



National Audit Office

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

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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.