

EXPLANATORY MEMORANDUM TO THE
THE LANDFILL ALLOWANCES AND TRADING SCHEME (ENGLAND)
REGULATIONS 2004

This explanatory memorandum is laid before Parliament by Command of Her Majesty.

Department for Environment, Food and Rural Affairs

Description

1. The Landfill Allowances and Trading Scheme (England) Regulations 2004 (the Regulations) provide the detail for the operation of the Landfill Allowances Trading Scheme (LATS) in England. This includes rules on the banking, borrowing and transfer of allowances; responsibilities on waste disposal authorities and landfill operators for the retention and submission of certain information; a system of penalties; provisions relating to the monitoring of LATS and the maintenance of registers.

Matters of special interest to the JCSI/SCSI

2. There are no matters of special interest for the Department to bring to the attention of the committee.

Legislative Background

3. The Regulations are made under the powers conferred upon the Secretary of State by sections 6, 7, 10 to 13, 15, 16 and 26 of the Waste and Emissions Trading (WET) Act 2003.
4. The overall aim of the Regulations is to reduce the amount of biodegradable municipal waste (BMW) sent to landfill for final disposal in the most cost-effective way, and so meet the EC Landfill Directive targets set for the UK. Taken together, Part 1 of the WET Act and the Regulations in part implement Articles 5(1) and (2) of the EC Landfill Directive for England. A transposition note is attached.
5. The Regulations are subject to approval in both Houses of Parliament, since they include the first regulations to be made by the Secretary of State under sections 6, 7 and 11 of the WET Act.

Extent

6. These Regulations only apply to England.

European Convention on Human Rights

7. In the view of the Secretary of State for Environment, Food and Rural Affairs, the Rt Honourable Margaret Beckett MP, the provisions of these draft Regulations are compatible with the Convention rights, as defined in section 1 of the Human Rights Act 1998.

Policy background

8. Articles 5(1) and (2) of the EC Landfill Directive set a series of targets for member states to meet. For the UK these targets are to reduce the amount of BMW sent to landfill to 75% of 1995 levels by 2010, to 50% of 1995 levels by 2013 and to 35% of

1995 levels by 2020. These target dates take into account the four year derogation in Article 5(2) of the Directive for member states who landfilled over 80% of their waste in 1995. The UK qualifies for this derogation.

9. With the aim of helping each of the countries of the UK to meet their share of the UK's overall targets, the WET Act makes provisions for setting up landfill allowances schemes³ in England, Scotland, Wales and Northern Ireland. These schemes will operate to limit the amount of BMW sent to landfill in the UK.
10. The WET Act provides for the setting of maximum amounts of BMW that can be sent to landfills both for non-target and target scheme years (sections 1 to 3); the allocation of landfill allowances to waste disposal authorities (WDAs) (sections 4 and 5); and for the landfill allowances schemes themselves (sections 6 to 16). Under the Act a 'scheme year' is any year during which a landfill allowances scheme operates, and a 'target year' is a scheme year for which targets have been set under the EC Landfill Directive. The definition of "target year" has been drafted on the assumption that the UK will utilise the four year derogation (section 23(1), as amended by SI 2004/1936).
11. In relation to the landfill allowances schemes, the Act contains substantive provisions and provisions enabling regulations to be made by the relevant allocating authority. The allocating authority for England is the Secretary of State.

Regulations which have already been made under the WET Act 2003

12. The Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 (SI 2004/1936) were made by the Secretary of State on 21 July 2004 and came into force the following day. For all the countries of the UK these Regulations set maximum amounts both for the three target years under the Act, and for the scheme years leading up to the first of these target years (regulations 3 to 7). These Regulations also amend the definitions of "scheme year" and "target year" in section 23(1) of the WET Act 2003 (regulation 2).
13. A draft of these Regulations was debated by the House of Commons on 5 July 2004 and by the House of Lords on 13 July 2004.
14. The Landfill Allowances Scheme (Wales) Regulations 2004 (SI 2004/1490) were made by the National Assembly for Wales on 8 June 2004 and came into force on 25 June 2004. These Regulations provide the detail for the landfill allowances scheme in Wales.
15. Each country of the UK has consulted separately on the details of the scheme in its area. This has resulted in different approaches and timetables being adopted across the UK. The National Assembly for Wales is the first allocating authority to make regulations in respect of its landfill allowances scheme.

The Landfill Allowances and Trading Scheme (England) Regulations 2004

³ The landfill allowances scheme for England is known as 'LATS', see paragraph 1 above.

16. In England after a series of public consultations Defra has decided to implement a system of transferable allowances to reduce the amount of BMW sent to landfill in the most cost-effective way.
17. The aim of the Landfill Allowance Trading Scheme is to enable local authorities to meet the reductions required by the EC Landfill Directive in the most cost effective way. A system of transferable allowances will allow the greatest amount of waste diversion or reduction to occur in areas where, consistent with a high level of environmental protection, recycling, composting, incineration and waste minimisation are cheapest and most practicable. The scheme may require some marginal additional administrative expenditure for local authorities, mainly arising from the need to report information on the management of municipal waste to the monitoring authority. However, the introduction of WasteDataFlow (a new online system for waste data reporting) has simplified the reporting process and this will ensure that any additional costs are kept to a minimum.
18. The Regulations introduce a scheme which enables landfill allowances to be transferred whether by trade or otherwise between WDAs. Allowances will be allocated by the Secretary of State to WDAs and these will limit the overall quantity of BMW that can be sent to landfill in any scheme year. WDAs will then have the option of landfilling in line with their allocation, buying additional allowances or landfilling under their allocation and having the option of selling any unused allowances to other WDAs. The Regulations also enable WDAs to borrow up to 5% of their next years allocation, or to bank any unused allowances that they hold for use in future years. The Regulations set out how these various flexible mechanisms will operate under LATS.
19. As well as setting out the rules on the banking, borrowing and transfer of allowances, the Regulations:
- give the Secretary of State power to suspend the banking, borrowing and transfer of allowances;
 - establish the Environment Agency (EA) as the monitoring authority for LATS;
 - require WDAs to record certain information, in particular the amount of municipal waste sent to landfill and return this information;
 - require landfill operators to record certain information, in particular the amount of municipal waste received at landfills and to return this information;
 - make provision for determining the amount of BMW in an amount of collected municipal waste;
 - set the method for calculating at the end of the scheme year the amount of BMW which each WDA has sent to landfill;
 - make provision for a landfill allowances register; and
 - make provision for the calculation and payment of penalties under the WET Act.
20. The figure used in Regulation 13 to determine the amount of BMW in an amount of collected municipal waste is based on work carried out for the Prime Minister's Strategy Unit report Waste Not, Want Not – A strategy for tackling the waste problem in England (2002). Based on the analysis of the composition of household

waste the assumed average biodegradable content is 68%, this is currently the most up-to-date data for England.

Impact

21. A regulatory impact assessment has been prepared on the Regulations and is attached. Other regulatory impact assessments have been carried out by the Department for Environment, Food and Rural Affairs on the WET Act and on the Regulations specifying maximums for BMW sent to landfill in non-target years and target years under the EC Landfill Directive.

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September 2004

**THE LANDFILL ALLOWANCES AND TRADING SCHEME (ENGLAND)
REGULATIONS 2004 AND THE LANDFILL (MAXIMUM LANDFILL AMOUNT)
(NORTHERN IRELAND) REGULATIONS 2004 TRANSPOSITION NOTE**

**MEMORANDUM SHOWING IN RELATION TO ENGLAND THE METHOD OF
IMPLEMENTATION OF AND THE BODY RESPONSIBLE FOR ARTICLES 5(1)
and (2) OF THE LANDFILL DIRECTIVE 1999/31/EC**

**MEMORANDUM SHOWING IN RELATION TO NORTHERN IRELAND THE
METHOD OF IMPLEMENTATION AND BODY RESPONSIBLE FOR ARTICLES
5(1) and (2) OF THE LANDFILL DIRECTIVE 1999/31/EC**

The Landfill Allowances and Trading Scheme (England) Regulations 2004, together with the Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 and the Waste and Emissions Trading Act 2003 (“the WET Act”) transpose Articles 5(1) and (2) of Council Directive 1999/31/EC on the landfill of waste (‘the EC Landfill Directive’) with respect to England.

The Landfill (Maximum Landfill Amount) (Northern Ireland) Regulations 2004 together with the Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004, the WET Act and (when they are made) regulations in respect of the landfill allowances scheme for Northern Ireland transpose Articles 5(1) and (2) of the EC Landfill Directive with respect to Northern Ireland.

The Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 and the WET Act also transpose Articles 5(1) and (2) (in part) for Scotland and Wales.

Background

Landfilling is the most common form of waste disposal across Europe. However, differences in technical standards and operating practices between member states have led to numerous incidents of gross land and water pollution. In response, the European Commission has introduced a number of measures to regulate landfill disposal and to establish a common framework that promotes waste prevention, minimisation, re-use, recycling and recovery as alternatives to landfill disposal.

The EC Landfill Directive introduces progressive measures to further prevent or reduce as far as possible the negative effects of landfilling waste on the environment and on human health. One of these measures is to reduce the amount of biodegradable waste sent to landfill for final disposal. Article 5(2) sets a series of targets for Member States to reduce the amount of biodegradable municipal waste (BMW) sent to landfill based on their 1995 waste arisings. The Directive provides a four year derogation for member states who landfilled over 80% of their waste in 1995. The UK is making use of this derogation. The reductions under the Directive (taking into account the four year derogation) are:

- By 2010 to reduce the amount of BMW going to landfill to 75% of that produced in 1995;

- By 2013 to reduce the amount of BMW going to landfill to 50% of that produced in 1995;
- By 2020 to reduce the amount of BMW going to landfill to 35% of that produced in 1995.

The details of how these requirements have been transposed in relation to **England** are discussed in more detail in the table below.

Article	Objective	Implementation	Responsibility
Articles 5(1) and (2)	To set up a national strategy to reduce the amount of biodegradable waste going to landfill, including the measures to achieve the BMW targets which are set out in Article 5(2).	<p>The WET Act, together with the Landfill Allowances and Trading Scheme (England) Regulations 2004, and the Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 (insofar as they relate to England).</p> <p>The Landfill Allowances and Trading Scheme (England) Regulations 2004 set out the detailed operation of the landfill allowances scheme for England. This scheme is designed to ensure that England's share of the Article 5(2) targets, as specified in the Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004, is achieved.</p>	<p>The Secretary of State, the Environment Agency and waste disposal authorities.</p> <p>Under the WET Act and the Landfill Allowances and Trading Scheme (England) Regulations 2004 these authorities have duties, and exercise functions, in relation to the landfill allowances scheme for England.</p>

The details of how these requirements have been transposed in relation to **Northern Ireland** are discussed in more detail in the table below.

Article	Objective	Implementation	Responsibility
Articles 5(1) and (2)	To set up a national strategy to reduce the amount of biodegradable waste going to landfill, including the measures to achieve the BMW targets which are set out in Article 5(2).	<p>The WET Act, together with the Landfill (Maximum Landfill Amount) (Northern Ireland) Regulations 2004, the Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 (insofar as they relate to Northern Ireland) and the forthcoming regulations in respect of the landfill allowances scheme for Northern Ireland.</p> <p>The Landfill (Maximum Landfill Amount) (Northern Ireland) Regulations 2004 specify the maximum amount of biodegradable municipal waste allowed to be sent to landfills from Northern Ireland in the scheme years 2010/11 and 2011/12.</p> <p>Further regulations in respect of the landfill allowances scheme for Northern Ireland, which when they are made will set out the detailed operation of the landfill allowances scheme for Northern Ireland. This scheme will be designed to ensure that Northern Ireland's share of the Article 5(2) targets,</p>	<p>The Department of the Environment Northern Ireland, the Environment and Heritage Service and waste disposal authorities.</p> <p>Under the WET Act and the forthcoming regulations in respect of the landfill allowances scheme for Northern Ireland these authorities have duties, and exercise functions, in relation to the landfill allowances scheme for Northern Ireland.</p>

		as specified in The Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 and The Landfill (Maximum Landfill Amount) (Northern Ireland) Regulations 2004, is achieved.	
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FINAL REGULATORY IMPACT ASSESSMENT ON IMPLEMENTING THE LANDFILL PROVISIONS OF THE WASTE AND EMISSIONS TRADING ACT 2003

1 TITLE

1.1 This Regulatory Impact Assessment deals with the Landfill Allowance and Trading Scheme (England) Regulations implementing some of the landfill provisions in the Waste and Emissions Trading Act 2003.

2 PURPOSE AND INTENDED EFFECT OF THE MEASURE

(i) The Objective

2.1 The Regulations implement Sections 4–16 and 26 of the Waste and Emissions Trading (WET) Act in England. The Act implements Articles 5 (1) and (2) of the Landfill Directive (the Directive).

2.2 The overall aim is to make use of the most cost effective and economically sound way to reduce the amount of biodegradable municipal waste (BMW) that is sent to landfill for final disposal and so meet the Directive targets. The aim of Regulations is to introduce a trading scheme for landfill allowances; this RIA also considers the costs and benefits of the method of allocating allowances. The scheme is a means to achieve the Directive targets rather than the instrument that imposes those targets. This RIA limits itself, therefore to costs and benefits linked to introducing a scheme and does not cover in any detail the costs and benefits arising from meeting the targets themselves. These were covered in the RIA appended to Waste Strategy 2000 (Cm 4693-2) – see Annex I.

(ii) Background

2.3 The Directive requires reductions in the landfill of BMW to 75% of the total amount of BMW produced in 1995 by 2006, to 50% of the 1995 figure by 2009 and to 35% of the 1995 figure by 2016. There was a derogation of four years offered to member states which landfilled over 80% of their municipal waste in 1995. The UK is qualified to take make use of the derogation and the Government intends to do so. Therefore, the target years for the UK are 2010, 2013 and 2020.

2.4 Biodegradable waste is defined by the Directive as ‘any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard’. Municipal waste is defined as ‘waste from households, as well as other waste which, because of its nature or composition, is similar to waste from households’.

2.5 Following a 1999 consultation on limiting landfill, the Government announced in Waste Strategy 2000 that it would introduce a trading scheme to assist WDAs in meeting the Directive targets. To achieve this, primary legislation was required and a Bill was presented to Parliament in November 2002. The Waste and Emissions Trading Act was granted Royal Assent on 13 November 2003.

(iii) Risk assessment

2.6 In the process of anaerobic decomposition biodegradable waste produces methane which is a powerful greenhouse gas and is explosive. Methane comprises 20% of the gas that causes global warming. A quarter of all UK emissions of methane come from landfill. The UK produces 15% of all EU methane emissions and 13% of EU methane emissions come from waste. Assuming that the

EU produces one-third of world methane emissions, the UK's landfills produce 0.25% of world green house gas emissions; some of this 0.25% will be produced from BMW.

2.7 Estimates for the total cost of global warming to the British economy are not available. The Department has however sponsored preliminary research by Environmental Resources Management Ltd. to estimate the cost of adapting to climate change in key sectors such as water and flooding. In addition, the Association of British Insurers has estimated that weather damage claims associated with the current climate cost an average of £710 million per year over the period 1988–89 to 1998–99. The damage costs associated with extreme weather are likely to rise as such events become more frequent in future due to climate change.

2.8 The UK produces 420 million tonnes of waste each year, of which 30 million tonnes is municipal waste. In England the total amount of municipal waste has continued to rise to an estimated 28.8 million tonnes in 2001/02 compared to 28.1 million tonnes in 2000/01, an increase of 2.4 per cent. The proportion of municipal waste being recycled or composted increased from 12.3 per cent in 2000/01 to 13.5 per cent in 2001/02. The proportion of waste incinerated with energy recovery has remained roughly constant at just under 9 per cent in 2000/01 and 2001/02. The proportion of municipal waste being disposed of in landfill has decreased from 78 per cent in 2000/01 to 77 per cent in 2001/02. However, the actual tonnage of municipal waste disposed of in landfill has still increased slightly from 22.1 million tonnes in 2000/01 to 22.3 million tonnes in 2001/02. Past studies showed that the average BMW content of household waste in England is 63%. Recent work done by the Strategy Unit in their report, 'Waste Not, Want Not' suggests that this figure is now around 68%.

2.9 In adopting the whole of the Landfill Directive (rather than just Article 5 which is dealt with in the Act) all EU member states have agreed that landfill is not a sustainable way of disposing of waste and have committed their waste industries to not only reducing the amount of waste that goes to landfill, but also by implication the number of sites required to cater for this reduced usage. But the restrictions on BMW will only have a limited effect as it is only a small proportion of the amount of waste landfilled (less than 5%) and no landfill site takes BMW alone. Moreover, the costs of the specific scheme that will implement the provisions of the WET Act impact chiefly on local authorities and restrictions on landfilling biodegradable municipal waste will be their responsibility.

2.10 The requirement to move away from landfill has been well known within the waste management industry and amongst waste producers for at least the last decade, although it has been appreciated by all that strategic change will take time to implement. Government has made clear it's objectives by implementing targets for recycling and re-use of waste both for local authorities and for commercial and industrial waste producers. Waste Strategy 2000 clearly identifies landfill as the bottom of the waste hierarchy and the least desirable option of dealing with waste.

2.11 The risks of not having a landfill allowance scheme for the implementation of the Directive are higher costs and missed targets. Missed targets will lead to greater green house gas emissions and hence potentially greater global warming. It could also lead to large fines from the EU if the result is that the UK misses its landfill reduction targets.

3 OPTIONS

Option 1

3.1 ***Do nothing:*** To do nothing (i.e. not introduce a scheme as provided for in the Act) would mean that the UK may continue to be in breach of the Landfill Directive (1999/31/EC). The

Directive came into effect on 16 July 1999 and should have been transposed into UK law not later than two years after then - by 16 July 2001. A Reasoned Opinion issued by the Commission on 21 March 2002 asserts the UK's failure to transpose Article 5(1) and 5(2) of the Directive. The UK's reply accepted the failure to transpose and undertook to give the provisions legal effect as soon as Parliamentary time allowed. The Landfill (England and Wales) Regulations 2002, that came into force in on 15 June 2002, transposed the technical requirements of the Directive into UK law affecting England and Wales. It could be argued that this is not strictly speaking an option and the UK has an obligation to meet the Landfill Directive targets. However, it is included as a "business as usual" scenario.

Option 2

3.2 **Introduce a Landfill Allowances Scheme, but without trading:** The scheme, that would be part of a package of measures to meet the Landfill Directive targets (these include increases in the landfill tax and the Waste Implementation Programme), would allocate to each WDA the amount of BMW that it will be allowed to landfill in every year up to and including 2020. If a WDA breaches the limits it will be liable to a civil penalty. The allocation will be made on the following basis:

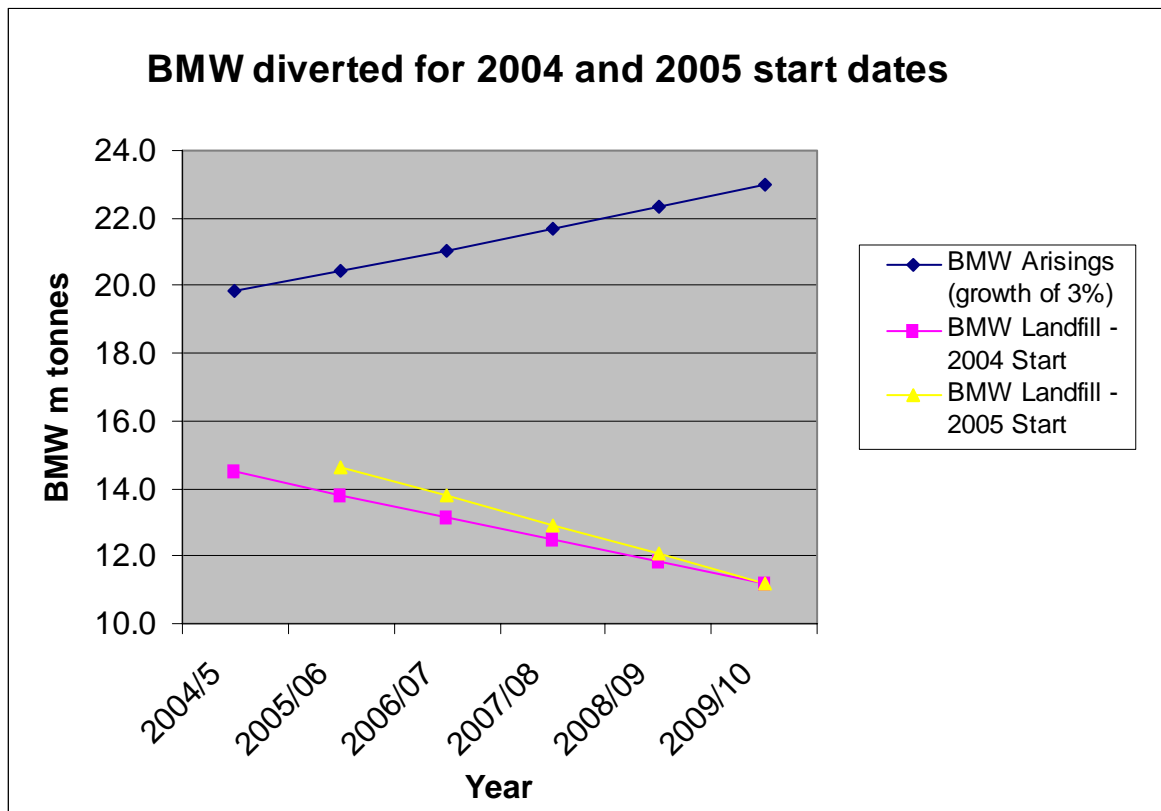
- (i) INITIAL YEAR ALLOCATIONS – to be based on a WDA's BMW landfill rate in 2001/02, calculated using a basic mass balance system (see para 3.9) to take account of BMW waste diversion.
- (ii) TARGET YEARS – to be based on a WDAs current waste arisings, using 63% as the BMW portion.
- (iii) SCHEME YEAR ALLOCATIONS – straight line reduction between base year-1st target year; 1st target year-2nd target year; 2nd target year-3rd target year.

3.3 In theory, the scheme could start at any time before July 2009. In the statement on the Local Government Finance Settlement on 19 November 2003, it was announced that the introduction of the Landfill Allowance Trading Scheme would be deferred until 2005/06 to reduce spending pressures on local authorities. Delaying the start date by a further year would create a cost saving of around £189m.⁴ However, this would make it significantly more difficult to meet the 2010 target (assuming that most WDAs will do nothing until they have to). The longer the start date is delayed the steeper the annual reductions local authorities would have to make, increasing the risk that England will fail to meet its targets under the landfill directive. The table and chart below illustrate this.

BMW diverted for 2004 and 2005 start dates (m tonnes)						
	2004/5	2005/06	2006/07	2007/08	2008/09	2009/10
BMW Arisings (growth of 3%)	19.8	20.4	21.0	21.7	22.3	23.0
BMW Landfill - 2004 Start	14.5	13.8	13.2	12.5	11.9	11.2
BMW Landfill - 2005 Start		14.6	13.8	12.9	12.1	11.2
Target BMW landfill as percentage of 1995 BMW arisings						

⁴ This assumes that England landfilled 15.64 million tonnes of BMW in 2001/02 (estimated using a mass-balance approach), that the marginal cost of diversion is £60 per tonne (landfill £40 per tonne and recycling / composting £100 per tonne), discounting at 3.5%. Landfill tax is a transfer payment between different tiers of Government and is therefore excluded from the analysis.

	2004/5	2005/06	2006/07	2007/08	2008/09	2009/10
BMW Landfill - 2004 Start	97%	93%	88%	84%	79%	75%
BMW Landfill - 2005 Start		98%	92%	86%	81%	75%
Target BMW landfill as percentage of actual BMW arisings						
	2004/5	2005/06	2006/07	2007/08	2008/09	2009/10
BMW Landfill - 2004 Start	73%	68%	63%	58%	53%	49%
BMW Landfill - 2005 Start		72%	65%	60%	54%	49%



3.4. Financial penalties will be automatic if a WDA exceeds its allocation for any year(s). This penalty could be suspended or waived but only in exceptional circumstances (the Secretary of State will issue guidance on the circumstances in which she would exercise her power to extend the time for paying or to relieve liability to a penalty). The penalty for landfilling more than permitted by the allowances held will be £200 per tonne. This can be changed by amending the Regulations if necessary.

3.5 Without a provision for penalties, WDAs will have no incentive to achieve their targets. Indeed, not meeting their targets will be the cheapest option available to them and would therefore act as a positive encouragement not to divert BMW away from landfill. This would almost certainly result in the UK Government facing massive fines from the EU for failure to fulfil its obligations.

3.6 Supplementary penalties are also allowed for in the WET Act. These will apply where a breach of allowances causes the UK as a whole to miss its Landfill Directive targets and are likely to be based on the fine the UK itself receives from the European Commission for missing the target. The level of these fines on the UK will depend on the seriousness of the breach.

3.7 The WET Act also provides for penalties to be imposed on WDAs that fail to comply with their obligations to provide monitoring information to the Environment Agency. The level of fine will be £1000.

3.8 The Environment Agency (EA) will set up a mass balance system to measure the amount of BMW each WDA in England and Wales sends to landfill. First year allocations to WDAs will be derived from municipal solid waste (MSW) landfill rates. It will be assumed, for the purposes of this allocation, that 68% of MSW is made up of BMW (This figure is based on analysis done for the Strategy Unit's report: Waste Not, Want). These figures will then be adjusted using a basic mass balance system according to the latest information we have available about the levels of BMW that each WDA diverts from landfill.

3.9 The mass balance approach involves using the fact that the amounts of waste and of the individual components in the system are constant. Therefore, if the weight of biodegradable materials **diverted** from landfill can be measured and if the proportion of biodegradable material that was in the waste **to start with** is known, it is possible to calculate the amount of BMW landfilled. The Government's view is that using a mass and materials balance is more efficient and more accurate than sampling individual refuse collection and other vehicles entering landfills with MSW. It will reflect the actual diversions of BMW achieved much more closely and provide increased incentives for WDAs to separate the biodegradable components of MSW.

3.10 Waste disposal and collection authorities currently provide Defra with this monitoring information annually according to financial years for the current municipal waste management survey. However, for monitoring purposes the EA will need to keep track of biodegradable waste landfilled throughout the year and annual reporting will not be sufficient. It will be desirable for WDAs and essential for the Government to have in place an early warning system to spot and deal with possible problems in meeting targets. Also, information on the amount of BMW landfilled in the UK will need to be reported to the European Commission for target years on the basis of a July to June year, rather than a financial year. For these reasons it is proposed that WDAs will be required to report the information on a quarterly basis

3.11 This should not add significant extra burdens on local authorities as they already collect this information for their own records on a quarterly basis and provide it to Defra annually for the current annual municipal waste management survey. The additional burden will merely be one of reporting more regularly.

3.12 In order to make this process easier the Government is working with the EA to produce an electronic form of the questionnaire for local authorities and software to make it easier for local authorities to report the information. This is called WasteDataFlow and should be launched in England in 2004. Defra, WAG and the EA are also reviewing the data items currently collected to establish whether any can be discarded and which will need to be reported every quarter.

3.13 Accurate recording, thorough checking and validation, and timely reporting of information on municipal waste management are vital to the success of the system and to the UK's ability to meet its targets. The Government does not expect that local authorities will need a significant additional level of resources into this process than should already be going into the existing reporting system. However, it is apparent that both the amount and quality of this resource will need to be increased for some authorities, to meet these revised reporting requirements. Those authorities which cannot already provide information in this way will need to factor this requirement into their resource planning.

Option 3

3.14 *Introduce a Landfill Allowances Trading Scheme with a straight line trajectory:* Under this option the scheme would have many of the same features as under option 2:

- The scheme will allocate allowances to each WDA as in the non-trading scheme.
- Financial penalties would again be automatic if a WDA exceeds its allocation for any year(s) and could be waived or suspended on the same basis. Supplementary penalties will apply.
- The same monitoring system will be used.
- Delaying the start date will have the same consequences.

3.15 With a trading scheme, WDAs will be able to buy and sell allowances depending on whether they find it lower cost to divert from landfill or to buy allowances from another waste disposal authority. Trading is not compulsory; a waste disposal authority could choose to landfill in line with their allowances without trading. The advantage of trading is that it overcomes the fact that the diversion costs that each waste disposal authority faces will differ according to their particular circumstances.

3.16 Under this option, trading, banking and borrowing of allowances will be permitted, but some restrictions will apply. Certain restrictions, such as preventing banking and borrowing across target years, are put in place by the WET Act in order to prevent the UK from breaching its targets. Local authorities will be able to borrow up to 5% of their allocation for the following year; restricting borrowing in this way will ensure that authorities are not able to delay decisions and investment in diversion infrastructure.

3.17 This option would draw a straight line between the total amount of BMW allowances allocated in 2005 and the England target in 2010 and then straight lines between England's targets in 2010, 2013 and 2020. This would mean within each interim period England as a whole would be required to make the equal annual reductions in BMW landfilled. Even with a straight line trajectory for England, individual WDAs can use trading, banking and borrowing of allowances to settle on the trajectory that best suits their investment plans (see paragraphs 3.24 – 3.25).

3.18 The Government has considered introducing a safety margin when allocating allowances, to ensure that the UK never exceeds its Landfill Directive target. If a safety margin was used, it would mean that allocations would be lower for every WDA and there is a cost attached to this approach. The table below sets out the costs of different safety margins for the 2010 target, the NPV difference between no safety margin and a maximum of 5%. The assumptions are: the marginal cost of diversion, that is, the difference in costs between landfill is £60 per tonne (landfill £40 and recycling/composting £100) and that there is no safety margin in 2013 (discounting at 3.5%, and its is assumed landfill tax is a transfer payment).

Cost of various safety margins	
%	£m
1	£35.30
2	£70.60
3	£105.90
4	£141.20
5	£176.50

As can be seen, the cost to WDAs are significant and it is unlikely that the Government will agree to hold a safety margin.

3.19 WDAs will be able to make private contractual agreements with other WDAs to trade from their future allowance allocation of allowances (forward trading). For example, in 2005/06 WDA 1 could make a private agreement to sell 500 tonnes of its 2008/09 allocation to WDA 2. WDAs will be required to register this trade in the year in which the contract is made (i.e. in the example above, registration must take place by the end of the 2008/09 scheme year). Requiring immediate registration will have the benefit of allowing the Government and WDAs to monitor the level of futures trading that is taking place.

3.20. The market price of allowances will not be capped by legislation but the level of penalties will act as an effective cap on their price. The Environment Agency (EA) will provide an internet trading advert board to facilitate potential trades. Details of allowances which have been traded, banked or borrowed will also be made available on the public register as and when they happen. Price information will also be made available to help inform decisions although this may be aggregated initially.

3.21 Cross border trading will be possible if the countries involved agree.

Option 4

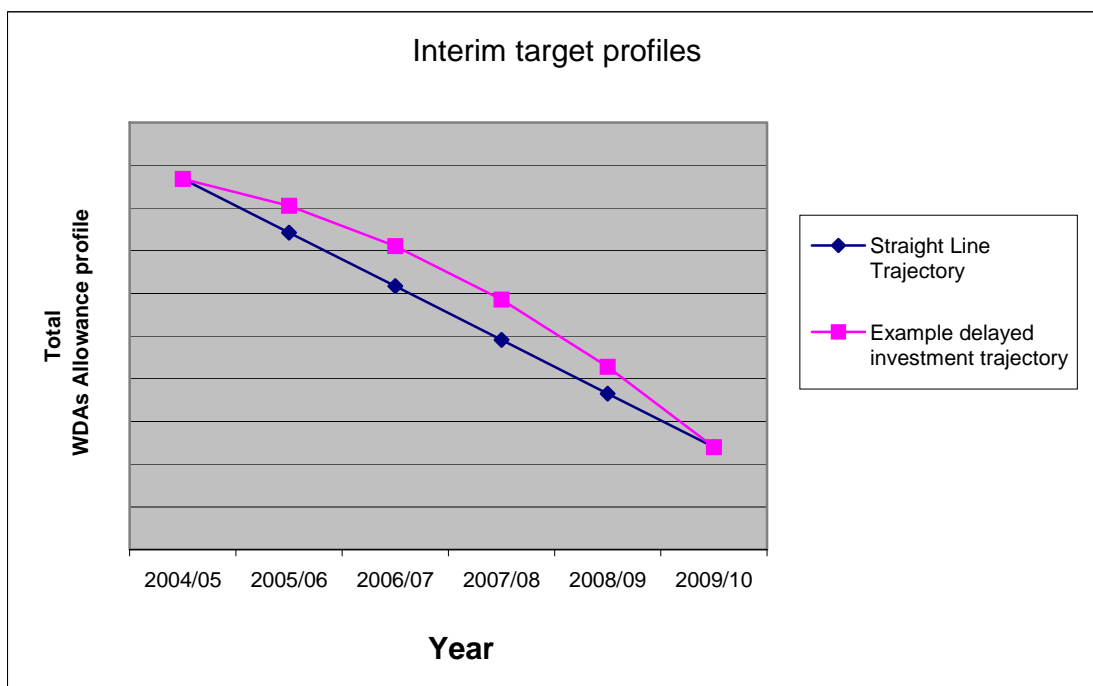
3.22 *Introduce a Landfill Allowances Trading Scheme with a back-end loaded trajectory:*

3.23 Under this option, the scheme would have many of the same features as under options 2 and 3:

- The scheme will allocate allowances to each WDA as in the non-trading scheme.
- Financial penalties would again be automatic if a WDA exceeds its allocation for any year(s) and could be waived or suspended on the same basis. Supplementary penalties will apply.
- The same monitoring system will be used.
- Delaying the start date will have the same consequences.
- There will be the flexibility to trade, bank and borrow (with the same restrictions).
- The same costs would be associated with a safety margin and the position would be the same on forward trading, the price of allowances and cross-border trading.

3.24 The difference between options 3 and 4 would be that under this option there would be a back-end loaded trajectory between 2005 and 2010. This would involve drawing a convex curved line between the total amount of BMW allowances allocated in 2005 and the England target in 2010. Straight lines would then be drawn between each of the target year amounts. This would mean that between 2004 and 2010 England as a whole would have to make **steeper** annual reductions in BMW landfilled as the 2010 target year approaches.

Illustration of back-end loaded and straight line trajectories between 2004 and 2010.



3.25 The level of allowances for individual WDAs in interim scheme years will depend on whether the aggregate trajectory for England is straight or back-end loaded:

3.26 Implications if the aggregate diversion profile between 2004 and 2010 is back-end loaded:

- a) All WDAs that are not currently diverting enough BMW to meet their 2010 targets would have a curved convex trajectory of allowances between 2004 and 2010. This implies that their profile of allowances will decrease more steeply towards the first target year. They would have an evenly declining number of allowances between 2010 –2013 and 2013 to 2020.
- b) WDAs that are currently already diverting enough to meet any of their target year allowance allocations will have different trajectories depending on whether their allowances are capped.
- c) In practice, WDAs can use trading, banking and borrowing of allowances to settle on the trajectory that best suits their investment plans.

3.27 After considering responses to the Consultation, the Government has decided to use a trajectory of 10/15/20/25/30%. This has a present value cost saving of approximately £186m when compared with the straight-line trajectory.⁵ It delivers most of the diversion after 2008, as requested by many respondents, but also includes significant reductions in the early years of the scheme to reduce the risk of England failing to meet its landfill diversion targets.

4 BUSINESS SECTORS AFFECTED

⁵ This assumes that England landfilled 15.64 million tonnes of BMW in 2001/02 (estimated using a mass-balance approach), that the marginal cost of diversion is £60 per tonne (landfill £40 per tonne and recycling / composting £100 per tonne), discounting at 3.5%. Landfill tax is a transfer payment between different tiers of Government and is therefore excluded from the analysis.

4.1 While the requirements of the Landfill Directive will affect waste management companies (including landfill operators and incineration plants), waste producers, haulage companies, waste treatment plants and recycling facilities, the businesses directly affected by these Regulations are landfill operators. In England (and Wales) the landfill site operators are licensed by the Environment Agency (EA), although this is changing to a permitting system under IPPC (Integrated Pollution Prevention and Control).

4.2 The EA licences some 2900 landfill sites in England and Wales. The vast majority are issued to small companies operating fewer than five sites. There are also bigger players in the market and 27 companies operate 10 or more sites; in addition 4 companies operate 30 or more sites. No single company operates more than 36 sites. With the onset of the IPPC permitting system (replacing waste management licenses for landfills), sites still accepting waste will reduce to around 900. However, those landfills not accepting waste will still be subject to a waste management licence until such time as the environmental threat from the landfill has passed and the licence can be surrendered. This could take 50 years or more.

4.3 The administrative burden on landfill operators under all but option 1 will be to record the amount of municipal waste which they accept and from whom. The monitoring authority will require returns and will be able to inspect records. These will not be onerous new duties as these sites are already regulated and keep records of the waste which they receive and these records are subject to inspection. However, having this cross check built into the scheme will help convince the EU Commission that our system is robust and reliable.

4.4 With a diversion of BMW from landfill, landfill operators may face falling revenues and some waste producers (whose waste is collected currently by local authorities) may experience higher costs. However waste reprocessors and incinerator companies may benefit from an increased demand for their services. The location and impact on these winners and losers will differ between options. These costs are not considered here, as they result from the Landfill Directive itself, rather than the design of LATS. They were considered in the RIA appended to Waste Strategy 2000 (see Annex I).

5 BENEFITS

Option 1 – Do Nothing

5.1 The gas produced by landfill has potential to be a source of energy generation. Currently in the UK, there are approximately 150 (out of over 3200) sites generating electricity for the grid and the UK landfill gas resource is estimated to be equivalent to around 6.75 Tera Watt hours per year (around 2 % of the current UK electricity demand)⁶. This source will decline as the amount of BMW sent to landfill falls.

Option 2 – Introduce a Landfill Allowances Scheme, but without trading

5.2 This option is clear and transparent, with WDAs knowing exactly what they have to do and when they have to do it. It should also result in the UK meeting its Landfill Directive BMW targets. Meeting the targets (which the UK has to do regardless of any allowances scheme) would result in a lowering of methane production from landfills and so would contribute towards meeting the UK's climate change targets.

⁶ Department of Trade and Industry, 2002

5.3 Depending on how this extra cost to the WDAs is funded, there should be no significant impact on consumers and social issues by this or any of the other options.

5.4 There is also the question of when an allowances scheme should begin and whether the allocations should be on a straight line trajectory (see options below). The scheme is designed to help WDAs meet their obligations in the most straightforward way. For WDAs to obtain the most benefit from the scheme, it should begin as early as possible. This results in the reduction required each year to be less (the later the start, the steeper the reduction – see table and chart at paragraph 3.3 above) and the likelihood of meeting targets should be greater.

Option 3 – Introduce a Landfill Allowances Trading Scheme with a straight line trajectory

5.5 The benefits of a straight line trajectory are:

- it would be simple and clear to operate;
- it would encourage WDAs to make early investment decisions reducing the risk of England failing to meet its 2010 target;
- it would enable Government to monitor England’s progress against its targets and take intervening action earlier if there is a risk that the 2010 target will not be met;
- it would deliver environmental benefits earlier;
- it may facilitate more systematic trading from the early years of the scheme because WDAs will have to begin making investment plans immediately.

5.6 This option adds flexibility to option 2 and allows the UK to meet its targets in a much more cost effective way than without a trading system. The advantage of trading is that it overcomes the fact that the diversion costs that each waste disposal authority faces will differ according to their particular circumstances.

5.7 This option would encourage waste disposal authorities with the lowest diversion costs to landfill less than the allowances allocated to them and sell their extra allowances profitably to waste disposal authorities which face a higher cost of diversion. Waste disposal authorities with higher costs of diversion will prefer to buy allowances to achieve their target at a lower cost than actually undertaking the diversion themselves. Landfill allowance trading based on market principles will enable England to meet its targets in a much more cost effective way than without a trading system (the exact benefits of trading cannot be estimated as we do not have complete knowledge of all WDAs cost curves for diversion).

5.8 With a trading scheme the question of when an allowances scheme should begin and whether the allocations should be on a straight line trajectory is more acute. The trading scheme is itself designed to help WDAs meet their obligations in the most straightforward and *cost effective* way. For WDAs to obtain the most benefit from the scheme, it is even more vital for the scheme to begin as early as possible. This results in the reduction required in each year to be less and therefore again increases the likelihood of England meeting its targets. Also, individual WDAs can use trading, banking and borrowing of allowances to settle on the trajectory that best suits their investment plans.

Option 4 - Introduce a Landfill Allowances Trading Scheme with a back end loaded trajectory

5.9 The benefits of a **back-end loaded trajectory** are:

- it reduces the overall cost to local authorities of complying with the scheme (see paragraph 3.27);
- it better reflects the time lag needed before new diversion infrastructure comes on line;
- it allows more time for other measures, such as the performance reward grant to take effect.

6 COSTS

6.1 It is clear that meeting the targets set out in Articles 5 (1) and (2) of the Landfill Directive will have large implications for the waste industry – both in terms of a change in existing procedures and facilities and new opportunities for commercial activity. However, the WET Act and the corresponding Regulations do not impose these targets (they exist anyway) but instead provide a means whereby the targets can be met in the most cost effective way.

6.2 Option 1 would not have any direct effect on costs as it preserves the status quo, although the UK would be liable to substantial fines for breaching the Landfill Directive targets. The remaining options could allow a gradual reduction in the amount of biodegradable municipal waste going to landfill. This means that waste producers and waste management companies would have more time to adapt and find lower cost means of waste reduction and diversion.

6.3 Although support will be given under the Waste Implementation Programme to help local authorities achieve their targets, including those on landfilling, option 2 would itself offer no support or flexibility. WDAs would be allocated their allowances for each year and be expected to adhere to them. Also, without trading, option 2 would be less efficient. WDAs face different diversion costs according to their particular circumstances. WDAs that face very high diversion costs will have no choice but to pay them. Equally, WDAs with lower costs may not use all their allowances and without trading, those allowances will be lost to the system and therefore England will be undertaking more diversion than is strictly necessary to meet the targets.

6.4 If allowances are tradable (options 3 and 4) this would provide even greater flexibility, and could further reduce the costs of meeting the Directive's targets. This is because tradable allowances would allow the greatest amount of waste diversion or reduction to occur in areas where recycling, composting, incineration, and waste minimisation are cheapest and most practicable. Delaying the start date would again increase the chances that the UK would not meet its 2010 target and so face fines by the ECJ.

6.5 It is not envisaged that options 2-4 will place a great burden on landfill operators or small businesses. Landfill operators will face administrative costs in terms of additional record keeping requirements but it is not expected that this will be onerous given that operators are already required to maintain such records.

Compliance Costs

6.6 Compliance costs for meeting the Article 5 targets, which is the purpose of the Act, rest on local authorities rather than business. The wider compliance costs for meeting the Landfill Directive were set out in Waste Strategy 2000.⁷

6.7 Continued failure to transpose the remainder of the Directive into UK law to the Commission's satisfaction (Option 1) could mean that the UK Government would incur infraction fines in the region of £65,000 per day. In addition the UK could be fined up to £500,000 per day -

⁷ Waste Strategy 2000 Cm 4693- 2

£180 million per year - for not meeting the BMW reduction targets (an almost certain outcome from option 1 and a possible one from option 2).

6.8 Option 1 and possibly option 2 would also result in the potential long term risks to the environment attached to landfilling biodegradable waste continuing to build up.

6.9 A straight line trajectory (option 3) would cost local authorities in aggregate more than a back-end loaded trajectory (option 4) over 5 years. Taking a profile of 10/15/20/25/30 as an example, the overall reduction in cost compared with the straight line trajectory would be £186m.⁸ However, individual WDAs can use trading, banking and borrowing of allowances to settle on the trajectory that best suits their investment plans.

6.10 On the other hand, a back-end loaded trajectory would have its own disadvantages:

- experience with other waste related targets show that WDAs will defer investment decisions for as long as possible and this option could result in those decisions being left too late for them to meet their targets. If enough WDAs delay their investment decisions in this way it would not be feasible for England as a whole to make substantial reductions in BMW landfill in the final two years before 2010. This increases the risk of England breaching its target in 2010 and causing the UK as a whole to incur EU penalties of up to £0.5 million per day;
- it would be much more difficult for the Government to monitor England's progress towards the 2010 target because WDAs would be required to achieve less in the early years;
- the environmental benefits would be reduced/delayed;
- it may discourage trading at the beginning of the scheme because WDAs will all have more allowances in the early years;
- it may create market problems immediately prior to the first target year if unexpectedly have to buy allowances to meet the 2010 targets.

6:11 On the face of it, introducing a Landfill Allowances Trading Scheme in 2005-06 imposes costs of diversion on local authorities earlier than is strictly necessary. The implications of starting the scheme later are considered in 3.3. Starting the scheme one year later in 2006/07 would lead to an estimated cost saving of £189⁹ because of delayed investment. This leads to the presumption that this is gold plating and that the start of the scheme should be delayed by one or more years. However, experience suggests that many WDAs will not divert waste from landfill unless they are pushed to do so. As the tables and diagram in 3.3 show, requiring WDAs to achieve their BMW reduction in fewer years will increase the amount that WDAs have to divert each year. The steeper the reductions the more unachievable they are likely to be, increasing the likelihood that WDAs will be unable to put in place the necessary diversion infrastructure before the first target year. This could lead the UK to breach its targets under the Directive and face substantial EU fines.

6.12 Limiting Landfill¹⁰ and the Waste Strategy 2000 showed different costs for different ways of meeting the Article 5 targets. These showed that costs fell in two areas, administrative costs and the

⁸ This assumes that England landfilled 15.64 million tonnes of BMW in 2001/02 (estimated using a mass-balance approach), that the marginal cost of diversion is £60 per tonne (landfill £40 per tonne and recycling / composting £100 per tonne), discounting at 3.5%. Landfill tax is a transfer payment between different tiers of Government and is therefore excluded from the analysis.

⁹ This assumes straight line trajectories and a number of simplifying assumptions; the difference in costs between landfill is £60 per tonne and remains constant, landfill £40 per tonne and recycling/composting £100 per tonne, discounting at 3.5% and assuming landfill tax is a transfer payment.

¹⁰ Limiting Landfill October 1999

costs of diversion of biodegradable waste from landfill. The administrative costs are estimated to be valued at 5 pence per tonne of waste landfilled so being valued at about £150,000 annually for the whole of the UK. It is likely that this price will be directly passed on to the Local Authority from the landfill site operator.

6.13 Trading of landfill allowances may require some marginal additional administrative expenditure for Local Authorities that participate, mainly arising from the need to report various waste related figures to the EA. Additional costs may be incurred if the local authority chooses to use brokers.

6.14 The overall effect of trading landfill allowances will be to enable the UK to meet the Article 5 diversion targets by burden sharing and at the least overall cost to the UK.

Small Businesses

6.15 Although cost changes relating specifically to implementing the provisions of the WET Act are marginal, the RIA written for the second DETR consultation paper on the Directive **as a whole** ('The Implementation of Council Directive 1999/31/EC on the Landfill of Waste', see extract in the Annex) stated that the increased cost to a small waste producer may vary from £0 to £120 per tonne depending on the cost of pre-treatment of the waste that is required. However such increases will provide considerable incentive to recycle, reuse or otherwise minimise waste production.

6.16 The Landfill Directive as a whole will impact on small waste management businesses as requirements and restrictions on landfill site operators will increase and demand for their services may fall in the medium to longer term. In addition small businesses are less able to offer alternative forms of treatment and disposal. However, the restrictions on BMW will only have a limited effect as it is only a small proportion of the amount of waste landfilled (less than 5%) and no landfill site takes BMW alone. Moreover, the costs of the specific scheme that will implement the provisions of the WET Act impact chiefly on local authorities and restrictions on landfilling biodegradable municipal waste will be their responsibility.

Equity and Fairness

6.17 Costs will not fall unfairly on different parts of the country or on rural areas compared to urban ones. Those WDAs who will benefit from the allocations system for option 2-4 are those that have in the main invested in incineration as a waste disposal method and again, they are spread around the country and in both rural and urban areas.

6.18 Under option 2, WDAs would be allocated their allowances for each year and be expected to adhere to them. Those WDAs who face higher diversion costs because of their particular circumstances will find this option unfair as the costs to them of complying will be higher than for other WDAs.

Trading Scheme Register

6.19 An electronic register will be required to detail the number of allowances which a WDA has and the trades, banking and borrowing that it has made. The Landfill Allowances and Trading Scheme (England) Regulations require the monitoring authority to maintain a register to record details of the allowances held by each local authority and specific items of monitoring information and provide for public access to this register

6.20 The allowance system will operate electronically. Defra is responsible for establishing an internet based electronic register that can be viewed by both WDAs and members of the public.

6.21 The register will have a number of purposes. It will detail for each WDA:

- the number of allowances that it has been allocated. This will include the amount of allowances and their reference numbers and the years for which they have been allocated;
- any trades in which the WDA has been involved, including the amount of allowances traded, with whom the trade took place, the price paid and the new amount of allowances held by the WDA for each year;
- any banked allowances, including the year in which these were banked and the year in which they will expire (e.g. 2009, 2012, 2019);
- the amount of any allowances it has borrowed and the year from which they have been borrowed;
- the total amount of allowances used each year and their numbers;
- whether a penalty has been incurred (including any extension in the time for paying or suspension of the penalty and the reasons for this).

6.22 WDAs will be able to register their trades/banking/borrowing via direct input into the electronic register.

6.23 The cost of developing the register will be a maximum of £350,000. This will be funded through the Waste Implementation Programme. The costs for the EA of maintaining the Register are not expected to be high – they will need to employ perhaps one person to operate / oversee the register and the more transactions there are, the less the unit price will be. The EA will not charge a fee to authorities using the register as this could discourage trading.

7. COMPETITION ASSESSMENT

7.1 Competition is an essential part of a healthy economy, providing low prices, innovation, choice and efficiency. Some regulations can effect one or more of these types of benefits of competition. These effects may occur in markets directly affected by the regulation or in markets facing ‘knock-on’ effects from those markets originally affected.

7.2 The LATS has been reviewed using the competition filter. The impact on competition that is being evaluated is the effect of trading allowances on waste management markets as distinct from the setting of the targets themselves. The implementation options are not reviewed separately because whilst the different options may affect market sectors to a slightly differing degree the types of impact are the same. Option 2 (Introduce a Landfill Allowances Scheme, but without trading) will not affect competition at all. The assessment concluded that a landfill allowance trading scheme would not have a negative effect on competition and that it is not necessary to have a more detailed assessment.

7.3 There are two different types of affects on waste management firms:

- a. a small additional administrative cost to landfill operators specifically of recording information;
- b. there will be a reduction in municipal landfill and an increase in diversion to recycling, composting and incineration as a result of the targets. The trading of landfill allowances will result in a distributional impact on how this change takes place as competition intensifies and lower cost waste management operators are favoured.

7.4 The markets that will be affected are for the services supplied by waste management companies for:

- c. Landfill;
- d. Recycling/composting;
- e. Incineration.

7.5 Market structure and concentration varies between these markets. There are only 16 (energy from waste) incineration plants that deal with municipal waste but the largest are run by only a few operators. In terms of tonnage dealt with, one company disposes of 30% of the waste with 3 plants. Three other companies dispose of between 10-20% each. This might appear to be a highly concentrated market but once capacity is reached it is unlikely new plant can be built on a short time-scale. It is also not a unique market as there can be substitution because there are alternatives; recycling plants which also provide diversion, but are more costly, can be brought on-stream relatively quickly.

7.6 The vast majority of landfills are operated by small companies that run fewer than five sites. There are however bigger players in the market with 27 companies operating 10 or more sites and 4 large companies operating 30 or more sites. These medium and large companies would offer a full waste management service, providing access to treatment, recycling and composting facilities as well as disposal.

7.7 The Regulations are likely to affect the structure of these markets as at the national level there will be an incentive to favour the lowest cost producers to achieve diversion over and above the WDA target. At present WDAs will seek out the lowest cost diversion that they need to dispose of waste. Trading provides the incentive to divert beyond the target allowance if it can be achieved more cheaply than the diversion of other WDAs. Thus if there is spare incineration capacity it will be taken up and the cheapest recyclers of waste will expand the services they provide to WDAs. Landfill of municipal waste will decrease but the lowest cost landfill operators are more likely to maintain their market as it may be cheapest for some WDAs to continue to landfill and buy allowances instead. There should also be an impetus to technological change as the incentive will be to find cheaper diversion methods, particularly those that reduce BMW in residual waste.

7.8 Introducing an allowances scheme will not lead to higher set-up costs for new entrants to any of the markets so no barriers to entry are created. Once a new firm enters the market it will face exactly the same administrative costs as existing waste management companies. The markets for composting and incineration are subject to technological change but these could not be described as rapid due to the long investment cycles involved and the existence of a trading scheme will not inhibit, in fact may stimulate, new technologies. In the markets described there will be no restriction on the ability of firms to choose the price, quality, range or location of their products, except to the extent that competitive pressures will increase price competition.

7.9 It is clear that meeting the targets set out in Articles 5 (1) and (2) of the Landfill Directive will have large implications for the waste industry – both in terms of a change in existing procedures and facilities and new opportunities for commercial activity. However, The WET Act and the corresponding Regulations do not impose these targets (they exist anyway) but instead provide a means whereby the targets can be met in the most cost effective way.

8 RESULTS OF PREVIOUS CONSULTATION EXERCISES

8.1 The former DETR conducted four public consultations on the preferred way to implement the whole of the Directive. Two of the consultations, Limiting Landfill and the Tradable Permits (Allowances) Consultation Paper were specifically about how to implement Article 5.

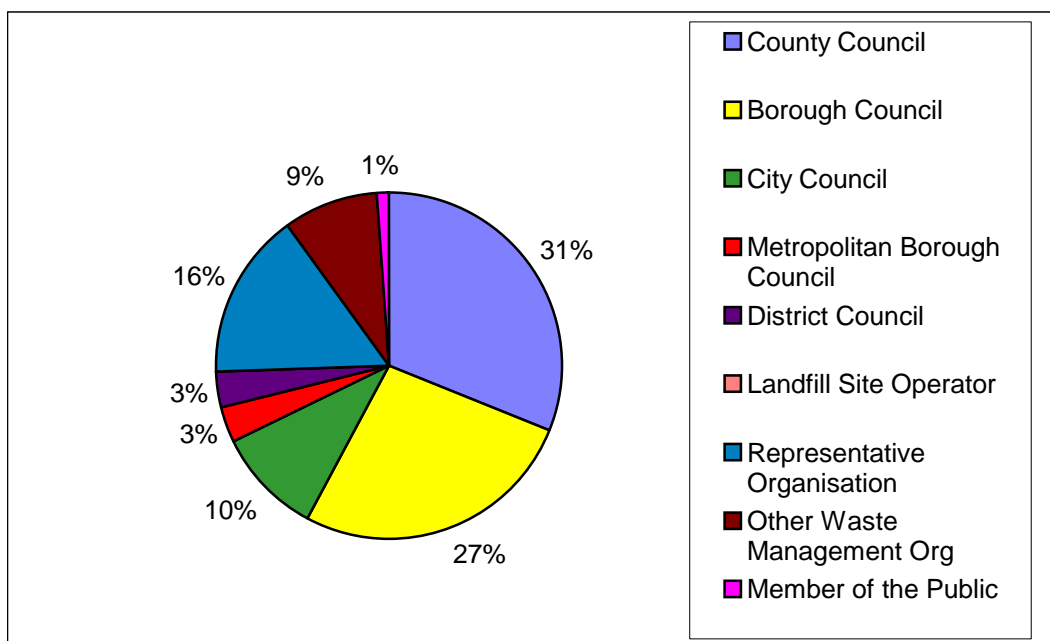
8.2 Limiting Landfill, which was put out for consultation in October 1999 with a return date at the end of November, received 201 responses. The paper asked for responses on the best way to implement Article 5. 70% of respondents were in favour of using tradable permits (now allowances) as the preferred option of implementing the Directive. In the white paper, Waste Strategy 2000, the Government announced that it would make use of a system of tradable permits (allowances) to WDAs.

8.3 Following the overwhelmingly preferred option choice of the first consultation paper, in March 2001 DETR issued the Tradable Landfill Permits Consultation Paper asking about which system design was most favoured for a tradable permits (allowances) system with a request for replies to be returned by June 2001. 77 replies were received; these revealed:

- overwhelming support for an electronic system – with adequate back up in case of system failure
- clear support for targets in certain years, with the majority of responses requesting a one off allocation of allowances up to 2020 to enable effective long-term planning
- strong support for banking of unused allowances
- agreement on the need for effective and robust monitoring of the scheme

8.4 The Landfill Allowance Trading Scheme Consultation, held between 29 August and 21 November 2003, sought views on the detailed operation of the scheme. Defra received 94 responses and the chart below illustrates the type of organisations that responded. Key points to come out of this consultation were:

- 71% of respondents would prefer the scheme year to operate in line with the financial year (i.e. 1 April – 31 March)
- 58% were in favour of allocating allowances according to a back-end loaded trajectory and 68% felt that authorities who may have an increasing profile of allowances should be allowed to retain them.
- The formula suggested for calculating the penalty could give rise too many ambiguities and therefore a fixed level of penalty should be used.



9 ENFORCEMENT, SANCTIONS, MONITORING AND REVIEW

9.1 Enforcement of the scheme will be carried out by the powers given to the Secretary of State and the devolved administrations in the WET Act.

9.2 Sanctions for breaches of the UK targets in the three Directive target years are fines levied by the EU on the UK. These fines may be passed on to the relevant administration responsible for the area of the breach and then onto the WDAs responsible. In addition, WDAs will be allocated annual landfill allowances and will face financial penalties on them in the event of a breach.

9.3 Monitoring will be carried out in England by the Environment Agency.

9.4 The onus will be on Defra to carry out reviews of the legislation. There will be a power to review or modify the strategies made under Article 5(2) from time to time – with reporting obligations to Europe. There will also be a power to amend the targets and to review the allowances if necessary. The Directive also carries a review clause for 2014.

10 CONSULTATION

10.1 The partial RIA on implementing the landfill provisions of the Waste and Emissions Trading Act was part of the consultation on the Landfill Allowance Trading Scheme. No comments were received on the RIA.

11 SUMMARY AND RECOMMENDATIONS

11.1 In adopting the whole of the Landfill Directive (rather than just Article 5 which is dealt with in the Act) all EU member states have agreed that landfill is not a sustainable way of disposing of waste and have committed their waste industries to not only reducing the amount of waste that goes to landfill, but also by implication the number of sites required to cater for this reduced usage.

11.2 The requirement to move away from landfill has been well known within the waste management industry and amongst waste producers for at least the last decade. However, it has also been appreciated by all that strategic change will take time to implement. Government has

made clear it's objectives by implementing targets for recycling and re-use of waste both for local authorities and for commercial and industrial waste producers. Waste Strategy 2000 clearly identifies landfill as the bottom of the waste hierarchy and the least desirable option of dealing with waste.

11.3 The Directive requires reductions in the landfill of BMW to 75% of the total amount of BMW produced in 1995 by 2006, to 50% of the 1995 figure by 2009 and to 35% of the 1995 figure by 2016. There was a derogation of four years offered to member states under certain circumstances. The UK is qualified to take make use of the derogation and is likely to do so, particularly for the first two target years.

11.4 The Waste and Emissions Trading (WET) Act 2003 implements Articles 5 (1) and (2) of the Landfill Directive in England. Sections 4–16 and 26 of the Act provides for an allowances scheme that will allow the UK to make use of the most cost effective and economically sound way to reduce the amount of BMW that is sent to landfill for final disposal and so meet the Directive targets.

11.5 This RIA identifies three options that should achieve this aim plus a business as usual base position:

Option 1 - Do nothing (business as usual)

Option 2 - Introduce a Landfill Allowances Scheme, without trading

Option 3 - Introduce a Landfill Allowances Trading Scheme with a straight line trajectory for allocations

Option 4 - Introduce a Landfill Allowances Trading Scheme with a back end loaded trajectory for allocations

11.6 Option 1 is not really an option and is included as a business as usual scenario. To do nothing (i.e. not introduce a scheme as provided for in the Act) would mean that the UK may continue to be in breach of the Landfill Directive (1999/31/EC). Continued failure to transpose the remainder of the Directive into UK law to the Commission's satisfaction could mean that the UK would incur infraction fines in the region of £65,000 per day. In addition the UK could be fined £500,000 per day - up to £180 million per year - for not meeting the BMW reduction targets. Doing nothing would also mean that the potential long term risks to the environment attached to landfilling biodegradable waste would continue to build up.

11.7 Option 2 is clear and transparent, with WDAs knowing exactly what they have to do and when they have to do it. It should also result in the UK meeting its Landfill Directive BMW targets. But it would offer no help to local authorities to achieve those targets. WDAs would be allocated their allowances for each year and be expected to adhere to them. Without trading the scheme would be considerably less efficient and WDAs that face very high diversion costs will have no choice but to pay them. Equally, WDAs with lower costs may not use all their allowances and without trading, those allowances will be lost to the system. The costs of preventing trading cannot be estimated as we do not have a complete knowledge of all WDAs cost curves for diversion.

11.8 Option 3 is less transparent and is more costly in terms of administrative effort for both the Environment Agency and WDAs. However, those costs are still likely to be marginal and it is more flexible than option 2. It also allows the UK to meet its targets in a much more cost effective way than without a trading system. The advantage of trading is that it overcomes the fact that the

diversion costs that each waste disposal authority faces will differ according to their particular circumstances. This option would encourage waste disposal authorities with the lowest diversion costs to landfill less than the allowances allocated to them and sell their extra allowances profitably to waste disposal authorities which face a higher cost of diversion. Waste Disposal Authorities with higher costs of diversion will prefer to buy allowances to achieve their target at a lower cost than actually undertaking the diversion themselves. There are additional costs attached to this option, when compared to option 4; a straight line trajectory is likely to cost around £186m more than the Government's preferred back-end loaded trajectory¹¹; however this has to be balanced against the increased risk that England will miss its targets and the UK will receive fines from the ECJ.

11.9 Option 4 has the same benefits of option 3 but has lower costs. These lower costs have to be balanced against the increased risk associated with this option., which could result in the UK facing infraction and non-compliance fines from the EU.

11.10 In theory, any of these schemes scheme could start at any time before July 2009. Delaying the start by a further year will lead to a cost saving of around £186m. However, this will make it more difficult to meet the 2010 target (this assumes that most WDAs will do nothing until they have to). The table and chart at 3.3 illustrate this.

11.11 The Government has considered introducing a safety margin when allocating allowances, to make sure that the UK never exceeds its Landfill Directive target. If a safety margin is to be used, it would mean that allocations would be lower for every WDA and there is a cost attached to this approach. The Government believes that these costs rule out a safety margin.

11.12 The overall aim is to make use of the most cost effective and economically sound way to reduce the amount of BMW that is sent to landfill for final disposal and so meet the Directive targets.

Summary of Costs and Benefits		
Option	Costs	Benefits
Option 1	1) Failure to meet Directive requirements: possible ECJ fines of £500,000 per day or £180 m per year	
Option 2	1) Landfill site operators admin costs - £150,000 pa (probably passed on to WDAs) 2) Environment Agency costs of setting up and running monitoring system – currently being estimated 3) WDA additional cost of reporting monitoring information to the EA on a quarterly basis – we seek views on what this is likely to be 4) Cost of not allowing trading (LATS will be less cost effective)– this cannot be estimated as we do not know individual diversion cost curves for WDAs	1) Environmental benefits associated with meeting Landfill Directive

¹¹ This trajectory is 10/15/20/25/30%. The cost saving assumes that England landfilled 15.64 million tonnes of BMW in 2001/02 (estimated using a mass-balance approach), that the marginal cost of diversion is £60 per tonne (landfill £40 per tonne and recycling / composting £100 per tonne), discounting at 3.5%. Landfill tax is a transfer payment between different tiers of Government and is therefore excluded from the analysis.

Option 3	<p>1) Landfill site operators admin costs - £150,000 pa (probably passed on to WDAs)</p> <p>2) EA costs of setting up and running monitoring system.</p> <p>3) Cost of developing and maintaining an electronic register – maximum of £350,000</p> <p>3) WDA additional cost of reporting monitoring information to the EA on a quarterly basis.</p> <p>4) WDA additional costs of planning and putting into effect a trading strategy .</p> <p>5) Costs (compared to option 4) depending on the shape of the backend-loaded trajectory.</p>	<p>1) Environmental benefits associated with meeting Landfill Directive</p> <p>2) Benefits of trading (LATS will be more cost effective) – this option will encourage the most trading – benefits cannot be estimated as we do not know individual diversion cost curves for WDAs</p>
Option 4	<p>1) Landfill site operators admin costs - £150,000 pa (probably passed on to WDAs)</p> <p>2) EA costs of setting up and running monitoring system .</p> <p>3) Cost of developing and maintaining an electronic register – maximum of £350,000</p> <p>4) WDA additional cost of reporting monitoring information to the EA on a quarterly basis.</p> <p>5) WDA additional costs of planning and putting into effect a trading strategy .</p> <p>6) Increased risk (compared to option 3) that UK will fail to meet its Directive targets, leading to possible fines of up to £180 m per year.</p>	<p>1) Environmental benefits associated with meeting Landfill Directive</p> <p>2) Benefits of trading (LATS will be more cost effective) – this option will encourage the most trading – benefits cannot be estimated as we do not know individual diversion cost curves for WDAs</p> <p>3) Savings (compared to option 3) of £186m if a trajectory of 10/15/20/25/30% is used.</p>
Delayed start	<p>1) Increased risk that the UK will fail to meet its Directive targets, leading to possible fines of up to £180m per year. These risks are higher the more the start date is delayed.</p>	<p>1) Delaying the start date by, for example, 1 year will result in cost savings of around £186m because of delayed investment</p>
Safety Margin	<p>1) Costs of between £35 and £177m depending on the size of the safety margin</p>	<p>1) Built in safeguard to help ensure that the UK does not fail to meet its directive targets and so avoiding fines of up to £180m per year</p>

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed by the responsible Minister

Elliot Morley

Date 22nd September 2004

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EXTRACT FROM WASTE STRATEGY 2000**Estimating the Costs of the Targets for Recovery and Recycling of Municipal Waste**

1. The modelling work summarised in this Annex refines and updates similar modelling presented in the RIA of the draft waste strategy A Way With Waste. Five mixes of waste management options were modelled to produce cost estimates over the period 2000 to 2020. A ‘base case’ was modelled so that the additional costs of meeting the Landfill Directive targets for biodegradable municipal waste and the waste strategy goals could be calculated. Mixes 1-4 were all designed to meet the Landfill Directive targets. Mixes 1 and 2 were expected to offer the least expensive way to meet the Landfill Directive targets, but were not designed to meet the waste strategy targets. Mixes 3 and 4 were designed to meet the waste strategy targets, which go further than the requirement of the Landfill Directive targets (the Landfill Directive targets do not require recycling of non-biodegradable waste).

2. Mixes 1-4 only represent a very generalised description of the possible mixes for meeting the Landfill Directive targets. Therefore, the modelling only provides a broad indication of the scale of costs involved. The mixes waste management options modelled were as follows:

- Base Case assumes current levels (in absolute terms) of recycling, composting, and energy recovery, with all other waste going to landfill.
- Mix 1 continues current levels (in absolute terms) of recycling and composting; all waste diversion required to achieve the Landfill Directive targets is through incineration with energy recovery.
- Mix 2 continues current levels (in absolute terms) of non-biodegradable recycling but increases levels of composting and paper recycling through kerbside collection of putrescible waste and 50% of waste paper; all other diversion required to achieve the Landfill Directive targets is through incineration with energy recovery.
- Mix 3 increases levels of composting and recycling through kerbside collection of putrescible waste and dry recyclables; all other diversion required to achieve the Landfill Directive targets is through incineration with energy recovery.
- Mix 4 is essentially the same as mix 3, but assumes a greater level of provision of kerbside collection services for putrescible waste and dry recyclables.

Assumptions

3. The starting point for the modelling was waste arisings in England and Wales in 1995 (the base year for the landfill directive targets) and pattern of the arisings and disposals in England and Wales in 1998/9. It is assumed that England and Wales make use of the 4-year derogations for meeting the Landfill Directive targets.

4. A series of assumptions are made about the composition, biodegradability and recyclability of municipal waste, and the reject rate of waste collected for recycling (see Table C5). It is assumed that average the capacity of a Materials Recovery Facility (MRF) is 40 thousand tonnes per year; a composting station is 30 thousand tonnes per year; and an incinerator is 250 thousand tonnes per year. It is assumed that there will be sufficient demand for recyclables, compost and energy services from incinerators.

Table: Assumptions used in modelling

	Waste	Biodegradable	Recyclable	Reject rate
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	composition			
Paper/card	32%	100%	65%	5%
Putrescible	21%	100%	90%	5%
Textiles	2%	50%	95%	5%
Fines	7%	60%	0%	0%
Misc. combustible	8%	50%	0%	0%
Misc. non combustible	2%	0%	0%	0%
Ferrous metal	6%	0%	95%	5%
Non-ferrous metal	2%	0%	95%	5%
Glass	9%	0%	90%	5%
Plastic dense	6%	0%	33%	5%
Plastic film	5%	0%	0%	5%

5. In mixes 2 and 3, the level of provision of kerbside collection services for recycling and/or composting are ramped up to 60% of households in 2020; in mix 4, to 80% of households in 2020. All mixes were modelled at three rates of growth in waste arisings: 0%, 1% and 3% per year; and two participation rates: 75% and 55%. These participation rates are equivalent to the net result of a 'recognition rate' of around 95% (householders that recycle are proficient at recognising waste materials that can be recycled) and 'put out' rates of 80% and 60% (meaning 80% of household provided with the service actually use it). The variation in 'put out' rates has an effect on the costs of providing a kerbside collection service. The fewer households that tend to put out bins for emptying, the high the cost per tonne of providing the service – because the same kit and service has to be provided to collect a smaller amount of waste.

6. Different unit costs were therefore used to model the scenarios with different participation rates. The unit costs were estimated by the consulting firm Envirosp Aspinwall and are shown in Table C6 below. These are the total gross costs; they do not include landfill tax and may not reflect the actual level of profit earned on services provided by the private sector or the level of revenue received from the sale of materials. The costs include collection, transfer and transportation to the disposal or recovery facility, as well as gate fees. They include operating and capital costs (which are annualised for conversion to costs per tonne). The unit costs for composting appear particularly high because of the high collection cost for compostables resulting from the assumption that the putrescible content of municipal waste is around 21%. In the high participation rate scenario, the unit cost for recycling is based on a 40 thousand tonnes per year materials recycling facility being used at a rate of two shifts per day, effectively doubling the capacity of the materials recycling facility to 80 thousand tonnes per year. The unit costs used in the modelling are indicative costs only: actual costs will depend on local factors.

7. The model produces estimates of total waste management costs for each year from 2000 to 2020. A discount rate of 6% is used to convert annual costs in future years into present value costs. The total cost of each scenario is then expressed as the sum of present value costs.

Unit Cost Used in Modelling

Table: Unit costs used in modelling						
	75% participation rate			55% participation rate		
	Urban	Suburban	Rural	Urban	Suburban	Rural
Collection						
Recycling	61	79	105	66	84	111
Composting	87	119	178	97	131	198

Landfill	15	21	33	15	21	33
Incineration	15	21	33	15	21	33
Treatment						
Recycling (40K)	23	23	23	23	23	23
Recycling (80K)	17	17	17	17	17	17
Composting	10	10	10	10	10	10
Landfill	25	25	15	25	25	15
Incineration	48	48	48	48	48	48
Gross costs						
Recycling (40K)	84	102	128	89	107	134
Recycling (80K)	78	96	122	83	101	128
Composting	97	129	188	107	141	208
Landfill	40	46	48	40	46	48
Incineration	63	69	81	63	69	81

Table C6b: Unit costs used in modelling						
	75% participation rate			55% participation rate		
	Average urban, suburban & rural	Average urban & suburban	Costs used in modelling	Average urban, suburban & rural	Average urban & suburban	Costs used in modelling
Recycling (40K)		93			98	98
Recycling (80K)		87	87		92	
Composting		113	113		124	124
Landfill	45		45	45		45
Incineration	71		71	71		71

Results

8. The estimated costs for the base case and mixes 1 – 4 are shown below (Table C7). The model also shows that increases in municipal waste arisings can increase waste management costs significantly; a 3% annual growth rate would increase municipal waste arisings from around 27.7 million tonnes (1998/9 arisings) to 53.1 million tonnes per year by 2020. Even in the base case, this would result in an increase in waste management costs of around £5.6 billion (present value of costs from 2000 to 2020).

9. The additional cost of mixes 1 and 2 over the base case are £1.8 billion to £4.9 billion and £2.7 billion to £6.2 billion respectively (present value of costs from 2000 to 2020). However, it may not be possible to find sufficient sites build the number of incinerators required under mixes 1 and 2. An indication of the numbers of different types of facility that could be required is given below (Table C8). The additional costs of mixes 3 and 4 over the base case are higher: £3.4 billion to £7.1 billion and £3.9 billion to £7.7 billion respectively (present value of costs from 2000 to 2020).

Table: Estimated costs of different mixes of waste management option from 2000 to 2020, £ billion

Mix	Growth rate/yr	Present value of cost from 2000 to 2020		Cost over base case	
		75%	55%	75%	55%
Base case	0%	17.3	17.6	-	-
	3%	22.9	23.2	-	-
Mix 1	0%	19.1	19.4	1.8	1.8
	3%	28.8	28.1	4.9	4.9
Mix 2	0%	20.1	20.3	2.8	2.7
	3%	29.1	29.4	6.2	6.2
Mix 3	0%	20.8	21.0	3.5	3.4
	3%	29.2	30.3	7.0	7.1
Mix 4	0%	21.3	21.5	4.0	3.9
	3%	30.4	30.9	7.5	7.7

Estimated costs of different mixes of waste management options, 0-3% pa growth in municipal waste arisings

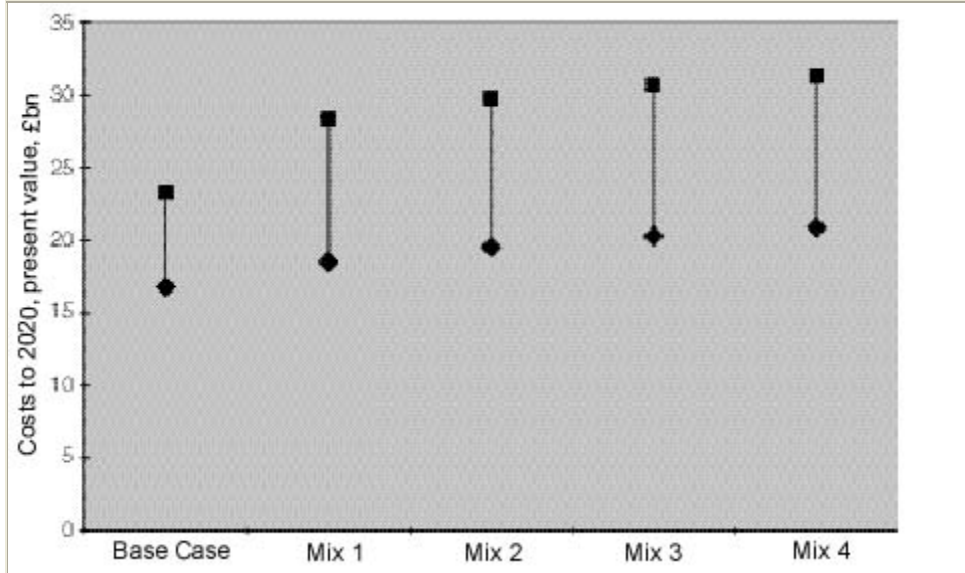


Table: Estimated numbers of new waste management facilities that could be required for diversion of waste from landfill

Mix	Growth rate municipal waste/yr	Material recycling facilities	Composting stations	Incinerators
Base case	0%	0	0	0
	3%	0	0	0
Mix 1	0%	0	0	60
	3%	0	0	166
Mix 2	0%	0	99	41
	3%	0	196	128
Mix 3	0%	113	59	33
	3%	223	116	112
Mix 4	0%	160	84	21

	3%	316	164	89
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EXTRACT FROM SECOND CONSULTATION PAPER ON IMPLEMENTING LANDFILL DIRECTIVE

Compliance Cost for Typical Small Business

Small waste producers. The cost impact on waste producers will be through increased disposal costs, which will provide further stimulus to reuse, recycle or otherwise minimise waste production. This stimulus may result in significant savings to the company. Alternatively, the company may wish to bear the additional cost of disposal, which may vary from £0 to £120/t depending on the nature of the waste and the cost of pre-treatment required. Note that these additional costs are a direct consequence of the Directive requirements, and will not be influenced by the option chosen for its implementation. For example, a typical small business producing two tonnes of mainly office waste per month could expect an increase of £200 to £650 per year. An engineering works producing eight tonnes per week of mixed wastes, including some solid special waste, could expect an increase of around £1150 to £7000 per year. A construction company disposing of 200 tonnes per week of demolition wastes, including 20 per cent non-inert wastes, could expect an increase of up to £54,000 per year as a result of treatment requirements for the non-inert component. In each case, the potential cost increase should provide a stimulus to reducing waste arisings or otherwise seek opportunities for reuse or recycling. This is particularly the case with the construction waste, where appropriate sorting and recycling have potential to result in a net cost saving.

Operator of a small landfill site. The compliance costs for an existing operator of a small landfill will comprise a number of elements. These costs will be broadly equivalent regardless of whether such a site deals exclusively with inert waste, or with active waste. By July 2002 a conditioning plan is required to be submitted, at an estimated cost of some £5000, which identifies any remedial works to be undertaken. The timetable for these works will be established on a case by case basis by the Agency as regulator, but in any case will need to be completed by July 2009 at the latest. Costs will depend on the extent of remedial works required, and may include both technical requirements (such as additional leachate or gas control) and non-technical requirements (such as additional staff training and increased financial provision). On a timescale yet to be agreed, re-authorisation will be required. If this is done under Option 2 (amendment to the existing waste management licence), this will entail a modification to the existing licence. The current modification charge is £2125 for a small non-hazardous landfill, and this may be indicative of the level of future charge incurred. Under Option 3 (re-authorisation under PPC), a new PPC licence will be required. Again, as an indication, the current charge for a waste management licence for a small non-hazardous landfill is £3950. However the annual subsistence charge under Option 3 may be lower than under Option 2 (Section 3).

TOTAL COMPLIANCE COST

The mean additional cost to waste producers arising from the treatment requirements of the Directive is estimated at some £400m per year (with a range of £290m to £500m per year at the 90 per cent confidence interval) (Appendix A). In addition, preparation of conditioning plans will place a one-off cost of between £6.5m and £35m on the landfill industry³⁶. The Environment Agency's costs in assessing these plans are subsequent re-permitting are estimated at a further one-off cost of £12.6m (Section 6), which will be passed to landfill operators through cost recovery charges. Both costs are likely to be passed back to waste producers through waste disposal charges.

However, these costs excludes wastes from the construction and demolition sector (Table

A1), which may contribute up to a further £104m (high estimate), but for which waste minimisation and beneficial use as a construction material (including in landfill design) may result in a significant cost saving (saving of £48m, low estimate). Investment in additional gas utilisation is likely to be of the order of £75 to £100m over 8 years, but would be expected to break even over the project life through the sale of electricity .