurement of residual waste treatment capacity or who are at a very preliminary stage.	5 ¹	1.7 million tonnes
 Authorities whose procurement of capacity is more advanced or have scope to considerably increase recycling and composting rates, but still face a challenging timetable to achieve the required reductions in landfill.	14 ²	4 million tonnes
 Authorities where existing capacity, or capacity in an advanced stage of procurement, assisted by improved recycling performance, is highly likely to meet the target.	6 ³	1.7 million tonnes

Source: National Audit Office

NOTES

1 Bradford Metropolitan Borough Council, Leeds Metropolitan Borough Council, Lincolnshire County Council, Merseyside Waste Disposal Authority, Surrey County Council. Bradford is undertaking a major procurement initiative to increase diversion capacity. However, this is unlikely to be completed in time to meet its 2010 landfill allowance so it is now in the process of procuring alternatives for a short term solution to cover the intervening period. In January 2006 Surrey County Council approved a draft Action Plan as part of Surrey's Joint Municipal Waste Management Strategy. The consultation process has just ended and the Strategy is due to be adopted in September 2006. If adopted in its current form, there is scope for the plan to achieve the 2010 Landfill Allowance Trading Scheme target provided that there are no delays in planning and construction of new facilities thereafter.

2 Cheshire County Council, Devon County Council, Essex County Council, Greater Manchester Waste Disposal Authority, Hertfordshire County Council, Lancashire County Council, Leicestershire County Council, Norfolk County Council, Northamptonshire County Council, North Yorkshire County Council, Suffolk County Council, Western Riverside Waste Authority, West London Waste Authority, West Sussex County Council.

3 Derbyshire County Council, East London Waste Authority, Hampshire County Council, Kent County Council, North London Waste Authority, Nottinghamshire County Council.

43 To encourage a high response rate, the Office of Government Commerce undertook the survey on the basis that the identity of individual authorities responding would not be revealed.

3.16 Regional Spatial Strategies are produced by regional planning bodies with input and advice from Regional Technical Advisory Bodies, the Environment Agency, Government Offices for the Regions and the public. The Strategies should include a waste management strategy for the next 15-20 years. Individual waste planning authorities should prepare development documents including potential sites for new waste management facilities that comply with the Regional Spatial Strategy and support its objectives. This puts in place for the first time a system to implement regional strategies at local level, thus addressing a key weakness of previous systems.

Getting waste treatment facilities up and running in time to meet the European Union targets in 2010 and 2013 depends upon quickly learning and applying lessons from earlier waste disposal projects

3.17 Achieving the 2010 target will depend on existing plans for residual waste treatment facilities being realised on schedule and for an increase in capacity of several million tonnes in facilities of this type between 2010 and 2013. Getting a new waste treatment plant up and running is often complicated and can take considerable time. Hampshire County Council, for example, decided to replace and enhance its incineration capacity in 1996. Having identified suitable sites at locations with previous incineration operations, the three new energy from waste plants did not all become operational until 2005. The planning application and determination process took four years and contract procurement, construction and commissioning a further three. For the purposes of predicting local authorities' waste management behaviour, the Department assumes a nine-year timeframe for an energy from waste plant to progress from an identified need to being operational. We identified two factors likely to delay projects:

- The innovative nature of many schemes has led finance and waste disposal companies to be cautious of investment.
- Difficulty in securing planning permission.

The innovative nature of many schemes has led finance and waste disposal companies to be cautious about investment

3.18 The typical cost of an energy from waste plant is between £40 million and £100 million and a mechanical and biological treatment plant between £13 million and £50 million, depending on size.⁴⁴ The cost of new waste disposal facilities has led many local authorities to use the Private Finance Initiative to secure funds. By November 2005, ten of the 25 authorities with the largest tonnages going to landfill had at least expressed a firm intent to use the Private Finance Initiative.⁴⁵

3.19 Despite the key role of Private Finance Initiative schemes in delivering additional residual waste treatment infrastructure, only a few authorities have so far benefited. Nine years after the first Private Finance Initiative deals were signed, only two authorities have operational energy from waste facilities and four authorities have mechanical and biological treatment facilities operational or under construction.⁴⁶ The additional waste treatment capacity of these new facilities is just under 700,000 tonnes. Our analysis of the reports from local authorities indicate that the average procurement period for waste management contracts approved since 2000 was approximately two years (see Appendix 7). The results are similar to the findings of the survey conducted by the Office of Government Commerce in 2005, which found that Private Finance Initiative waste management contracts had taken, on average, some 26 months from date of advertisement to contract signature, compared to 10 months for standard waste management contracts.

3.20 Whilst recognising local authorities' autonomy in decisions, encouraging greater standardisation of approach amongst local authorities and less 'reinventing the wheel' could cut costs and reduce the time taken to complete each contract. The range and innovative nature of the proposed schemes increases the risk and uncertainty in the waste industry and amongst financiers. Stakeholders confirmed that projects perceived as high risk are priced accordingly, although it proved difficult for us to quantify these additional costs. Innovation can also lead to delays. More than 20 mechanical and biological waste treatment plants, for example, were among planned new facilities reported by 85 disposal authorities in

44 Eligibility of Energy from Waste – Study and analysis, Ilex Energy Consulting, March 2005.

45 Cheshire County Council, East London Waste Authority, Essex County Council, Greater Manchester Waste Disposal Authority, Lancashire County Council, Norfolk County Council, North Yorkshire County Council, Nottinghamshire County Council, Surrey County Council and West Sussex County Council.

46 East London Waste Authority, East Sussex County Council, Isle of Wight Council, Leicester City Council, Kirklees Metropolitan Borough Council and South Gloucestershire Council.

response to the Office of Government Commerce's survey. Progress on such facilities was delayed, however, because the Environment Agency did not finalise relevant guidance until Summer 2005.⁴⁷

3.21 Our review of existing projects for new mechanical and biological treatment plants indicates that up to 4 million tonnes of waste may be processed through such plants in England by 2013, whereas other countries have made only limited use of this technology. Our consultants established that in Germany and Austria, where mechanical and biological plants were first developed, capacity has reached only 1.5 million tonnes a year each. Whilst many waste authorities in England plan to turn the by-product into fuel blocks that can be burned, Germany and Austria continue to rely on sending the waste from these plants to landfill. The quality of the solid fuel produced has not been found appropriate for use in many existing facilities by these countries, except cement kilns where the requirements of the European Union Waste Incineration Directive are less restrictive.

3.22 The Department has recognised the market concerns and, in August 2005, recruited a senior figure from the corporate finance sector with experience in renewable energy projects to develop relationships with investors. The Department has engaged consultants to identify barriers to entry from overseas suppliers and run seminars to attract potential investors.

It is difficult to secure planning permission

3.23 Even once a proposal has been agreed, it can take a long time to get the necessary planning permission for a range of reasons, such as local opposition in principle to new waste facilities and poor preparation by the applicant (which might include insufficient early engagement with the forward planning process regionally and locally). According to data from the Department for Communities and Local Government, 40 per cent of major planning applications for waste disposal plants in 2003-04 took more than four months. Authorities planning energy from waste plants told the Office of Government Commerce that they were allowing between six and 26 months to gain approval, although in practice some cases might take much longer.

Approximately 10 per cent of applications were rejected outright in 2003-04. A report by the Royal Institution of Chartered Surveyors in 2004 noted that, in the past 10 years, there had been 21 planning applications for energy from waste plants in England but, of the eight on sites where no energy from waste plant had previously been located, only one small scheme has had planning approval.⁴⁸ In 2004-05 all five applications for facilities generating energy recovery through incineration were granted.

3.24 A major cause of delay and uncertainty in the planning process was caused by the requirement to identify a 'Best Practicable Environmental Option'. The Best Practicable Environmental Option required the local authority to identify which option offered the most benefits or the least damage to the environment, as a whole, at acceptable cost. Our interviews with local authority staff established that this process was regarded as a leading cause of planning obstructions for new facilities because each individual planning application had to repeat the process of assessing all the options available. The lack of an agreed format for the Best Practice Environmental Option left the proposals open to repeated challenge.

3.25 The Office of the Deputy Prime Minister (now the Department for Communities and Local Government) and the Department for the Environment, Food and Rural Affairs recognised that getting planning permission was an obstacle. In 2002 the *Waste Not Want Not* report recommended that the two departments revised planning guidance in this area as a priority.⁴⁹ The Government's response said consultation would take place in Spring 2004 with revised guidance in Summer 2004. In fact consultation took place in December 2004 and the new Planning Policy Statement 10 was published in July 2005 by the then Office of the Deputy Prime Minister but as part of the larger and integrated package with Department for Environment, Food and Rural Affairs sought by stakeholders, which included changes by the Department to the decision-making principles in Waste Strategy 2000 and the policy guidance for the preparation of Municipal Waste Management Strategies.⁵⁰ It will take time to secure the outputs and outcomes sought by the new Planning Policy Statement.

47 Relevant guidance: *The Waste Management Licensing (England and Wales) (Amendment and Related Provisions) Regulations (2005)*; *Guidance on monitoring mechanical and biological treatment and other re-treatment processes for the landfill allowances schemes (England and Wales)*.

48 *Can the waste planning system deliver?*, Royal Institution of Chartered Surveyors, 2004, page 77.

49 Planning Policy Guidance 10, one of a series of guidance notes on the operation of the planning system and development plans, with specific guidance relating to waste management.

50 Joint Ministerial Statement by Ben Bradshaw, the Parliamentary Under Secretary for Local Environment, and Yvette Cooper, the Minister for Housing and Planning, on Sustainable Waste Management, 21 July 2005.

PART FOUR

Recycling and minimisation need to contribute more to reducing the amount of biodegradable municipal waste sent to landfill



The amount of waste recycled each year has increased considerably, but it will become more difficult to maintain this rate of increase

Recycling and composting rates will need to continue increasing sharply if targets are to be met

4.1 According to local authority reports, the proportion of household waste being recycled or composted in England has increased by 12 percentage points since 2001 (see **Figure 8 overleaf**).⁵¹ The rate reached 23 per cent in 2004-05, suggesting the Department will meet its target of 25 per cent by 2005-06. Although local authorities recycled an additional 2.5 million tonnes of municipal waste between 1996-97 and 2004-05, this has been offset by a 21 per cent increase in waste tonnage collected by authorities over the same period. As a consequence, the Department's projections foresee a need for further sharp increases to nearly 40 per cent by 2010 and nearly 50 per cent by 2013 to meet European Union targets.

4.2 The United Kingdom's recycling and composting rate lags behind that of leading European countries (**Figure 9 overleaf**). Based on 2001 data, recycling rates in the Netherlands, Austria, Germany and Sweden were almost double the United Kingdom's. For the high waste generators such as Germany, France and Spain, composting represents a smaller proportion of the total amount of municipal waste managed, but still far more than the United Kingdom. In 2003-04 less than 4 per cent of municipal waste was composted in England.

4.3 Further increases in the aggregate municipal recycling rate will not necessarily lead to increases in the biodegradable recycling rate. About a third of household materials are not biodegradable, such as cans, glass and plastic (see Appendix 2). The Household Waste Recycling Act 2003 requires all authorities to collect at least two types of recyclable waste from households by 2010.

Departmental funding and advice has contributed to the increase in recycling, but some local authorities continue to lag behind

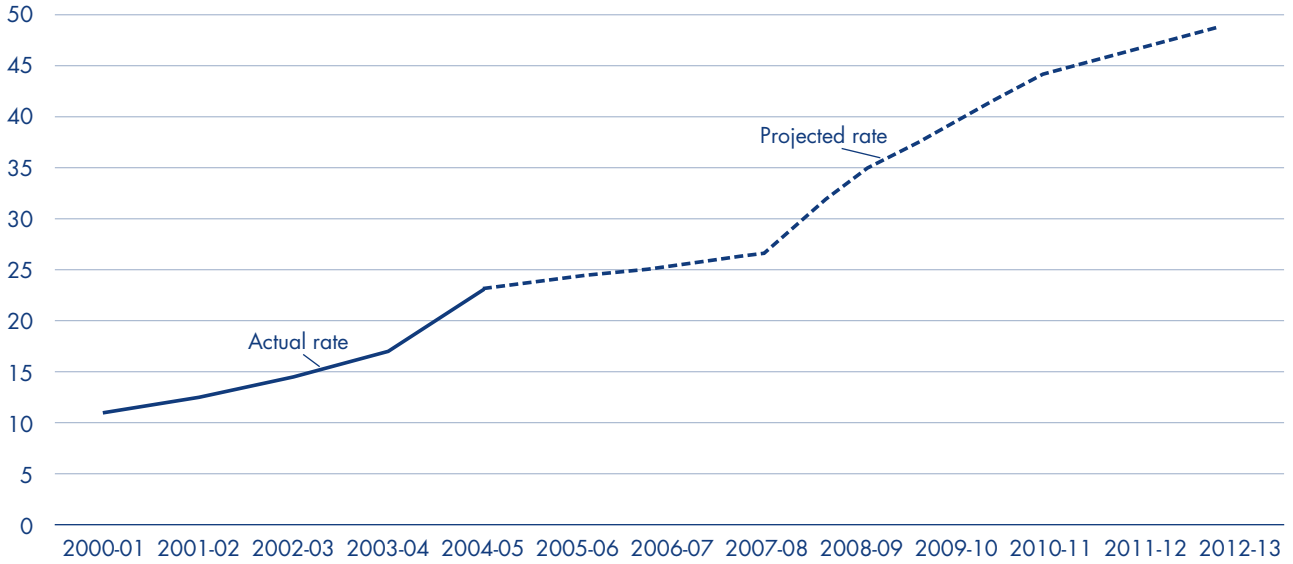
4.4 Levels of recycling have increased, but local authority data indicate wide variations in performance in 2004-05 (see **Figure 10 overleaf**).⁵² Ten authorities (2.5 per cent), such as St Edmundsbury Borough Council in Suffolk, recycle or compost over 40 per cent of their waste. In contrast, 70 authorities (18 per cent), such as the London Borough of Newham, recycle or compost less than 15 per cent. Authorities with higher recycling rates tended to collect organic waste (mainly garden waste) directly from households and had specific facilities to remove recyclable materials from general household waste.

51 This type of composting is different to that produced by a mechanical and biological treatment plant, which is of lower quality.

52 These recycling rates incorporate biodegradable and non-biodegradable wastes.

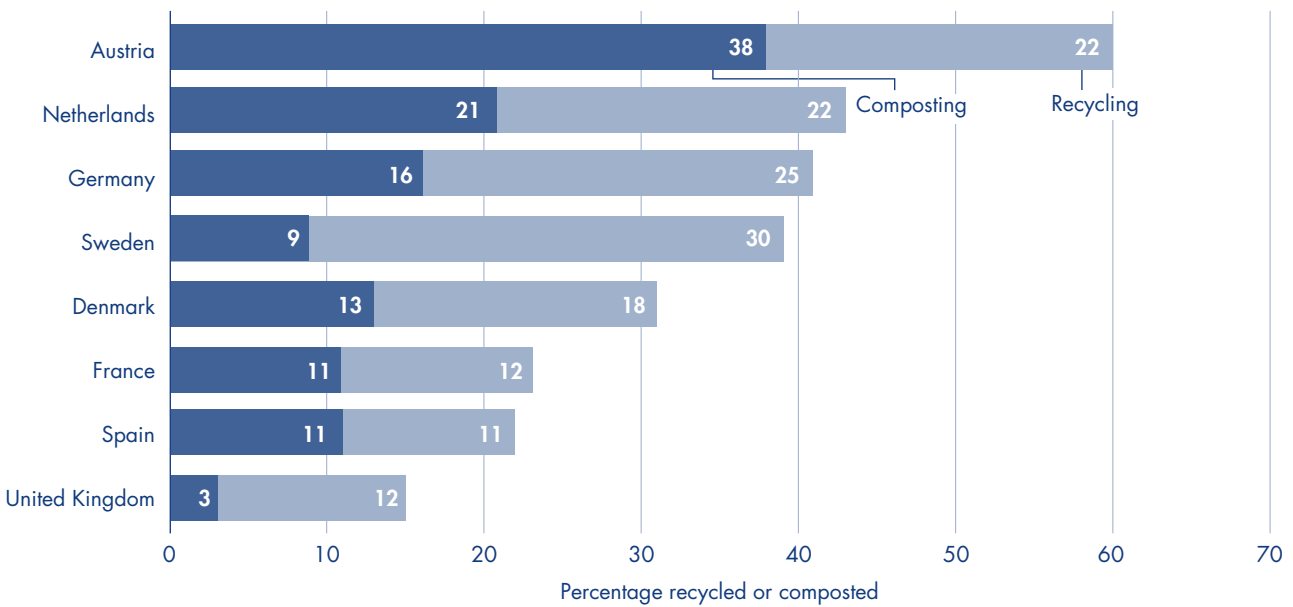
8 Recycling and composting rates since 2000-01 and future projections

Recycling rate (percentage of household waste recycled or composted)



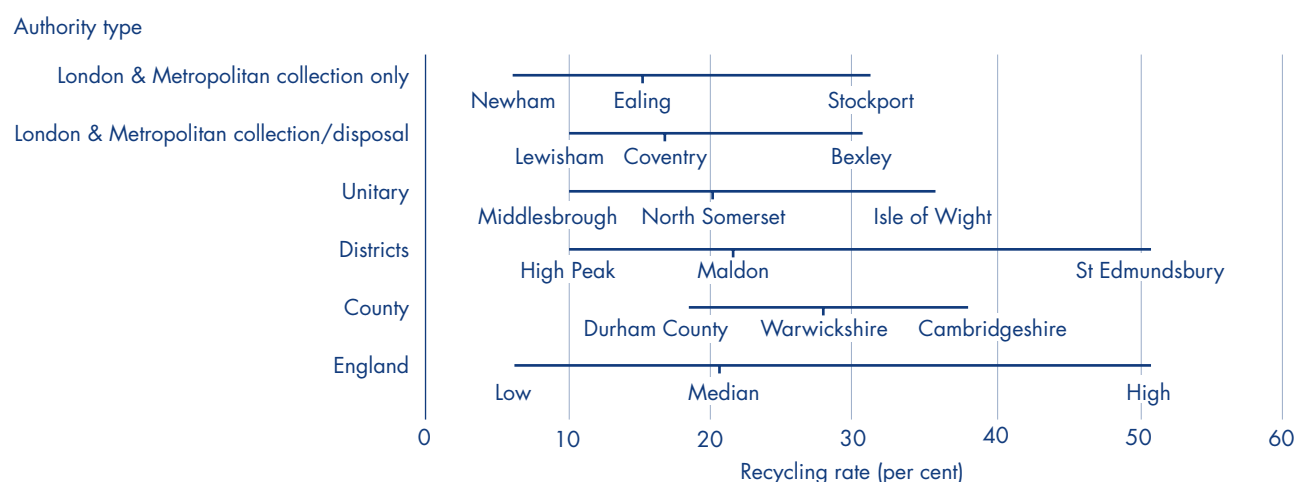
Source: Department for Environment, Food and Rural Affairs and AEA Technology

9 Recycling and composting rates in selected European countries in 2001



Source: National Audit Office analysis of data from Eurostat

10 Differences in recycling rates between local authorities in 2004-05



Source: National Audit Office analysis of Audit Commission data

4.5 The Department has provided £336 million in funding between 2002-03 and 2005-06 (through the Challenge Fund) to encourage local authorities to recycle more waste. The Department awarded grants on the basis of bids received from high-performing and low-performing authorities. Targets were set for each project, although funding was not dependent on their achievement. The Department distributed £131 million through the Challenge Fund in 2003-04, which contributed to an increase in recycled tonnage of 166,000 tonnes against a target of 222,000 tonnes (75 per cent). These schemes should yield greater benefits in future years as they become better established.

4.6 Although the grants are likely to have contributed to increased recycling, there is no clear link between the amount of the grant and the consequent increase in performance. Our analysis of the household recycling performance of unitary authorities between 2002 and 2005 shows that the level of Challenge Funding received by an authority does not correlate with its recycling performance during the period. **Figure 11 overleaf** shows that the recycling performance of directly funded authorities could vary by large amounts over the period.⁵³

4.7 In addition, the Department's Local Authority Support Unit and WRAP Ltd's Recycling and Organics Technical Advisory Team (ROTATE) provide advice to local authorities on recycling practices and to encourage public participation. A review of the Local Authority Support Unit by BeEnvironmental Ltd in December 2005 found that some 80 per cent of 77 local authorities who offered a view thought that the direct consultancy support, the largest part of the Unit's programme, provided "good value for money". A review of the Recycling and Organics Technical Advisory Team by Exodus Market Research in September 2005 found most of the 54 local authorities contacted considered the service helpful and that improvements had resulted, although 12 authorities (22 per cent) queried the quality of consultancy support. Performance appeared to have marginally improved when Exodus surveyed local authorities again in February and March 2006. Exodus found that, of 89 authorities surveyed, 13 (15 per cent) queried the quality of the consultancy support. Sixty-six of the authorities surveyed by Exodus (74 per cent) claimed to have acted on advice given. WRAP commissioned NOP to evaluate its public awareness campaign and found that by April 2006 the proportion of people classed as "committed recyclers" increased from 45 per cent to 57 per cent. Almost all local authorities have benefited from support provided by the Local Authority Support Unit or WRAP and it is very difficult to separate the impact of these services from other factors which might divert waste from landfill.

⁵³ These analyses do not include London, where it is the responsibility of the Greater London Assembly to distribute a block grant of Challenge Funding from the Department among individual authorities.

11 The highest and lowest changes in household waste recycling performance 2002-05, for those local authorities receiving financial support from the Challenge Fund

	Local Authority	Difference in recycling rate 2002-2005 (percentage points)	Challenge Funding (excluding Partnerships)	
			Amount	Date
Highest changes in recycling rate	Harborough District Council	38.2	£1.3 million	2003-04
	Rushcliffe Borough Council	36.0	£0.2 million	2002-03
	Cherwell District Council	35.2	£1.1 million	2003-04
	Waveney District Council	29.1	£1.5 million	2004-05
	Broadland District Council	28.9	£0.1 million	2002-03
Lowest changes in recycling rate	Sandwell Metropolitan Borough Council	1.5	£1.4 million	2003-04
	Hastings Borough Council ¹	1.2	£0.4 million	2004-05
	New Forest District Council	1.2	£0.2 million	2003-04
	Surrey Heath Borough Council ²	-2.6	£0.2 million	2002-03
	Kenet District Council ³	-4.6	£0.2 million	2002-03 and 2004-05

Source: National Audit Office analysis of data from the Audit Commission and Department for Environment, Food and Rural Affairs

NOTES

1 Hastings' funding was only received at the end of the period analysed and it could not therefore have a significant effect on the recycling rates between 2001-02 and 2004-05. The funding was spent on a Material Recycling Facility, additional refuse freighters and a promotional campaign, and the Council expects the 2005-06 recycling rate to show a significant improvement.

2 Surrey Heath's recycling rates in 2004-05 were reduced by the removal of recycling facilities from County Council civic amenity sites. Surrey Heath told us that the rate was 25 per cent in 2005-06.

3 Kenet's recycling rate of 20.2 per cent in 2001-02 was considerably overstated because of the inclusion of figures for household waste recycling centres which should have been allocated to the County Council. Much of the impact of 2004-05 funding has only been apparent from 2005-06 onwards.

Initiatives to get businesses and households to minimise waste remain at a very early stage

4.8 Minimising the amount of biodegradable municipal waste produced is potentially the most cost-effective way of reducing the amount sent to landfill. There are two main approaches: encouraging producers to reduce packaging and other materials likely to end up as waste; and encouraging households to reduce waste (for example, by having their own compost bin). Both programmes reduce the burden on local authorities collecting, treating and disposing of waste.

4.9 WRAP has instigated a number of projects to minimise volumes of waste generated. The projects could lead to reductions in waste, but progress is likely to take time:

- **Home Composting Scheme** – this is a long-term scheme to increase diversion from landfill by preventing garden and kitchen waste from entering the waste stream. In the three years to March 2006 approximately £30 million was spent on 1.5 million bins, marketing, delivery and support. WRAP estimates that, over a ten year period, with a reasonable level of take-up, the scheme could divert 300,000 tonnes of waste a year at a cost of about £12 a tonne a year. In some areas, though, the Scheme is in competition with separate local authority initiatives to collect green waste for composting.

- **Waste Minimisation Innovation Fund and the Retailers Initiative** – the Fund has a budget of £8 million and aims to reduce household waste by almost 320,000 tonnes by March 2007 (£25 a tonne) by reducing packaging, preventing food waste and improving the efficiency of distribution systems. To March 2006, WRAP has spent some £5.5 million and let contracts for 25 projects. Based on likely estimates of take-up, WRAP estimates these projects offer potential savings of 330,000 tonnes, of which 60,000 tonnes would be biodegradable if fully rolled out across the retail sector.
 - **The Courtauld Commitment** – signed in July 2005 with 13 leading retailers who committed, through individual projects yet to be announced, to: reduce growth in packaging waste by 2008; deliver absolute reductions in packaging waste by March 2010; and identify ways to tackle the problem of food waste. It is too early to assess the impact of the Commitment but it has the potential to make significant reductions in biodegradable municipal waste generation.
 - **The Real Nappies Programme** – aims to encourage greater use of re-usable nappies. The programme, estimated to cost £2.3 million, aimed to divert 35,000 tonnes from landfill by March 2006 (£65 a tonne). Current estimates suggest that a cumulative total of 16,000 tonnes of biodegradable household waste will have been directly diverted by funded projects in England by the target date at a cost of £912,000 (£57 a tonne). This estimate does not take account of continued benefits in future years and wider changes to consumer choices promoted by the programme. The balance of the programme funding has been directed at these benefits.
- 4.10** Other countries have imposed a charging scheme on households to reduce volumes of waste and maximise household recycling. Our consultants found that the most common, and successful, approach is known as “pay-as-you-throw”, whereby households are charged variable rates according to the weight or volume of residual waste collected. The general trend was towards “two-tier” charging in which householders pay a standing charge for waste collection, plus a variable charge according to the amount of waste generated. Our consultants found “pay-as-you-throw” schemes running in Austria, Denmark, France, Ireland, Italy, Germany, the Netherlands and Sweden. In their view, such schemes could lead to reductions of up to 40 per cent, but can lead to adverse impacts, such as increased fly-tipping.
- 4.11** The Environmental Protection Act 1990 prohibits local authorities in England from charging households directly for waste collection.⁵⁴ Some collection authorities, have, however, used Section 46 of the Act to charge for additional containers, such as for garden waste, or to restrict and specify what householders can do with their waste.⁵⁵ In its current Waste Strategy Review, the Department states that, in the light of pilot projects currently underway, “Government intends to consider the scope and desirability for additional pricing mechanisms, including householder charging, to support the levels of recycling anticipated to be required.”⁵⁶

54 Environmental Protection Act 1990, Section 45 (3) No charge shall be made for the collection of household waste except in cases prescribed in regulations made by the Secretary of State.

55 Environmental Protection Act 1990, Section 46 states that the authority may reasonably require the householder to use specific and separate receptacles for waste to be recycled or not and these receptacles can be provided free of charge, upon payment of a single or periodic payment, or by the resident and at their own expense. The Waste Collection Authority can specify the size of the containers, where they must be placed to be emptied and what can be put into each container.

56 Department for Environment, Food and Rural Affairs, Partial Regulatory Impact Assessment of the Review of England’s Waste Strategy Annex A, February 2006.

APPENDIX ONE

Recommendations arising from the Office of Government Commerce's review of the Municipal Waste Market⁵⁷

1 The Office of Government Commerce's Kelly programme was set up to implement the recommendations that resulted from the Office's report on Increasing Competition and Improving Long-Term Capacity Planning, launched in December 2003. The programme aimed to:

- increase competition and improve long-term capacity planning in the Government marketplace; and
- achieve a more systematic and strategic approach to major government markets.

2 Municipal waste was chosen to be examined as part of the programme because of the major constraints within the waste industry and the need for a better matching of supply and demand for improved waste infrastructure. The Review recommended that, in the near term:

- Government, in partnership with local authorities, should develop, maintain and publish a coordinated picture of local authority waste procurement plans and progress. From this, potential opportunities for greater collaboration between authorities and a better flow of projects through the procurement 'pipeline' can be identified.

- Government should provide access to a greater pool of procurement and project expertise and advice for local authorities, using the coordinated picture to best focus the allocation of these resources.

- The funding and procurement model adopted for a waste project should be appropriate to the nature of the service or facility being procured. Furthermore, in its assessment of whether particular projects are ready to go to the market, the Department should favour those that are participating in a collaboration of the sort described in the first bullet point.

- Government should ensure that appropriate priority is given to facilitating the timely delivery of waste management facilities through the planning process – including utilising effectively existing financial incentives and planning powers.

- Government should publish procurement timetables for all major waste projects to both local authorities and industry; and benchmark the delivered outcomes with a view to reducing project timescales.

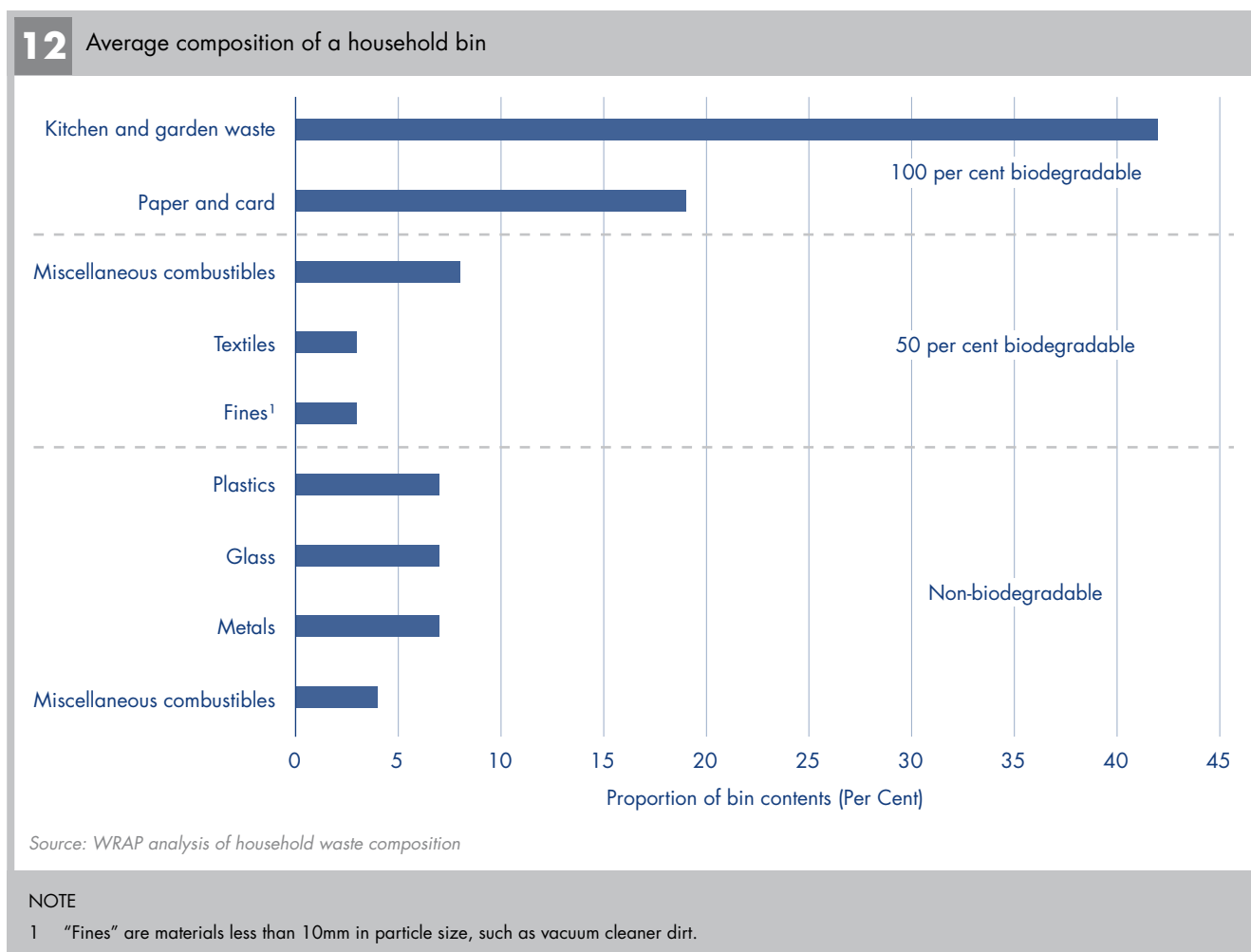
3 The Department confirmed that it has begun to implement these recommendations through a recently established Waste Infrastructure Development Programme.

⁵⁷ Office of Government Commerce Kelly Report to the Financial Secretary to the Treasury, Improving competition and capacity planning in the municipal waste market (May 2006).

APPENDIX TWO

Alternative waste treatment options

1 The average composition of a household bin is shown in **Figure 12** below.



2 Ideally waste can be recycled, but where this is not possible alternative waste treatment options to landfill are shown below.

- **Anaerobic digestion** – the chemical process by which wastes are decomposed by bacteria in the absence of air. In the process, biodegradable wastes, such as garden and kitchen waste, are converted into a ‘digestate’ and methane rich biogas which can be collected and burnt as a fuel to produce electricity.
- **Advanced Thermal Treatment** – the variety of systems which are used in the treatment of municipal wastes. The most common treatments are pyrolysis, which is a thermal process where organic derived materials in the waste are broken down under heat and the absence of oxygen, and gasification, where air or oxygen is used to partially combust the waste to achieve higher temperatures.
- **Composting** – an aerobic, biological process in which organic wastes, such as household garden and kitchen wastes, 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.
- **Incineration with energy from waste** – schemes in which waste is combusted under controlled conditions and energy is recovered from the process in the form of electricity, heat recovery or both.
- **Materials Reclamation** – the sorting and separation of waste and recyclable fractions for subsequent processing. Recyclables are segregated by means of manual sorting on conveyor belts and mechanical processes. The operation takes place in a Materials Reclamation Facility.
- **Mechanical Biological Treatment** – a generic term for an integration of several processes commonly found in other waste management technologies such as Materials Recovery Facilities, sorting and composting plants. When it is operating in its simplest form, mechanical and biological treatment provides a drying and bulk reduction operation for mixed waste prior to landfill.
- **Refuse Derived Fuel** – the process by which municipal waste is compressed into pellets and then used as a solid fuel supplement in a power station. The pellets typically have a calorific value of about half that of coal.

APPENDIX THREE

Study methods

1 We sought evidence from a range of sources in carrying out our examination, as summarised in **Figure 13 overleaf**.

Consultants' report on diversion from landfill in other European Union countries

2 We commissioned SLR Consulting to assess how well other Member States were progressing towards the European Union Landfill Directive targets. SLR Consulting's assessment built on work previously commissioned by the Chartered Institution of Waste Management. SLR Consulting examined practice in the following countries:

Better placed than the UK:

- Austria
- Denmark
- France
- Germany
- Netherlands
- Sweden

In a similar position to the UK:

- Italy
- Ireland
- Spain

3 SLR Consulting examined the performance of each country and how the approach taken in each case was affected by:

- underlying cultural developments;
- planning systems;
- policy mechanisms; and
- finance structure and ownership.

Omnibus survey of public attitudes to waste

4 We commissioned an omnibus survey from Capibus to examine public attitudes to household waste management issues. Capibus carried out face-to-face interviews with a representative sample of 1,600 adults from across England on questions relating to:

- their knowledge of waste management practices;
- their preferences for the treatment and disposal of household waste; and
- the extent to which they see household waste disposal as a problem requiring urgent action.

Financial modelling of future local authority waste management practice

5 The Department had previously commissioned AEA Technology to develop the Local Authority Waste Recovery Recycling and Disposal model to underpin analysis for the Department's Spending Review 2004 proposals. During Summer 2005, the National Audit Office attended meetings of the Local Authority Waste Recovery Recycling and Disposal Advisory Group alongside key stakeholders from the waste management sector who:

- advised on updating and improving input data and suggesting appropriate sources;
- suggested and commented on areas for improvement in the model's operation;
- suggested and commented on alternative values for assumptions as the basis for model runs; and
- received and commented on the outputs of model runs.

13 Our sources of evidence in carrying out this examination

Method

- Review waste disposal approaches in other parts of Europe, with the help of SLR Consulting
- Survey public attitudes to waste collection and disposal
- Review the Department's model for predicting local authority waste collection and disposal methods
- Consult stakeholders (e.g. local authority waste disposal officers, the waste disposal industry, local government representative organisations, professional bodies)
- Analyse the Office of Government Commerce review of the municipal waste market
- Analyse data from the Department, WRAP and local authorities Private Finance Initiative deals for waste facilities

Purpose

- To identify good practices in waste collection and disposal in other parts of the European Union
- To identify the views of the public in terms of realisation of the scale of the problem and the most effective solutions
- To establish the validity and reliability of the model's predictions
- To gather the views of stakeholders on progress towards meeting the landfill reduction targets and identify good practices
- To identify the key messages from Office of Government Commerce review
- To examine the cost and adequacy of the contribution made by different initiatives, including the Private Finance Initiative, to deliver new waste treatment facilities and reduce reliance on landfill

Source: National Audit Office

6 A National Audit Office statistician also examined the model and found it to be well-constructed and fit for purpose, with the proviso that such models are as good as the assumptions fed in. As a result, we have discussed outputs from the model in the text of the report, indicating where we think assumptions may be optimistic.

Discussions with key stakeholders

7 We carried out in-depth discussions about progress in diverting municipal waste from landfill with local authority councillors and members from the following Waste Disposal, Collection and Unitary Authorities, covering the success of Departmental and WRAP initiatives to date and priorities for future action:

- Devon County Council
- East Sussex County Council
- Essex County Council
- Gloucestershire County Council
- Norfolk County Council
- Northamptonshire County Council
- Sheffield City Council
- Suffolk County Council
- Swindon Borough Council
- Tendring District Council
- Welwyn Hatfield Council
- Wycombe District Council

8 We carried out a semi-structured questionnaire on the progress of Private Finance Initiative projects with councils in receipt of credits from the Department.

9 We met representatives of the following stakeholder organisations:

- Associate Parliamentary Sustainable Waste Group
- Chartered Institute of Waste Management
- Community Recycling Network
- Environment Agency
- Environmental Services Association
- Local Authority Recycling Advisory Committee
- Local Government Association
- National Association of Waste Disposal Officers
- Office of the Deputy Prime Minister (now the Department for Communities and Local Government)
- Regional Centres of Excellence

Office of Government Commerce Review of the municipal waste market

10 The Office of Government Commerce's Reviews are intended to increase competition and improve long-term capacity planning in the Government procurement marketplace. Their review of the municipal waste market was carried out during 2005 and published in May 2006. We were in contact with the Review team from an early stage. Given the parallel timetables for our respective studies we did not seek to burden local authorities by duplicating the Office of Government Commerce survey of local authority procurement practice. In return we were provided with access to the Office's results database.

Analysis of data from the Department for Environment, Food and Rural Affairs, WRAP and local authorities

11 To assess the performance of the Department's Waste Implementation Programme we analysed grant amounts distributed to local authorities, the assessment of local authority bids for assistance, reports from consultants employed by the Department to carry forward its programmes, monitoring and evaluation reports on individual initiatives and feedback received from authorities involved in the Programme.

12 We analysed the detailed results of Municipal Waste Management Surveys from 2002-03 and 2003-04. As part of this analysis we used the equation proposed by the Environment Agency to retrospectively calculate the notional Landfill Allowance Trading Scheme tonnages of biodegradable municipal waste sent to landfill for these years. These surveys have been discontinued and from 2004-05 local authorities are expected to submit detailed data about their waste management operations online through the Waste Data Flow Database. Unfortunately this was not compulsory for 2004-05, so data are too incomplete to allow analysis for that year.

APPENDIX FOUR

Analysis of the Government's 1995, 2000 and 2002 waste strategies

Key question	Making Waste Work (1995) ¹	Waste Strategy 2000 ²	Waste Not Want Not (2002) and Government Response (2003) ³
Was there a clear mission statement?	Yes	No	No
Were the targets to contribute to meeting the requirements of the Landfill Directive specific, measurable and timely?	Yes	Yes	Yes
Were the targets to contribute to the Landfill Directive realistic and achievable?	No	Partially	Yes
Were the targets mandatory?	No	Partially ⁴	Yes
Were there other strong incentives in place to meet Landfill Directive targets?	No	No	Yes
Were work programmes identified to meet Landfill Directive targets?	No	Partially ⁵	Yes
Was significant funding identified to meet Landfill Directive targets?	No	No ⁶	Yes
Were policies on recycling and re-use clear?	Partially	Yes	Yes
Were policies on incineration and energy from waste clear?	No	Partially	Partially
Was there a strategy to address barriers to planning permission?	No	Partially	Partially
Did the strategy set out strong disincentives to landfill?	No	Partially	Partially

Notes:

- Making Waste Work: a strategy for sustainable waste management in England and Wales*, Department of the Environment, Cm 3040, December 1995.
- Waste Strategy 2000 for England and Wales*, Department for the Environment, Transport and the Regions, Cm 4693, May 2000.
- Waste Not, Want Not A strategy for tackling the waste problem in England*, Prime Minister's Strategy Unit, November 2002; Government Response to Strategy Unit report *Waste Not, Want Not*, Department for Environment, Food and Rural Affairs, May 2003.
- Mandatory targets were set for recycling, but not landfill diversion.
- The intention to introduce a scheme to trade landfill credits was announced, but without an implementation timetable.
- The Strategy itself did not include any proposals for increased funding but the Waste Minimisation and Recycling Fund (the "Challenge Fund") was announced in the Comprehensive Spending Review two months later.

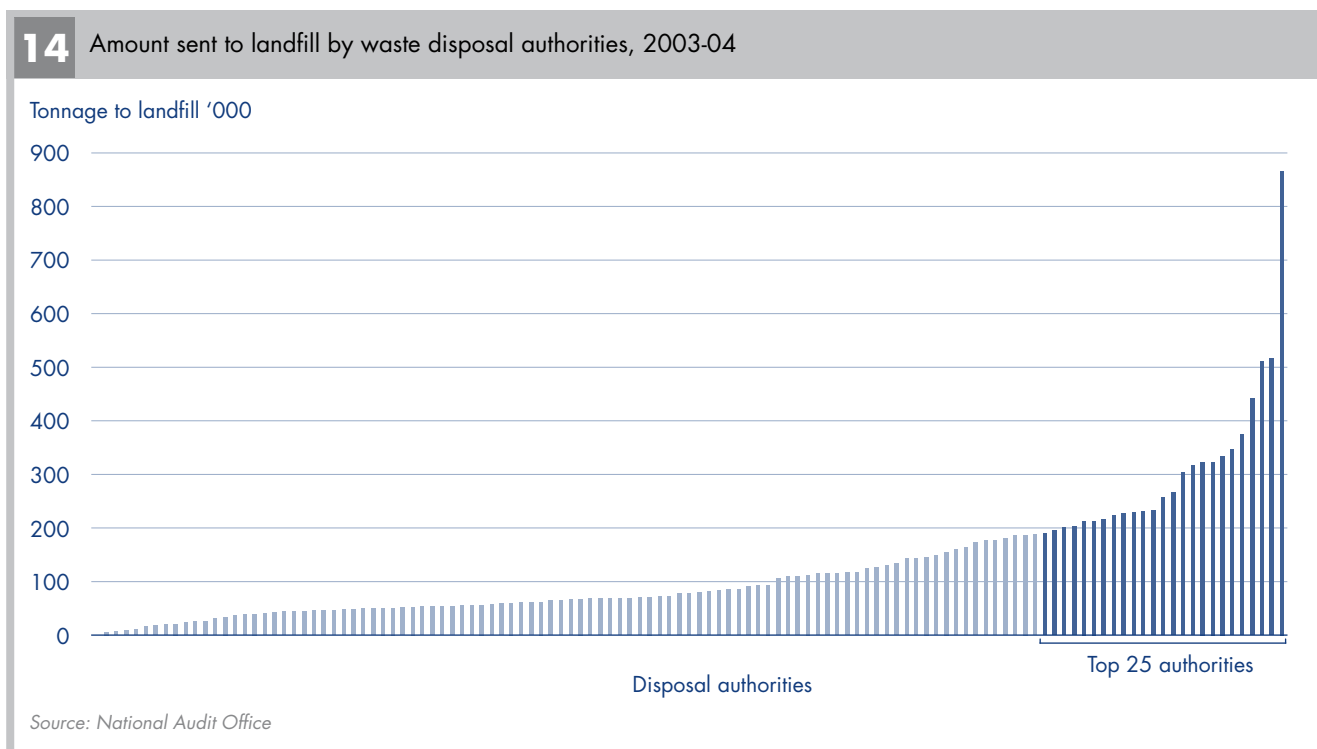
APPENDIX FIVE

Amounts sent to landfill by waste disposal authorities in 2003-04

1 Amounts sent to landfill by individual waste disposal authorities are shown below in **Figure 14**.

2 **Figure 15 overleaf** lists alphabetically individual disposal authorities along with the amounts of biodegradable waste sent to landfill in 2003-04, data for which was drawn from the Department’s Municipal Waste Management Survey, and the related Landfill Allowance Trading Scheme allowances for 2010 and 2013 published by the Department.

3 The Department’s calculation for 2003-04 relies on survey data which pre-dates the more comprehensive Waste Data Flow database now in use. The Department made certain assumptions about the treatment of some figures within the survey which mean that tonnages for individual authorities may vary slightly from any calculation carried out by the authority itself.



15 Biodegradable municipal waste tonnages for disposal authorities in England for 2003-04, with related Landfill Allowance Trading Scheme targets for 2010 and 2013

Disposal Authority	Biodegradable municipal waste landfilled in 2003-04 (tonnes)	Landfill Allowance Trading Scheme allowances (tonnes)	
		2010 allowance	2013 allowance
Barnsley Metropolitan Borough Council	79,977	55,934	37,256
Bath and North East Somerset Council	53,255	37,604	25,047
Bedfordshire County Council	130,799	96,158	64,048
Bexley London Borough	65,142	54,606	36,372
Birmingham City Council ²	106,145	209,139	139,301
Blackburn with Darwen Borough Council	43,556	29,555	19,686
Blackpool Borough Council	50,067	35,498	23,644
Bournemouth Borough Council	56,836	42,850	28,541
Bracknell Forest Borough Council	30,908	27,703	18,452
Brighton and Hove Council	66,930	44,968	29,952
Bristol City Council	124,922	76,563	50,996
Bromley London Borough ²	68,265	76,569	51,000
Buckinghamshire County Council	131,893	102,044	67,968
Calderdale Metropolitan Borough Council	60,214	40,850	27,209
Cambridgeshire County Council	143,389	109,638	73,026
Cheshire County Council ¹	229,848	167,818	111,779
City of Bradford Metropolitan District Council ¹	188,370	104,251	69,439
City of Wakefield Metropolitan District Council (Metropolitan Borough Council)	112,045	82,137	54,709
City of York Council	68,429	44,281	29,494
Cornwall County Council	166,293	110,554	73,637
Coventry City Council ²	24,522	71,162	47,399
Croydon London Borough	125,290	75,700	50,421
Cumbria County Council	178,693	110,331	73,488
Darlington Borough Council	39,319	25,473	16,967
Derby City Council	74,502	47,261	31,479
Derbyshire County Council ¹	221,329	154,610	102,981
Devon County Council ¹	208,431	156,679	104,359
Doncaster Metropolitan Borough Council	109,923	76,477	50,939
Dorset County Council	107,260	82,565	54,994
Dudley Metropolitan Borough Council ²	15,334	51,431	34,257
Durham County Council	184,900	118,088	78,655
East London Waste Authority ¹	298,042	211,793	141,069
East Riding of Yorkshire Council	117,361	73,097	48,688
East Sussex County Council	141,548	102,028	67,958
Essex County Council ¹	363,634	281,901	187,766
Gateshead Metropolitan Borough Council	126,427	70,938	47,250
Gloucestershire County Council	159,319	107,428	71,555
Greater Manchester ¹	854,283	557,297	371,200
Greenwich London Borough ²	23,574	53,214	35,445
Halton Borough Council	44,033	27,759	18,490
Hampshire County Council ¹	279,416	270,180	179,959

15 Biodegradable municipal waste tonnages for disposal authorities in England for 2003-04, with related Landfill Allowance Trading Scheme targets for 2010 and 2013

Disposal Authority	Biodegradable municipal waste landfilled in 2003-04 (tonnes)	Landfill Allowance Trading Scheme allowances (tonnes)	
		2010 allowance	2013 allowance
Hartlepool Borough Council ²	5,486	19,514	12,998
Herefordshire Council	60,235	35,508	23,651
Hertfordshire County Council ¹	265,121	219,073	145,918
Isle of Wight Council ²	29,971	30,188	20,107
Kent County Council ¹	422,666	290,258	193,333
Kingston-upon-Hull City Council	92,715	54,479	36,287
Kingston-upon-Thames London Borough	42,903	31,430	20,934
Kirklees Metropolitan Borough Council ²	43,715	94,557	62,982
Lancashire County Council ¹	328,599	258,634	172,269
Leeds City Council (Metropolitan Borough Council) ¹	213,256	151,189	100,703
Leicester City Council	105,511	56,656	37,737
Leicestershire County Council ¹	185,895	138,123	92,000
Lewisham London Borough ²	17,362	49,733	33,126
Lincolnshire County Council ¹	185,952	131,376	87,506
London Corporation	36,559	27,029	18,003
Luton Borough Council	57,542	40,377	26,894
Medway Borough Council	76,605	52,691	35,096
Merseyside ¹	512,196	310,848	207,047
Merton London Borough	60,393	38,930	25,930
Middlesbrough Borough Council ²	9,165	26,927	17,935
Milton Keynes Council	60,196	44,753	29,809
Newcastle-upon-Tyne City Council (Metropolitan Borough Council)	111,741	68,924	45,909
Norfolk County Council ¹	217,425	166,921	111,181
North East Lincolnshire Council	49,465	34,528	22,998
North Lincolnshire Council	58,573	39,802	26,511
North London Waste Authority ^{1, 2}	311,253	358,996	239,117
North Somerset Council	66,045	44,214	29,450
North Tyneside Council	68,470	44,627	29,725
North Yorkshire County Council ¹	219,252	143,960	95,888
Northamptonshire County Council ¹	188,507	146,969	97,892
Northumberland County Council	113,298	72,823	48,506
Nottingham City Council ²	46,091	69,031	45,979
Nottinghamshire County Council ¹	209,348	181,603	120,960
Oxfordshire County Council	163,390	121,668	81,040
Peterborough City Council	45,838	34,135	22,736
Plymouth City Council	92,489	66,397	44,225
Poole Borough Council	49,146	35,888	23,904
Portsmouth City Council	48,796	37,684	25,100
Reading Borough Council	49,254	35,028	23,331
Redcar and Cleveland Borough Council ²	24,597	31,059	20,688
Rotherham Metropolitan Borough Council	77,722	58,036	38,656

15 Biodegradable municipal waste tonnages for disposal authorities in England for 2003-04, with related Landfill Allowance Trading Scheme targets for 2010 and 2013 (*continued*)

Disposal Authority	Biodegradable municipal waste landfilled in 2003-04 (tonnes)	Landfill Allowance Trading Scheme allowances (tonnes)	
		2010 allowance	2013 allowance
Rutland County Council	10,181	7,846	5,226
Sandwell Metropolitan Borough Council	85,266	57,277	38,151
Sheffield City Council ²	69,014	113,709	75,738
Shropshire County Council	89,249	67,395	44,890
Slough Borough Council	44,769	26,542	17,679
Solihull Metropolitan Borough Council ²	18,493	39,565	26,353
Somerset County Council	171,039	117,929	78,549
South Gloucestershire Council	80,425	52,366	34,879
South Tyneside Metropolitan Borough Council	51,049	30,076	20,033
Southampton City Council	71,445	43,188	28,767
Southend-on-Sea Borough Council	51,142	36,956	24,615
Southwark London Borough	64,755	51,141	34,063
Staffordshire County Council	186,383	184,345	122,787
Stockton-on-Tees Borough Council ²	6,823	36,435	24,268
Stoke-on-Trent City Council ²	20,546	52,945	35,265
Suffolk County Council ¹	200,392	148,873	99,160
Sunderland City Council	105,091	64,052	42,663
Surrey County Council ¹	337,296	229,139	152,623
Sutton London Borough	51,726	35,665	23,756
Swindon Borough Council	50,560	38,968	25,955
Telford and Wrekin Council	52,813	37,450	24,944
Thurrock Council	46,017	27,909	18,590
Torbay Council	38,770	32,224	21,463
Tower Hamlets London Borough	68,202	38,871	25,891
Walsall Metropolitan Borough Council	80,484	56,218	37,445
Warrington Borough Council	71,224	44,014	29,316
Warwickshire County Council	153,974	113,495	75,596
West Berkshire	45,278	32,410	21,587
West London Waste Authority ¹	500,870	329,450	219,437
West Sussex County Council ¹	246,873	179,655	119,663
Western Riverside Waste Authority (London) ¹	299,855	198,693	132,344
Westminster City Council ²	48,284	87,938	58,573
Wigan Metropolitan Borough Council	162,034	79,008	52,625
Wiltshire County Council	141,135	93,158	62,050
Windsor and Maidenhead Borough Council	41,684	34,708	23,118
Wokingham Council	38,833	29,804	19,851
Wolverhampton Metropolitan Borough Council ²	43,763	61,873	41,212
Worcestershire County Council	168,112	118,656	79,033

Source: Social Fund Annual Report

NOTES

1 These authorities are, collectively, responsible for 50 per cent of the tonnage of biodegradable municipal waste sent to landfill.

2 These 19 authorities already meet their 2010 Landfill Allowance Trading Scheme target through use of alternative disposal methods, such as energy from waste or mechanical and biological treatment.

APPENDIX SIX

Financial impact of the Landfill Directive on authorities failing to meet Landfill Allowance Trading Scheme obligations

1 Waste Disposal Authorities and Unitary Authorities that exceed their Landfill Allowance Trading Scheme allowances in target years will be penalised £150 per tonne of biodegradable municipal waste. The Office of Government Commerce surveyed 121 authorities to assess the extent of their preparations for achieving their obligations. Of 87 authorities responding:

- 45 stated there was potential for delays to occur during procurement; and
- 25 stated they had not yet identified their preferred technological solution for municipal waste diversion to allow procurement to start.

2 The existing plans of authorities responding to the Office of Government Commerce's municipal waste market review survey indicated that the 2010 landfill directive target would be missed by approximately 190,000 tonnes and the 2013 target by approximately 960,000 tonnes. Based on the tonnage targets for individual authorities, this is equivalent to 268,000 tonnes and 1.37 million tonnes for all authorities. The Landfill Allowance Trading Scheme, however, offers authorities the flexibility to purchase additional allowances from authorities with surpluses to meet their obligations under the Scheme, although there is no guarantee that enough

surplus allowances will be available. If they were able to do this, local authorities would not be liable to penalties. Authorities may choose this option if, for example, it offers the most cost-effective way to meet their obligations. If authorities were not to meet their obligations, whether through landfill diversion nor using the flexibility of the Landfill Allowance Trading Scheme, the potential financial penalties for these authorities would be £40 million and £205 million respectively. This is shown in **Figure 16**, together with indicative figures if obligations are exceeded by 10 per cent.

3 We examined the 25 authorities that currently send the largest tonnages of biodegradable municipal waste to landfill. Of these, our analysis indicated that five were very unlikely to meet their 2010 allowances by diversion alone and therefore faced challenges in meeting their 2013 obligations. A further 14 authorities faced a challenge to meet the 2010 allowance by diversion alone, though were in a stronger position regarding their 2013 obligation. If these 19 authorities miss their 2010 obligation by 10 per cent, and missed their 2013 obligation by the same amount, the Landfill Allowance Trading Scheme penalties would amount to £100 million (see **Figure 17 overleaf**).

16 Potential financial penalties for authorities missing their Landfill Allowance Trading Scheme tonnage reductions

If, collectively, local authorities fail to meet their landfill allowance reductions, they could face penalties for the amounts shown below. The table shows two estimates for each of the target years, one based on Office of Government Commerce data, the other showing the outcome if allowances are exceeded by 10 per cent.

Target year	Basis of estimate	Penalties incurred from excess tonnage	Tonnage above allowances
2010	Estimate using Office of Government Commerce data	£40 million	268,000
	Estimate based on allowances being exceeded by 10 per cent	£168 million	1,120,000
2013	Estimate using Office of Government Commerce data	£205 million	1,368,000
	Estimate based on allowances being exceeded by 10 per cent	£112 million	746,000

Source: National Audit Office

17 Potential financial penalties if the authorities with the largest amounts of biodegradable municipal waste miss their Landfill Allowance Trading Scheme target tonnage reductions

Target year	Number of key authorities	Tonnage above target allowances for key authorities	Penalties incurred from excess tonnage
2010 (10 per cent excess tonnage)	19 ¹	402,100	£60 million
2013 (10 per cent excess tonnage)	19	264,400	£40 million
2013 (20 per cent excess tonnage)	19	528,800	£79 million

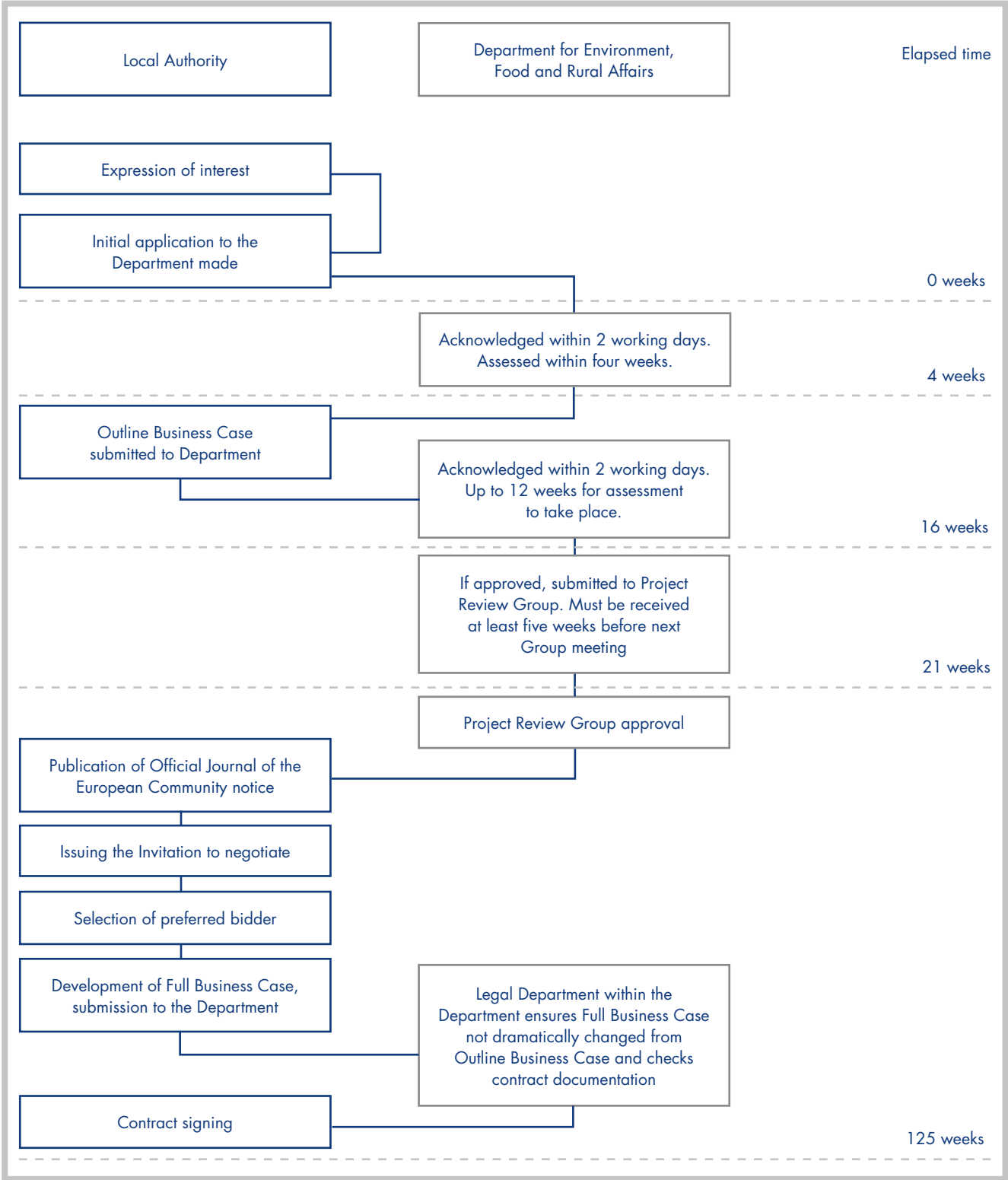
Source: National Audit Office

NOTE

1 Bradford Metropolitan Borough Council, Cheshire County Council, Devon County Council, Essex County Council, Greater Manchester Waste Disposal Authority, Hertfordshire County Council, Lancashire County Council, Leeds Metropolitan Borough Council, Leicestershire County Council, Lincolnshire County Council, Merseyside Waste Disposal Authority, Norfolk County Council, Northamptonshire County Council, North Yorkshire County Council, Suffolk County Council, Surrey County Council, Western Riverside Waste Authority, West London Waste Authority, West Sussex County Council.

APPENDIX SEVEN

Stages in the Private Finance Initiative process



REPORTS BY THE COMPTROLLER AND AUDITOR GENERAL, SESSION 2005-2006

The Comptroller and Auditor General has to date, in Session 2005-2006, presented to the House of Commons the following reports under Section 9 of the National Audit Act, 1983. The reports are listed by subject category.

		Publication date
Cross-Government		
Home Office: Working with the Third Sector	HC 75	29 June 2005
Joint Targets	HC 453	14 October 2005
Progress in improving government efficiency	HC 802-I/II	17 February 2006
Second Validation Compendium Report: 2003-06 PSA data systems	HC 985	23 March 2006
Improving the efficiency of postal services procurement in the public sector	HC 946-I/II/III	24 March 2006
Smarter food procurement in the public sector	HC 963-I/II/III	30 March 2006
Update on PFI debt refinancing and the PFI equity market	HC 1040	21 April 2006
Achieving innovation in central government organisations	HC 1447-I/II	25 July 2006
Culture Media and Sport		
Procurement in the Culture, Media and Sport sector	HC 596	30 November 2005
The office accommodation of the Department for Culture, Media and Sport and its sponsored bodies	HC 942	16 March 2006
Defence		
Driving the Successful Delivery of Major Defence Projects: Effective Project Control is a Key Factor in Successful Projects	HC 30	20 May 2005
Managing the Defence Estate	HC 25	25 May 2005
Assessing and Reporting Military Readiness	HC 72	15 June 2005
Major Projects Report 2005	HC 595	25 November 2005
Progress in Combat Identification	HC 936	3 March 2006
Reserve Forces	HC 964	31 March 2006
Using the contract to maximise the likelihood of successful project outcomes	HC 1047	7 June 2006
Delivering digital tactical communications through the Bowman CIP programme	HC 1050	25 July 2006
Education		
Securing strategic leadership for the learning and skills sector in England	HC 29	18 May 2005
Extending access to learning through technology: Ufi and the learndirect service	HC 460	4 November 2005
Employers' perspectives on improving skills for employment	HC 461	14 December 2005
Improving poorly performing schools in England	HC 679	11 January 2006
Environment, Food and Rural Affairs		
Lost in Translation? Responding to the challenges of European law	HC 26	26 May 2005
Environment Agency: Efficiency in water resource management	HC 73	17 June 2005
The right of access to open countryside	HC 1046	9 June 2006
Reducing the reliance on landfill in England	HC 1177	26 July 2006

Publication date**Europe**

Financial management in the European Union HC 999 29 March 2006

Law, Order and Central

Public Guardianship Office: HC 27 8 June 2005
Protecting and promoting the financial affairs of people who lose mental capacity

Home Office: National Asylum Support Service: The provision of accommodation for asylum seekers HC 130 7 July 2005

Returning failed asylum applicants HC 76 14 July 2005

National Offender Management Service: HC 458 27 October 2005
Dealing with increased numbers in custody

The Electronic Monitoring of Adult Offenders HC 800 1 February 2006

Crown Prosecution Service: HC 798 15 February 2006
Effective use of magistrates' courts hearings

Serving Time: Prisoner Diet and Exercise HC 939 9 March 2006

The Management of Staff Sickness Absence in the National Probation Service HC 1042 26 April 2006

Department for Constitutional Affairs: Fines Collection HC 1049 25 May 2006

National Health Service

Innovation in the NHS: Local Improvement Finance Trusts HC 28 19 May 2005

The Refinancing of the Norfolk and Norwich PFI Hospital: HC 78 10 June 2005
how the deal can be viewed in the light of the refinancing

A Safer Place for Patients: Learning to improve patient safety HC 456 3 November 2005

Reducing Brain Damage: Faster access to better stroke care HC 452 16 November 2005

The Provision of Out-of-Hours Care in England HC 1041 5 May 2006

The Paddington Health Campus scheme HC 1045 19 May 2006

The National Programme for IT in the NHS HC 1173 16 June 2006

Improving the use of temporary nursing staff in NHS acute and foundation trusts HC 1176 12 July 2006

Overseas Affairs

The Foreign and Commonwealth Office: HC 594 24 November 2005
Consular Services to British Nationals

Department for International Development: HC 803 1 March 2006
Tsunami: Provision of Financial Support for Humanitarian Assistance

Department for International Development: Working with Non-Governmental and other Civil Society Organisations to promote development HC 1311 6 July 2006

Public Private Partnership

Progress on the Channel Tunnel Rail Link HC 77 21 July 2005

The Wider Markets Initiative HC 799 27 January 2006

The Termination of the PFI Contract for the National Physical Laboratory HC 1044 10 May 2006

		Publication date
Regions and Regeneration		
Office of the Deputy Prime Minister: Enhancing Urban Green Space	HC 935	2 March 2006
A Foot on the Ladder: Low Cost Home Ownership Assistance	HC 1048	14 July 2006
Regulation		
The Office of Fair Trading: Enforcing competition in markets	HC 593	17 November 2005
The Office of Gas and Electricity Markets: Sale of gas networks by National Grid	HC 804	10 February 2006
Re-opening the post: Postcomm and the quality of mail services	HC 944	22 March 2006
The creation of Ofcom: Wider lessons for public sector mergers of regulatory agencies	HC 1175	5 July 2006
Revenue departments		
Filing of Income Tax Self Assessment Returns	HC 74	22 June 2005
Corporation Tax: companies managed by HM Revenue and Customs' Area offices	HC 678	13 January 2006
HM Revenue & Customs: VAT on e-commerce	HC 1051	26 May 2006
HM Revenue & Customs: ASPIRE – the re-competition of outsourced IT services	HC 938	19 July 2006
Trade and Industry		
The closure of MG Rover	HC 961	10 March 2006
The restructuring of British Energy	HC 943	17 March 2006
Supporting Small Business	HC 962	24 May 2006
Transport		
Maintaining and improving Britain's railway stations	HC 132	20 July 2005
The South Eastern Passenger Rail Franchise	HC 457	2 December 2005
A5 Queue Relocation in Dunstable – Wider Lessons	HC 1043	28 April 2006
Work and Pensions		
Gaining and retaining a job: the Department for Work and Pensions' support for disabled people	HC 455	13 October 2005
Department for Work and Pensions: Dealing with the complexity of the benefits system	HC 592	18 November 2005
Department for Work and Pensions: Using leaflets to communicate with the public about services and entitlements	HC 797	25 January 2006
Department for Work and Pensions: Delivering effective services through contact centres	HC 941	15 March 2006
Child Support Agency – Implementation of the Child Support Reforms	HC 1174	30 June 2006
International benchmark of fraud and error in social security systems	HC 1387	20 July 2006
Progress in tackling pensioner poverty: Encouraging take-up of entitlements	HC 1178-I/II	21 July 2006

Printed in the UK for the Stationery Office Limited
on behalf of the Controller of Her Majesty's Stationery Office
5399682 07/06 7333