

**Environmental Statement:** prepared pursuant to Regulation 16 of the Environmental Assessment of Plans and Programmes Regulations 2004

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### 1. Introduction and Background

1. The Government published England's new waste strategy *Waste Strategy for England 2007 (WS2007)*, on 23 May 2007. *WS2007* supersedes England's previous waste strategy, *Waste Strategy 2000*. It sets out the Government's long-term vision for waste management in England, agreed after consultation, together with an implementation plan, targets and measures to support its objectives. It also responds to the requirement, under Article 7 of the EC Directive on waste (2006/12/EC of 5 April 2006<sup>1</sup>) for a national plan for the management of waste and sets out the Government's strategy for implementing its obligations under this and other European waste-related Directives, including those on hazardous waste, packaging waste and landfill.

2. This document constitutes the Regulation 16 statement (the 'Statement') for the purposes of the Environmental Assessment of Plans and Programmes Regulations 2004 (the 'Regulations'). These implement the SEA Directive,<sup>2</sup> as regards plans and programmes relating to England.

3. In February 2006 the Government launched a consultation on the revision of the waste strategy for England: *Review of England's Waste Strategy – A Consultation Document*<sup>3</sup> (the 'consultation document'). This provided the Government with the opportunity to reflect on existing policies and delivery mechanisms, including those arising from the Government's response to the recommendations made in the Prime Minister's Strategy Unit report on waste, *Waste not Want not*, and to consult on proposals for a revised waste strategy to supersede *Waste Strategy 2000*. The consultation period ended in May 2006.

4. An Environmental Report,<sup>4</sup> prepared under the Regulations, accompanied the Consultation Document. The Environmental Report included a Non-Technical Summary. As required under the Regulations,<sup>5</sup> the Environmental Report assessed the likely significant effects on the environment of implementing the strategy, including all relevant issues covered by Annex 1 of the SEA Directive and reasonable alternatives, taking into account the objectives and geographical scope of the strategy.

5. A partial Regulatory Impact Assessment (pRIA)<sup>6</sup> was also published alongside the consultation document. This assessed the impacts, costs and benefits of the proposals, including carbon benefits. The carbon benefits modelling applied to the pRIA was also applied to the Environmental Report. A final Impact Assessment has been published alongside *WS2007*.<sup>7</sup>

6. The Regulations require<sup>8</sup> that this Statement contain the following particulars:

- how environmental considerations have been integrated into the strategy;
- how the Environmental Report has been taken into account;
- how responses to the consultation (i.e. the consultation document, and other supporting documents, as well as the accompanying Environmental Report) have been taken into account;

<sup>1</sup> Directive 2006/12/EC of 5 April 2006 on waste. OJ L 114, 27.4.2006, p.10.

<sup>2</sup> Directive 2001/42/EC of the European Parliament and Council on the assessment of the effects of certain plans and programmes on the Environment.

<sup>3</sup> The consultation document is available at <http://www.defra.gov.uk/environment/waste/strategy>

<sup>4</sup> The Environmental Report and separate Non-Technical Summary are available at <http://www.defra.gov.uk/environment/waste/strategy>

<sup>5</sup> And set out in Annex I(f) to the SEA Directive.

<sup>6</sup> Available at <http://www.defra.gov.uk/environment/waste/strategy>

<sup>7</sup> The Impact Assessment is Annex A to *WS2007*.

<sup>8</sup> See Article 16(4) of the Regulations.

## Annex K: Environmental Statement

- the reasons for choosing the strategy as adopted, in the light of the other reasonable alternatives dealt with; and
- the measures that are to be taken to monitor the significant environmental effects of the implementation of the strategy.

7. This Statement is intended to comply with the requirements of Regulation 16 of the Regulations,<sup>9</sup> which implements Article 9(1) of the SEA Directive.<sup>10</sup> As well as fulfilling the legal requirements, the Statement is also intended to provide a comprehensive explanation to wider stakeholders, as well as consultation respondents, of the Government's consideration of the consultation responses.

8. This Statement describes how environmental considerations have been integrated into *WS2007*. It then provides a review of the key conclusions of the Environmental Report within the context of attaining the appropriate balance in *WS2007* of waste management options across all levels of the waste hierarchy. Consultation responses on the Environmental Report and on key themes relevant to this discussion, such as recycling and recovery targets, are considered. The Statement then also provides a review of other consultation responses and shows how these have been considered, focusing on the policies which will be used to achieve the strategic outcomes. It describes the reasons for choosing the strategy as adopted, in the light of the other reasonable alternatives dealt with. It concludes with a section on monitoring the significant environmental effects of *WS2007*.

<sup>9</sup> This document is also relevant to the requirements of Regulation 17 on monitoring – see Section 7 below.

<sup>10</sup> Article 9 sets out the Directive requirements on the content of the environmental statement and the measures to monitor implementation of the strategy. See [http://eur-lex.europa.eu/LexUriServ/site/en/oj/2001/l\\_197/l\\_19720010721en00300037.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2001/l_197/l_19720010721en00300037.pdf) for further information.

## 2. The consultation process

### The public consultation

9. The review of Waste Strategy 2000 started in early 2005 with involvement from key stakeholders using a range of informal consultation methods including workshops, seminars, bilateral discussions and structured interviews, during the initial evidence gathering and issues and options identification phase. This phase culminated in the publication of the consultation document for a formal twelve-week public consultation.<sup>11</sup>

10. The public consultation asked a total of 51 questions relating to different key areas of the consultation document. In addition, participants were asked if they had any comments on the accompanying Environment Report and the pRIA. Stakeholders were encouraged to participate in the online consultation process. E-mail and paper responses received during the consultation period were also accepted.

11. A summary of the consultation responses was published in August 2006 and is available on the Defra website.<sup>12</sup> All of the documents consulted on, including the Environmental Report, have been in the Defra library for inspection by the public at all reasonable times and free of charge. The consultation responses (unless respondents indicated that they wished their responses to remain confidential) have also been available for inspection in the library.

12. The scope of the Environmental Report took into account comments received from the statutory consultation bodies.<sup>13</sup> In October 2005, a Scoping Report was issued to these bodies seeking their views on the proposed scope and level of detail of the information to be included in the Environmental Report. Annex F of the Environmental Report contains the Scoping Report; Annex G contains a summary of responses received and how these were addressed in the Environmental Report.

13. In order to comply with Article 7 of the SEA Directive and Regulation 14 of the Regulations,<sup>14</sup> appropriate contacts in administrations of other EU Member States, and beyond the EU, were informed of the consultation and invited to comment. No responses were received.

### Consultation within Government

14. The public consultation and development of *WS2007* was overseen by a Programme Board which included representatives of the Department of Trade and Industry (DTI), the Office of the Deputy Prime Minister/Communities and Local Government (ODPM/CLG), Cabinet Office and the Treasury (HMT), as well as Defra, the Environment Agency and the Waste and Resources Action Programme (WRAP). The consultation document, pRIA and supporting Environmental Report were circulated to other government departments and the Devolved Administrations as part of the stakeholder consultation, and departments with a key interest/role in waste assisted in drafting and reviewing relevant sections of the strategy throughout the production process. A variety of discussions have been held with the Devolved Administrations on the content of *WS2007* and they have been involved in discussions on initiatives that have an impact beyond England to other parts of the UK. Where relevant, considerations of cross-border movement of waste (either for recycling or other forms of treatment) between England and other parts of the UK have been taken into account.

<sup>11</sup> Dialogue by Design, an independent consultancy, managed the on-line consultation process.

<sup>12</sup> See <http://www.defra.gov.uk/environment/waste/strategy> for further information.

<sup>13</sup> Under the Regulations, the statutory consultees were the Countryside Agency, English Heritage, English Nature and the Environment Agency. Natural England had not yet been formed.

<sup>14</sup> These provisions relate to transboundary consultations.

15. Since publication of Waste Strategy 2000 England has made significant progress in increasing recycling and diverting waste from landfill. While performance has moved significantly in the right direction it still lags some way behind that of many other European countries. *WS2007* summarises the key achievements since 2000 (see *WS2007* Executive Summary and Chapter 1).

16. The consultation document put forward a set of proposals for building on the progress already achieved and for meeting new challenges. It proposed, for example, shifting emphasis for the future to put greater focus on waste prevention, to see waste more as a resource and to highlight sustainable waste management in the non-municipal sectors<sup>15</sup> with greater integration of planning and procurement between municipal and some non-municipal waste.

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<sup>15</sup> See footnote 3 above.

### 3. Integration of environmental considerations into the revised strategy

17. This section outlines the evidence on environmental effects which was taken into account in the formulation of *WS2007*. It then shows how environmental considerations were integrated into, first, the objectives of *WS2007* and, second, its policies.

#### Evidence on environmental considerations

18. The Environmental Report considered a range of evidence on environmental impacts of waste management.<sup>16</sup> In particular, it included an environmental baseline assessment on the current state of the environment and how it is being affected by waste management practices. This assessment was based on many evidence sources, including Environment Agency data on pollution incidents to land, air and water; reported data on fly-tipping incidents; emissions of pollutants to air from statistics in the National Atmospheric Emissions Inventory and the UK Greenhouse Gas Inventory; a 2004 review commissioned by Defra from Enviros and the University of Birmingham on the environmental and health impacts of waste management. For further details see Section 4 below.

19. Also, evidence available post-publication of the consultation document was used to strengthen the integration of environmental considerations into *WS2007*. Three key studies are:

- *Carbon Balances and Energy Impacts of the Management of UK Wastes*, ERM and Golder Associates report for Defra, March 2007<sup>17</sup> (the Carbon Balances Report). This study on life-cycle carbon impacts of waste management broadly supports the waste hierarchy and the benefits of source separating recyclates. In particular, it has strengthened the developing focus signalled in *WS2007* on priority materials;<sup>18</sup>
- *Environmental Benefits of Recycling: An international review of lifecycle comparisons for key materials in the UK recycling sector*, WRAP May 2006.<sup>19</sup> This study concluded, in line with the Environmental Report, that – in terms of overall environmental performance – recycling is generally preferable to incineration and overwhelmingly preferable to landfill; and
- a Defra-commissioned report on the causes and incentives of fly-tipping<sup>20</sup> published by The Jill Dando Institute at UCL University in July 2006 – see further Section 5 – illegal waste activity below.

20. The Carbon Balances Report, and other data available since publication of the consultation document, were used to update the assessment of carbon benefits of the various policy options. This has been included within the Impact Assessment of *WS2007*.<sup>21</sup> As the evidence base improves further, including as a result of new research already commissioned (and to be commissioned) by Defra, new evidence will be fed into the strategy implementation process.

#### Objectives of *WS2007*

21. Environmental impacts are fundamental to the strategy. The formulation of the objectives of *WS2007* took account of objectives in the Government's Sustainable Development Strategy 2005, *Securing the Future*, the objectives developed for the SEA in the Environmental Report and objectives in the European legislative framework.

<sup>16</sup> The conclusions of the Environmental Report and how it was taken into account are set out in Section 4 below.

<sup>17</sup> See Defra press release of 5 March 2007, at <http://www.defra.gov.uk/news/2007/070305c.htm> The report can be viewed at [http://www.defra.gov.uk/science/project\\_data/DocumentLibrary/WR0602/WR0602\\_4750\\_FRP.pdf](http://www.defra.gov.uk/science/project_data/DocumentLibrary/WR0602/WR0602_4750_FRP.pdf)

<sup>18</sup> See Chapter 4 of *WS2007*.

<sup>19</sup> Available on the WRAP website at [http://www.wrap.org.uk/downloads/Recycling\\_LCA\\_Report\\_Sept\\_2006\\_-\\_Final.2a09510e.pdf](http://www.wrap.org.uk/downloads/Recycling_LCA_Report_Sept_2006_-_Final.2a09510e.pdf)

<sup>20</sup> See [http://defra.gov.uk/science/Project\\_Data/DocumentLibrary/WR0805/WR0805\\_4763\\_FRP.pdf](http://defra.gov.uk/science/Project_Data/DocumentLibrary/WR0805/WR0805_4763_FRP.pdf)

<sup>21</sup> See the Impact Assessment – Annex A to *WS2007*.

22. *WS2007* will enable England to meet its obligations under the various European directives on waste. Central to these EC directives is the objective of protecting human health and the environment. In particular:

- Article 4 of the Waste Framework Directive requires that “Member States shall take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular without:
  - risk to water, air, soil and plants and animals,
  - causing a nuisance through noise or odours,
  - adversely affecting the countryside or places of special interest.

23. *WS2007* puts explicit emphasis at the outset on the environmental rationale for action on waste management including:

- reducing greenhouse gases;
- improving resource efficiency;
- protecting public health;
- protecting ecosystems;
- safeguarding social amenity.<sup>22</sup>

24. It also restates the Government’s high-level objective for waste policy as set out in its Sustainable Development Strategy 2005, *Securing the Future*:

Protection of human health and the environment by producing less waste and by using it as a resource wherever possible. Through more sustainable waste management – reduction, re-use, recycling, composting and using waste as a source of energy – the Government aims to break the link between economic growth and the environmental impact of waste.

25. *WS2007* reaffirms the waste hierarchy as a good general guide to the relative environmental benefits of different waste management options<sup>23</sup> but acknowledges that there will be exceptions to this for particular materials and in particular circumstances – see further Section 4 below.

26. *WS2007* has a coherent set of objectives which together aim to move waste management up the waste hierarchy, delivering significant environmental benefits (see Chapter 1). The key objectives are to:

- decouple waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and re-use;
- meet and exceed the Landfill Directive diversion targets for biodegradable municipal waste in 2010, 2013 and 2020;
- increase diversion from landfill of non-municipal waste and secure better integration of treatment for municipal and non-municipal waste;

<sup>22</sup> See ‘The Challenge’ section in Chapter 1 of *WS2007*.

<sup>23</sup> The conclusions of the Environmental Report, see Section 4 below, were a factor in restating this general principle in *WS2007*.

- secure the investment in infrastructure needed to divert waste from landfill and for the management of hazardous waste; and
- get the most environmental benefit from that investment, through increased recycling of resources and recovery of energy from residual waste using a mix of technologies.

27. The overall objective of *WS2007* is, therefore, to set out a progressive agenda for reducing the impacts of waste management on the environment coherent with the Government's drive for sustainable development, while developing the economic benefit of using waste as a resource and meeting the requirements of European legislation.

### Environmental considerations in *WS2007*

28. Compared to Waste Strategy 2000, *WS2007* sets out new and more ambitious environmental goals for waste policies in England over both the medium and longer term to respond to current challenges, particularly climate change.<sup>24</sup> It aims to embed waste policies in the carbon and resource agendas.<sup>25</sup>

29. The more ambitious environmental goals are reflected in the following key policy areas in *WS2007*:

#### *Waste prevention*

- There is greater focus on waste prevention than in Waste Strategy 2000 to reflect its importance as a way of achieving environmental and economic benefits. A summary of the *WS2007* measures contributing to waste prevention is contained in Chapter 8 of the strategy and is summarised in Section 5 (Waste prevention and resource efficiency) below.

#### *Focusing action on key waste materials*

- *WS2007* focuses action on key waste materials with greatest scope for improving environmental and economic outcomes (paper and card, food/biowastes, aluminium, glass, plastics, wood and textiles). See Chapter 4 of *WS2007* and Section 5 (Increased focus on commercial and industrial waste) below. Some examples of relevant new policies are:
  - establishing with the paper industry an agreement with challenging targets to reduce paper waste and increase paper recycling incorporating and developing existing agreements for newspapers, magazines and direct mail but extended to office papers, free newspapers, catalogues and directories;
  - proposals (subject to further analysis) for higher packaging recycling targets beyond the 2008 European targets to increase recycling of plastics and aluminium; and
  - taking forward a programme of work to develop energy markets for waste wood by addressing informational and practical barriers to expansion.

#### *Increased levels of re-use, recycling and recovery*

- *WS2007* sets out new, higher national targets for re-use, recycling and composting of household waste. The 2010 and 2015 targets are higher than in Waste Strategy 2000 and there is a new, even higher target for 2020; and

<sup>24</sup> In some areas, *WS2007* sets out the direction of travel with proposals to be taken forward after further consideration and discussion with stakeholders. As these additional policies are agreed and implemented, the environmental benefits will increase further.

<sup>25</sup> See 'The New Strategy' section in the Executive Summary of *WS2007*.

- *WS2007* sets out a higher target for recovery of municipal waste in 2010, maintains the 2015 target and sets a new, even higher target for 2020;
- see further Section 4 below on these targets and targets for non-municipal waste.

30. Individual policies, the reasons for their formulation, and how their formulation has been influenced by the Environmental Report and the consultation responses are set out in more detail in Sections 4 and 5 below.

31. Defra modelling, updated to take account of recent data, estimates that *WS2007* will deliver a reduction in greenhouse gas emissions from waste management operations of between 16.5 and 21.5 million tonnes of carbon dioxide equivalent per year in 2020. This compares to current net savings of approximately 7.2 million tonnes of carbon dioxide equivalent in 2006/07.

## 4. Taking into account the Environmental Report

32. The information in the Environmental Report, and the views of consultation respondents on it, were taken fully into account in the review and in finalising *WS2007*. The section below describes key conclusions in the Environmental Report, views expressed in the consultation and Defra responses to those views. Individual comments on the Environmental Report and other wider consultation responses are considered inasmuch as they have implications for the Environmental Report and its conclusions.

33. The Environmental Report assessed strategic alternatives, presented as scenarios. Five scenarios were assessed, consisting of no change to existing waste management policy and four strategic alternatives to current policies which assessed the proposals in their operation at each of the principal levels of the waste hierarchy. The extent of the scenarios was chosen to reflect the full range of likely significant effects on the environment associated with the proposals contained in the consultation document. As stated in the Environmental Report,<sup>26</sup> the assessment was used as a tool to help formulate the appropriate mix in *WS2007* of waste management options across all levels of the waste hierarchy.

34. Detailed actions by which these scenarios could be delivered were assessed in the pRIA. The Impact Assessment provides a revision of this assessment, in light of consultation responses and updated with data available since publication of the consultation document. The detailed scenarios underpinning the Impact Assessment are set out therein.

35. The five scenarios were:

- no change to existing waste management policy;
- reduce the rate of arisings;
- increase the rate of recycling;
- increase the amount of energy generated from waste (Scenario 3A – enhanced rate, and Scenario 3B – further enhanced rate); and
- increase the amount of waste diverted from landfill.

36. The base case Scenario 0 demonstrated significant environmental gains as against the current position. Each of the scenarios delivered additional environmental benefits compared to the base case. Table A of the Environmental Report sets out a comparison of scenario performance, including the predicted greenhouse gas benefits.

37. As described further below, the environmental impact from waste identified as being most significant at present is the generation of greenhouse gases (particularly methane) caused primarily by the degradation of plant and animal waste in landfill. The Environmental Report concluded that waste regulation has been effective in mitigating other potentially acute environmental impacts to a satisfactory level, but that there was a continuing and pressing need to manage waste in a more sustainable manner. This was particularly important given the predicted increase in waste treatment infrastructure (e.g. to achieve higher levels of recycling) across all scenarios.

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<sup>26</sup> See the Non-technical Summary of the Environmental Report.

38. The Environmental Report also concluded that the waste hierarchy provides a sound environmental guide to help inform England's new waste strategy.<sup>27</sup> This conclusion has been incorporated in *WS2007*.<sup>28</sup> It was a vital factor in the formulation of the key *WS2007* objectives described above. The fundamental objective of *WS2007*, in essence, is to accelerate the continued moving of waste up the waste hierarchy.

39. The Environmental Report also concluded that scenarios and policies that focus on waste prevention (Scenario 1) offer greater overall benefit than the other scenarios in terms of the principal indicators used for the assessment. The Report stated that the new waste strategy should focus on increasing the efficiency of our use of resources, with policies developed within the overall framework of the sustainable consumption and production agenda. With this in mind, *WS2007* places increased emphasis (compared to Waste Strategy 2000) on waste prevention and resource efficiency. For further information see the part of this section on Waste Prevention below.

### Responses on the Environmental Report

40. Forty-five respondents provided comments on the Environmental Report.<sup>29</sup> Common themes raised by a number of respondents were:

- concern that **energy from waste**, including incineration, discourages and prevents recycling. This issue is addressed in Section 5 below;
- concern over the **environmental and health impacts of incinerators**. Respondents provided general views and opinions on these impacts and, in some cases, cited additional evidence (which has been reviewed by Defra). This issue is addressed in Section 5 below;
- agreement that **waste reduction is the best long-term option** for the environment. Several respondents wanted to see a zero waste strategy, with recognition from some that zero waste cannot be achieved overnight;
- several comments were provided on **indicators** to monitor the strategy. These are considered in Section 7 below.

<sup>27</sup> See the Non-Technical Summary and Conclusions of the Environmental Report.

<sup>28</sup> For more detail see the 'High Level Objectives' section in Chapter 1 of *WS2007*.

<sup>29</sup> In addition, the four statutory consultation bodies raised comments on the Environmental Report at the scoping stage – see paragraph 12 above. The Environment Agency also provided comments on the Consultation Document: these were taken into account and are included in all the comments assessed in Section 5 below.

41. Other common themes on specific issues and the corresponding Defra response are set out in Table K.1 below.

**Table K.1: Other responses on the Environmental Report and Defra responses**

| Comment  | Defra response   |
|--|--|
| Defra has proposed a strategy that does not offer the greatest environmental benefit, expressing the view that Scenario 0 (the worst performing scenario) was the one adopted in the consultation document   | Scenario 0 was the base case of no change to existing waste management policies. It is not therefore the scenario adopted in the consultation document or <i>WS2007</i>  |
| Defra should have modelled a scenario with a decrease in waste arisings  | A scenario showing reduced waste growth (Scenario 1, which pegged municipal solid waste (MSW) and commercial and industrial (C&I) waste arisings at 2002/03 levels) was considered sufficient to enable an assessment of waste reduction benefits. The Impact Assessment also includes a scenario of 0% growth in MSW, representing the possibility that waste growth will be decoupled from household and economic growth. The Environmental Report and the Impact Assessment have presented a broad range of feasible outcomes |
| Not all environmental benefits are included in the modelling of environmental benefits, but the ones measured have been used to compare cost and benefits and to then declare that a higher recycling level incurs too much cost   | The benefits analysis is based on the best available evidence and information. Climate change impacts are considered to be the most important ones at the strategic level  |
| Human health baseline data, i.e. mortality and morbidity rates in populations surrounding waste management options, should be included   | A health impacts review for Defra in 2004 <sup>30</sup> concluded that the probable impacts of emissions from waste management on human health are very small in comparison to other common hazards to health (as stated in Section 10, Appendix A to the Environmental Report – i.e. the human health section of the baseline assessment, which was accompanied by a thorough summary of the 2004 review)   |
| The report looks at specific areas but doesn't look at the issues holistically. In some instances, the acceptance of a local solution which has a higher level of environmental impact may be better than opting for a more environmental solution which is some distance away | The Environmental Report of this national strategy recognises that the proximity principle is an important factor for local waste planning authorities in deciding where to site waste treatment facilities (see e.g. Section 6.3 of the Environmental Report on cumulative and synergistic impacts)   |

<sup>30</sup> *Review of Environmental and Health Effects of Waste Management; Municipal Solid Waste and Similar Wastes*, published May 2004, written by Enviro Consulting Ltd and University of Birmingham with Risk and Policy Analysts Ltd, Open University and Maggie Thurgood for Defra. Available at <http://www.defra.gov.uk/environment/waste/research/health/>

**Table K.1: Other responses on the Environmental Report and Defra responses (continued)**

| Comment   | Defra response  |
|---|---|
| The environmental implications arising at individual sites where facilities may be located have not been included   | The Environmental Report is an assessment of a national strategy. It assesses the impacts of different waste management treatments but it is not its role to assess environmental implications at individual site level. It states that reductions in local environmental impacts are best addressed by the licensing regime, effective site management and through the planning process (including through Environmental Impact Assessment)  |
| The Environmental Report contained no assessment of the achievability of proposed reductions in the percentage of commercial and industrial waste landfilled  | It is not the role of the Environmental Report to assess how policy proposals should be delivered. The role of the Environmental Report is to assess likely significant effects on the environment. The pRIA included what are considered to be feasible reductions   |
| Reference was made to the study by WRAP published in May 2006 (therefore post-publication of the consultation document) on the Environmental Benefits of Recycling with emphasis on the need for the Government to take this into account | The WRAP report was taken into account (alongside the findings of other research published subsequent to the Consultation Document) in formulation of <i>WS2007</i> . <sup>31</sup> It confirms the conclusion of the Environmental Report that the waste hierarchy generally provides a sound environmental guide for policy makers. The WRAP report concluded that recycling is generally preferable to incineration and overwhelmingly preferable to landfill. Results varied somewhat by material, and key assumptions that were critical to results were the type of energy used for the manufacture of primary materials, the type of energy used for the manufacture of secondary products from recycled materials and the type of recycling process applied |
| One respondent considered that insufficient weight had been given to the environmental benefits of anaerobic digestion  | This comment, along with many others in response to the consultation document, was a factor in the Government's decision to highlight more prominently in <i>WS2007</i> the important role that anaerobic digestion can play for some biowastes. See further Section 5 below  |

<sup>31</sup> See Chapter 1 – objectives of *WS2007*. See footnote 19 above for the reference to the report.

## Wider Consultation Responses – levels of the waste hierarchy

### (A) Waste prevention

42. The Environmental Report concluded that the new waste strategy should focus on increasing the efficiency of our use of resources, with policies developed within the overall framework of the sustainable consumption and production agenda. It found that the greatest environmental benefits were to be gained from waste prevention – preventing waste in the first place.

43. Chapter 4 of the consultation document set out waste prevention proposals and the new direction proposed for the strategy. These are detailed in Section 5 below.

44. There was strong agreement from respondents for more emphasis **on waste prevention and minimisation activities**, although the **challenge** this represents was recognised. Main suggestions concerned the better use of regulation, incentives and penalties, and in particular better use of producer responsibility. For details of the consultation responses on this theme see Section 6 below.

45. *WS2007* sets a clear direction for achieving a reduction in waste generated, both municipal and C&I. This will be achieved partly through policies aimed directly at waste prevention, such as the Courtauld Commitment under which retailers commit to reducing packaging and food waste, and indirectly through policies designed to influence behaviour at other stages of the life cycle. For details of these policies, i.e. how *WS2007* will help to prevent waste, see Section 5 below.

46. The Government recognises that waste prevention is a challenge. Success will not happen overnight but *WS2007* sets out a stronger direction. This greater focus will be encouraged through a new and aspirational national target for reducing the average amount of household waste not re-used, recycled or composted.

|   | 2005            | 2010            | 2015            | 2020            |
|---|-----------------|-----------------|-----------------|-----------------|
| <b>Household waste per head after re-use, recycling and composting (percentage reduction from 450kg per head in 2000)</b> | 370 kg<br>(18%) | 310 kg<br>(32%) | 270 kg<br>(40%) | 225 kg<br>(50%) |

### (B) Recycling and recovery of municipal and C&I waste – relative balance within hierarchy

#### *The consultation proposals*

47. Waste Strategy 2000 set targets for 2005, 2010 and 2015 for the recycling and composting of household waste (25%, 30% and 33%) and for recovery of municipal waste (40%, 45% and 67%). The consultation document consulted on higher household recycling and composting targets for 2010 and 2015, and a new, even higher target for 2020.

48. It also consulted on higher municipal waste recovery targets: with ‘recovery’ including recycling, composting and energy recovery. It did not set a target for energy from waste (EfW) specifically. It stated that “EfW in England is not likely to match the levels which are common across Europe for the foreseeable future, and we do not expect it to expand quickly. Our economic modelling indicated that it was not likely to account for more than about 27% of the municipal waste stream by 2020 nationally, compared to 9% now, taking account of other drivers including our assumed higher

recycling targets".<sup>32</sup> The reassessment set out in the final Impact Assessment is referred to below. This represents much less energy recovery than was implied in the targets set out in Waste Strategy 2000.

49. Key relevant themes from the consultation responses are set out below.

### *(a) Recycling of household waste*

- Many respondents argued for even higher recycling targets, particularly environmental non-government organisations and third sector groups (including the great majority of standard and form letters) and some local authorities, and particularly in respect of the 2015 and 2020 targets. There was little consensus on how high targets should be, how they should be designed and who they should fall on.
- A lesser number of respondents supported the targets as proposed, while noting that significant investment and infrastructure development will be needed to meet them. Others, primarily local authorities, expressed concerns that the proposed targets were too ambitious.
- There were some comments challenging the usefulness of national targets at all. The reasons varied but included: a sense that local variations mean that national targets are not always appropriate; that recycling targets deflect from the need for more focus on waste minimisation; and that they can encourage 'bad' recycling such as exports.
- Many respondents commented on the need for waste reduction targets either instead of, or as well as, recycling and composting targets. Others suggested redefining targets, for example suggesting targets around landfill diversion rather than recycling and composting; setting two levels of 'minimum' and 'aspirational'; and targets by volume not weight.

### *(b) Municipal waste recovery targets*

- Roughly equal numbers of respondents supported and challenged these municipal waste recovery targets.
- A smaller number of respondents expressed concern that recovery targets will lead to a preference for EfW over recycling and composting, or that incineration technology will take precedence over other forms of EfW such as anaerobic digestion.
- Local authorities, in particular, supported the proposal because it allowed the integration of household with commercial waste streams, which tend to be more homogenous and easier to recycle. Their main proviso was that local authorities should be free to decide on the most appropriate local solutions, and that responsibilities and funding should be clearly identified.
- Some respondents, especially from local authorities but also from the waste management industry, felt that the Landfill Allowance Trading Scheme (LATS) was a more effective driver than household waste recovery targets, while some responses observed that local authorities could not meet LATS obligations without some form of EfW.

### *(c) Level of energy from waste*

- Over 350 participants responded specifically on the proposal to encourage the diversion of wastes from landfill to EfW, and over 300 responded on the proposed municipal waste recovery target. In addition, nearly 3,500 standard and form letters and e-mails were received which opposed diversion of wastes from landfill to energy recovery (in particular incineration).

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<sup>32</sup> See p.62 of the consultation document.

- While this large number of standard and form letters opposed EfW, the majority of non-standard responses took the view that EfW has a realistic place in the waste hierarchy, recovering energy from materials that cannot be recycled. Most local authority responses were strongly supportive, as were most of the larger waste management companies. The majority of those who expressed support did so with the caveat that it should not have a negative impact on recycling targets.
- Most respondents agreed that the prime focus should be on waste prevention, re-use and recycling/composting before energy from waste.
- Those opposed to incineration argued it was not desirable given perceived adverse health and environmental impacts, and the risk that it could displace recycling. For the Government's response to these arguments see further Section 5 below.
- Others argued that higher levels of EfW were essential (and urgent) to meet Landfill Directive requirements, which, it was felt, could not be met by recycling alone, and pointed to this being a safe and environmentally beneficial waste management route for residual waste.
- Both supporters and opponents of EfW wanted the most up-to-date information on the various technologies to be made public to enable an open debate. This would need to cover issues such as the net energy derived, the carbon dioxide footprint and the health impacts of the various technologies, to allow comparisons with other reprocessing/disposal options and so more informed choices to be made.

### *WS2007 – higher levels of re-use, recycling and recovery*

50. **Confirmation of the proposed household waste re-use and recycling targets** – broadly, the consultation responses supported the suggested household recycling targets or argued for higher targets. The Government has reconsidered and rejected the case for even higher household waste recycling targets as it is not confident that, in the current context, even higher targets would be feasible and/or cost-effective with regard to considerations such as putting additional infrastructure in place in sufficient time. The Government remains of the view that the targets set out in the consultation document, and repeated in *WS2007*, are challenging enough (see further the assessment of impacts, costs and benefits in the pRIA and the final Impact Assessment).

51. It has therefore been decided to include in *WS2007*<sup>33</sup> the household recycling and composting targets as proposed in the consultation document (now including re-use, as suggested by some respondents). The targets maintain a more ambitious upward trajectory and *WS2007* commits to a target of *at least* these levels – and the Government will revisit the 2015 and 2020 targets in the light of progress achieved in 2010 to consider whether more ambitious targets for the later years would be feasible.

52. **Confirmation of level of energy from waste as appropriate** – the Government considered whether the level of energy recovery set out in *WS2007* is appropriate given other reasonable alternatives. The Government's recovery targets and mechanisms to drive this remain justified. In particular, *WS2007* makes clear that energy should be recovered only from residual waste that cannot viably be recycled, as well as certain biomass wastes such as wood and food waste (via anaerobic digestion) where there are clear carbon benefits of doing so. Chapter 5 of *WS2007* explains that, in many other EU Member States where very high rates of recycling and EfW are able to co-exist, a vigorous EfW policy is compatible with high recycling rates.

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<sup>33</sup> See Chapter 8 of *WS2007*.

53. The Government does not consider that the concerns expressed by respondents in relation to adverse health and other environmental impacts are justified, for the reasons set out in some detail in Section 5 below. As regards the perceived risk that EfW contracts can 'lock out' recycling, the Government considers (and *WS2007* emphasises) that it is important, and feasible, to plan and build suitably flexible facilities, for example, in terms of modular-build and/or contracts that do not require fixed volumes of waste.

54. ***WS2007* therefore sets out the municipal waste recovery target as proposed in the consultation document.** The modelling contained in the Impact Assessment projects a slightly lower estimate of EfW at 25%, compared with the maximum of 27% set out in the consultation document.<sup>34</sup> This is a projection: *WS2007* does not set a target for EfW alone but does state that energy from waste is expected to account for 25% of municipal waste compared to 10% today. The Government accepts, as was emphasised in the consultation document, that EfW should be set in a context of both greater emphasis on waste prevention and more ambitious recycling targets. The new aspirational target to reduce the average amount of household waste not re-used, recycled or composted should help to address the concerns of some respondents.

55. The Government remains of the view set out in the consultation document that there is insufficient evidence and information on which to base a recycling target for all waste or for all commercial and industrial waste. As the evidence base improves, the Government will keep this under review.

### **(C) Further reducing waste to landfill and reducing the environmental impact of landfilled waste**

56. **The Environmental Report** – the environmental baseline assessment, carried out as a first step in the SEA process, identified the generation of greenhouse gases (particularly methane) caused primarily by the degradation of plant and animal waste disposed to landfill as the most significant environmental impact on a national scale from England's current waste and its management.<sup>35</sup> The scenarios assessed included different reductions in rates of landfilling of municipal and C&I waste. Each of these scenarios envisaged some reduction in waste landfilled but also an ongoing requirement for new landfill capacity.

57. **Upward revisions of estimates of methane emission from landfill** – since publication of the Consultation Document, methodological changes have led to upward revisions in the UK Greenhouse Gas inventory of the estimated methane emissions from methane from landfills. This has further increased the importance of reducing methane emissions from landfill and strengthens this conclusion of the Environmental Report.

#### *The consultation proposals*

58. A key objective of the consultation document and many of the policies proposed in it was to continue reducing waste sent to landfill in England. The consultation document made clear that the continuing implementation of the Landfill Directive will bring increasing restrictions on the landfilling of certain wastes. It consulted on the option of placing additional restrictions on the use of landfill in the longer term,<sup>36</sup> perhaps as part of developing pre-treatment requirements for landfill. The Government's view in the consultation document was that it was too early to take such steps now, but Question 28 asked whether landfill should eventually be the home of last resort taking only non-biodegradable residues from waste treatment.

<sup>34</sup> See Part A of Appendix 1 (Future Waste Scenarios) to the Impact Assessment (Annex A).

<sup>35</sup> See Appendix A of the Environmental Report.

<sup>36</sup> See p.64 of the consultation document. Examples were cited of restrictions in other European countries.

59. The consultation document also proposed that England's national targets for biodegradable municipal waste (BMW) set under the framework of the Landfill Directive remain unchanged. It proposed future landfill targets for C&I waste for 2010, 2015 and 2020 with landfilling as a percentage of total C&I waste declining to 37%, 36% and 35% respectively by those dates.<sup>37</sup>

### *Consultation responses*

60. Key consultation responses included the following.

- The great majority of respondents agreed that landfill should eventually be the home of last resort, taking only non-biodegradable residues from waste treatment. There was some concern about how long it will take to achieve this and the investment in infrastructure that will be needed, both for municipal and C&I waste.
- However, many respondents recognised that landfill would be needed for the foreseeable future, that there would continue to be some wastes that would need to be disposed of to landfill, or that other technologies or markets needed to be further developed first.
- Environmental groups and the third sector generally supported the aspiration of 'phasing out' landfill as part of a zero waste target.
- There was much support for the principle of targets for the landfilling of C&I waste, particularly from local authorities, but also from environmental and third sector organisations and some waste management companies. The reasons given were the high amounts of waste arising from this sector (particularly recent growth in commercial waste), and the clear message it would give. Other specific comments were:
  - many respondents felt the proposed levels were too low
  - but some felt that the targets were too ambitious
  - and others challenged the value of targets at all and queried who would deliver the targets. The need for continued increases in landfill tax was raised by some respondents
  - there was a need to be clear on the types of waste to landfill which were to be avoided. Landfill might be appropriate for certain wastes
  - some respondents pointed out the importance of tackling fly-tipping at the same time.

### *WS2007 – reduction of waste from landfill*

61. A key theme of *WS2007* is that continued diversion of waste – municipal and C&I – is a priority, and a clear direction is given for the future of landfill. *WS2007* states that 'reliance on landfill is already reducing and this should become the home of last resort for waste. The Government will continue to pursue the reduction of the use of landfill while recognising that landfill may continue to have a place for disposal of some wastes, such as some hazardous wastes and as a means of restoring exhausted minerals workings'.<sup>38</sup>

62. As stated above, *WS2007*'s key objectives include:

- to meet and exceed the Landfill Directive diversion targets for BMW in 2010, 2013 and 2020;
- to increase diversion from landfill of non-municipal waste; and

<sup>37</sup> See p.24 of the consultation document.

<sup>38</sup> See Chapter 3 of *WS2007*.

- to secure the investment in infrastructure needed to divert waste from landfill and get the most environmental benefit from that investment.

63. Implementation of the Landfill Directive has already led to reductions in waste to landfill, and its associated environmental impact. The requirements for re-permitting of landfill sites under the Pollution Prevention and Control regime have led to a significant drop in the number of operational sites. The introduction of Waste Acceptance Criteria for hazardous wastes is driving the identification of alternative recovery and disposal routes. Other policies introduced in recent years, notably the LATS, are proving effective. *WS2007* sets out a clear direction for the future including:

- the LATS will continue to help drive down the amount of BMW going to landfill;
- from October 2007, the requirement for the pre-treatment of non-hazardous waste to landfill and the ban on the landfilling of liquid waste will bring further environmental benefits, on top of those already achieved from the implementation of Landfill Directive requirements to date; and
- *WS2007* announces the Government's intention, subject to further analysis, to consult on whether the introduction of further restrictions on the landfilling of biodegradable wastes and recyclable materials would make an effective contribution to meeting objectives such as reducing greenhouse gas emissions and increasing resource efficiency.<sup>39</sup> Government has considered the views of respondents here. *WS2007* recognises that a number of other EU Member States have found that imposing legal restrictions on the types of waste that can be landfilled has encouraged higher rates of recycling and recovery.

64. In relation to the proposed targets for reduction of landfilling of C&I waste, *WS2007* states that, on the basis of the policies set out therein, the Government expects to see levels of commercial and industrial waste landfilled falling by 20% by 2010 compared to 2004. The Government will shortly be setting a new national target for the reduction of commercial and industrial waste going to landfill.<sup>40</sup> Following the announcement in Budget 2007, Defra has remodelled the predicted impact of the landfill tax and other drivers. *WS2007* refers to an expectation to 2010 at this stage because the Budget announced £8/tonne increases from April 2008 up until at least 2010/11. The Government will monitor progress towards the new target to be set shortly, collecting further evidence on the effect of policy measures and, at a later stage, will consider setting targets for later years in the light of this progress.

65. The continued increases in the landfill tax (see Section 5 Greater use of economic instruments below) will help to divert waste from landfill. *WS2007* recognises that landfill may continue to have a place for some wastes, such as some hazardous wastes (hazardous wastes going to landfill now require pre-treatment).<sup>41</sup> The forthcoming requirement for pre-treatment of non-hazardous waste could result in a significant reduction in the amount of waste being landfilled where it is used alongside other measures. Finally, Section 5 – Illegal Waste Activity below sets out how *WS2007* addresses the need to ensure that fly-tipping is minimised.<sup>42</sup>

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<sup>39</sup> See Chapter 3 of *WS2007*.

<sup>40</sup> See Chapter 8 of *WS2007*.

<sup>41</sup> See The Future of Landfill in Chapter 3 of *WS2007*.

<sup>42</sup> Also, the Government is proposing, for discussion with the construction industry and other stakeholders, a target for the construction industry to halve the amount of construction, demolition and excavation wastes going to landfill by 2012 as a result of waste reduction, re-use and recycling. See Chapter 8 of *WS2007*.

### General environmental impacts, including pollution of air, land and water

66. Notwithstanding the continuing and pressing need to manage waste in England in a more sustainable manner and to reduce the impact on the environment, the overall conclusion from the baseline environmental assessment was that, when viewed nationally, waste regulation has been effective in mitigating potentially acute effects to a satisfactory level. Nevertheless, it was recognised that the nature of materials handled in waste management means that pollution incidents can have important local consequences.

67. The Environmental Report found that the absolute number of serious incidents attributed to waste management has fallen since 2000. However, it also concluded that, other things being equal, the number of serious incidents to land and water can be expected to increase, proportionate to the level of waste management infrastructure increase predicted in its assessment. Of particular relevance was the number of operational and closed landfills, but odour, noise, air and water impact can arise with all waste handling infrastructure.

68. *WS2007* sets out a range of measures to deliver better waste regulation – these are described further in Chapter 3 of *WS2007* and in Section 5 below. Of particular relevance in this context are:

- a commitment to ensuring the complete closure of all landfills that will not meet the Landfill Directive requirements. This process is underway now and closure plans agreed with operators should ensure this process is completed by 2009. In addition, the Government and the Environment Agency are reviewing regulation of those landfills (about 1,500) that closed before the Landfill Directive came into force and are regulated under waste management licences. The Government is also committed to ensuring the environmental impact of closed sites is minimised in the long term;<sup>43</sup>
- the Government will continue to pursue policies which lead to reductions in hazardous waste arisings. The Environment Agency sponsored HazRed scheme is encouraging small and medium-sized enterprises (SMEs) in six key sectors to minimise and manage hazardous waste. In addition to the efforts to reduce the amount of hazardous waste, as well as ensuring its safe treatment and disposal, the Government is seeking to find ways to recover material and energy resources from hazardous waste; and
- the Government will work with the Environment Agency, local authorities and other key groups like the police and business representatives to develop and implement an action plan to tackle illegal waste activity (see further Section 5 below).

69. Environmental effects at the regional, local or site level were not assessed in the Environmental Report. It did recognise that these can potentially be significant and are best addressed through the planning and licensing regime. Planning Policy Statement 10<sup>44</sup> (which sets out the Government's planning policies for waste management) states that a sustainability appraisal (incorporating SEA) should be applied where relevant by regional planning bodies and all planning authorities in preparing planning strategies. In considering planning applications for waste management facilities, waste planning authorities should consider the likely impact on the local environment.

<sup>43</sup> This can be achieved through assessment of the residual risks they pose and prioritisation of sites needing further action such as increased monitoring or additional pollution control measures during the closure period, particularly to protect groundwater and reduce the emission of landfill gas.

<sup>44</sup> See <http://www.communities.gov.uk/index.asp?id=1143834>

### 5. Taking into account the consultation responses

69. A total of 4,017 responses were received. Just over 3,400 of these came from individuals, action and environmental groups in the form of standard letters and e-mails. The summary report of consultation responses,<sup>45</sup> prepared with assistance from Dialogue by Design, summarises all the responses and describes the main issues raised.

70. Overall, there was support for the approach set out in the consultation document. There was broad support from stakeholders for the main vision and general direction for the new strategy, with main concerns centred around how the strategy would be delivered and whether the draft strategy contained the right balance of options in line with the waste hierarchy. England was felt to be making some progress at tackling waste and to have some of the right drivers in place (such as the LATS) but could be aiming to do more.

71. The majority of the standard letters and e-mails expressed concern that EfW options should not detract from options higher up the waste hierarchy, with particular focus on waste prevention, higher recycling targets and greater use of fiscal instruments. The Government welcomes the sizeable and helpful response.

72. This Statement sets out key themes and messages from the consultation responses which are considered to be sufficiently material given:

- (a) the national and high-level context of the Strategy;
- (b) its likely, significant environmental effects; and
- (c) an assessment of the relative importance attached to them by stakeholders, largely by reference to the number of responses received.

73. Eight key themes have been selected, to be read in conjunction with the key waste hierarchy messages which emerged from the Environmental Report (see Section 4 above).<sup>46</sup> These are:

- waste prevention and resource efficiency – their importance and how to improve performance;
- ways to increase waste recycling and recovery;
- the role of EfW, and the relative merits of different EfW technologies;
- greater use of economic instruments to increase waste reduction, re-use, recycling, recovery and diversion from landfill;
- increased focus on C&I waste;
- illegal waste activity;
- simplification and clarification of waste regulation; and
- the importance of implementation and delivery arrangements.

<sup>45</sup> Available at <http://www.defra.gov.uk/environment/waste/strategy>

<sup>46</sup> The responses to the question relating to the Environmental Report are considered in Section 4 above. The responses to the question relating to the partial Regulatory Impact Assessment are considered in the final Impact Assessment – Annex A to *WS2007*.

### Waste prevention and resource efficiency

#### Consultation proposals

74. The consultation document set out waste prevention proposals in the context of sustainable consumption and production. The proposals focused on avoiding or reducing the quantity and/or hazardousness of waste generated at source, within the C&I sector and the domestic context. It proposed action on:

- prioritising products where waste impacts need to be tackled;
- extending product stewardship by producers and retailers and reducing waste impacts through eco-design;
- promoting re-use and remanufacture with support from the Business Resource Efficiency and Waste (BREW) programme;
- further engaging businesses (particularly SMEs) to stimulate resource efficiency through advice services; and
- providing advice to the public on environmental impacts of products.<sup>47</sup>

75. Wide-ranging questions were asked on waste prevention, encompassing priority materials and products, product design, re-use and re-manufacture, stimulating businesses to reduce waste, and SMEs in particular, developing a sectoral approach to waste prevention and how best to engage consumers to reduce waste. For further details of responses see Questions 14 to 22 of the Summary of Consultation Responses.

#### Consultation responses

76. There was strong support for all waste prevention measures, with some respondents emphasising the need to target action on materials, products and priority sectors.<sup>48</sup>

77. Responses on waste prevention in the consultation included:

- *wide agreement for more emphasis on waste prevention and minimisation activities*, although the *challenge* this represents was recognised. Main suggestions were around the better use of regulation, incentives and penalties, and in particular better use of producer responsibility. There was strong support for taking a life-cycle approach;
- some respondents felt that the consultation document and its vision could have been *more ambitious*, including with regard to waste prevention. Some stated that there needs to be more integration of sustainable production and consumption into the strategy;
- the expansion of *producer responsibility* was seen as a key tool in addressing waste minimisation and prevention issues. Many saw it as a useful tool which, if implemented in a strong manner, would encourage not only a reduction in waste but also an increase in recycling;
- there was wide recognition of the valuable work already carried out in this area by programmes including *BREW*, *Envirowise*, *the National Industrial Symbiosis Programme (NISP)* and *WRAP*. Voluntary agreements such as the Courtauld Commitment are also expected to deliver reductions in this sector;

<sup>47</sup> For further details see Chapter 4 of the consultation document.

<sup>48</sup> See the summary of Consultation responses, in particular the responses to Questions 6 and 14.

- there was strong support for the *sectoral approach* set out in the consultation document as enabling a more targeted and focused approach. Some supported sectoral waste prevention targets but others did not;
- *construction wastes, food wastes and packaging* (in particular plastic packaging and food packaging), were seen as priority areas to address. But a very wide range of views on priority products (and to a lesser extent materials) was received;
- *hazardous wastes were also viewed as priorities for waste reduction, as well as Waste Electronic and Electrical Equipment (WEEE)* with concerns expressed by some respondents about the delay in implementing the UK WEEE regulations;
- stronger guidance on *product design* was also suggested, to make products either more durable, more repairable, less wasteful or more recyclable. Many respondents wished to see products designed for increased durability, recyclability and easier disassembly/dismantling. Some respondents put forward disposable, single-use products as priorities for action to reduce waste;
- more effort was needed on *education, information and awareness raising*, for the general public (as consumers) and businesses (e.g. the design profession, SMEs). Schemes provided via Envirowise, WRAP and other BREW-funded work were regarded as positive;
- many felt it was time to move away from using economic instruments targeted at the end of pipe and instead target resource efficiency through taxation on materials/products; and
- many of the responses on product design focused on packaging design as a priority area. There was general support for product design for durability and for dismantling and disassembly to facilitate re-use, re-manufacture and recycling.

### *How WS2007 has taken responses into account*

78. The Executive Summary of *WS2007* states that the main elements of the waste strategy are to provide stronger incentives on businesses, local authorities and individuals to reduce waste and to encourage much greater consideration of waste as a resource, including increased emphasis on re-use. It also describes the first objective as being to decouple waste economic growth (in all sectors) and put more emphasis on waste prevention and re-use.

79. Policies contained in the strategy which will help to prevent waste include:

- the Landfill Allowance Trading Scheme;
- performance indicators for councils;
- landfill tax escalator;
- restrictions on landfill;
- material or sector-based voluntary agreements;
- implementation of EU sectoral directives;
- Government product procurement targets;
- proposals, subject to further analysis, for new packaging waste targets after 2008; and

- guidance and awareness measures, including through more visible recycling facilities in public places, activities with schools and improved use of the third sector.<sup>49</sup>

80. Other specific examples to illustrate this commitment are:

- the extensions of WRAP's Courtauld Commitment to non-food retailers to help deliver greater reductions in waste such as packaging and food;
- making greater use of producer responsibility. For example, the Government intends to establish with the paper industry an agreement with challenging targets to reduce waste, as well as to increase paper recycling. This will incorporate and develop existing agreements for newspapers, magazines and direct mail but extended to office papers, free newspapers, catalogues and directories;
- the Government is consulting on removing the ban on local authorities using financial incentives for waste prevention and recycling. Subject to the outcome of the consultation, the Government proposes to legislate to remove the ban on local authorities introducing such schemes at an early legislative opportunity. At present, authorities are prohibited from charging residents according to the amount they throw away (with some exceptions, e.g. for bulky waste and green waste). Evidence from overseas suggests that incentivising householders financially to reduce the amount of non-recycled waste they throw away can be a powerful tool in reducing overall waste quantities, boosting recycling and reducing costs.
- the establishment of a new products and materials unit to identify and catalyse actions across the supply chain, to improve the environmental performance of products across their life cycle. Defra is bringing together the evidence about environmental impacts across the life cycle and will identify actions and target solutions where they will be most effective. Defra will publish a progress report on delivery in Spring 2008 which will cover products in product groupings which account for a high percentage of environmental impact. Ten 'product roadmaps' are already in development;
- the Government's recent consultation on new regulations which will implement the European Directive establishing a framework for the setting of ecodesign requirements for energy-using products. The ecodesign requirements to be developed in due course will consider waste impacts as part of the wider life-cycle assessment of energy-using products resulting from their manufacture (processes and materials used), usage (energy/water consumption and emissions) and disposal (waste generation);
- the continuation of work is under way to develop evidence on the environmental impact of products and materials across the life cycle. *WS2007* puts forward a set of immediate actions on paper and card, food/biowastes, aluminium, glass, plastics, wood and textiles. Some of these include waste reduction. Further work is in hand, in consultation with delivery partners and other stakeholders, to explore how greater reduction and recovery of these materials might be achieved. This will be informed by developing evidence on life-cycle impacts;
- the recognition that local authorities have an important role to play in assisting their residents to reduce waste (as well as encouraging sorting of waste for recycling, re-use, home composting and other forms of home treatment of waste). A number are making use of the National Resource and Waste Forum toolkit, which provides advice to local authorities on reducing waste collected and helping householders to reduce waste needing collection. Defra has funded 50 local authority pilot projects aimed at boosting recycling and minimising waste.

<sup>49</sup> For more details on how these policies can contribute to waste prevention see the relevant Table in Chapter 8 of *WS2007*.

WRAP has updated the toolkit as a web-based tool. The Government encourages local authorities to use this in developing their local strategies;

- the launch of a zero waste places initiative in Autumn 2007 with the aim of inviting a number of places (including cities, towns and rural communities) to become exemplars of good environmental practice on all waste. Funding will be made available to support the selected places in their endeavours and participating places would be asked to fulfil a pathfinder role in identifying the barriers and illustrating solutions to enable others to adopt the most effective approach; and
- continued Government support for a range of initiatives to help develop re-use and re-manufacture.<sup>50</sup> Much of the work being done by NISP, Envirowise and the Market Transformation programme in particular is aimed at re-use.

81. As stated above, the new aspirational target for reducing the average amount of household waste not re-used, recycled or composted will also provide a greater focus on prevention of household waste.

82. There was strong consultation support for more emphasis on product eco-design initiatives with, for example, many respondents wishing to see products designed for increased durability and recyclability and greater ease of disassembly. The Government is taking these views into account in its development of new products and materials work. As stated above, a new products and materials unit is being established within Defra to identify and catalyse actions across the supply chain and to improve the environmental performance of products across their life cycle.<sup>51</sup> Product policy takes account of all impacts across the whole life cycle of a product or service, including greenhouse gas emissions, waste and resource use.

### Ways to increase waste recycling and composting

83. Section 4 above deals with the levels of recycling and recovery, including targets. This section deals with the means by which increased recycling and recovery might be achieved. It first covers recycling and composting, then energy from waste.

#### *Consultation proposals*

84. The consultation document asked a series of questions on a range of proposals to increase recycling and composting. These included: what more the Government could do to accelerate the development of markets for recycled materials; whether it should set future statutory performance standards for local authorities related to recycling and composting household waste; ways to improve the recycling and recovery of C&I waste; ways to improve the recycling and recovery of construction and demolition waste; the practical and cost barriers to recycling by SMEs; and greater requirements on local authorities as wider recycling service providers for business waste. See further Chapters 5 and 6 of the consultation document.

#### *Consultation responses*

85. Key themes included the following:

- many respondents cited a *lack of infrastructure* as hindering high recycling and recovery of waste with investment needed to develop more facilities. This came across as a theme in the responses to several questions;

<sup>50</sup> See Chapter 4 of *WS2007* on Product and materials re-use.

<sup>51</sup> The Government has already consulted on new regulations which will implement the European Directive establishing a framework for the setting of ecodesign requirements for energy-using products. The ecodesign requirements to be developed in due course will consider waste impacts as part of the wider life-cycle assessment of energy-using products. See Chapter 4 of *WS2007*.

- other suggestions to increase recycling and recovery of C&I waste included *fiscal incentives and penalties* such as a raw materials levy, statutory targets, *increasing the costs of landfill* and other forms of disposal, more information, guidance and education;
- there was strong support for the *sectoral approach*, such as through extending stewardship or *responsibility of producers or retailers*. Many participants discussed the need for placing producer responsibility within a regulatory framework, often citing the WEEE directive as an example. Of those participants who expressed a preference for voluntary agreements, there are caveats made, such as the threat of regulation if voluntary agreements do not deliver, and ensuring they are audited and monitored;
- some respondents said that greater use of *recyclate* could be encouraged by means of *clearer quality standards and protocols*. Various respondents suggested that public sector procurement requirements should specify high levels of recycled materials in procured products to drive the development of this market. Respondents were broadly in favour of ongoing Government support of WRAP in its role of developing markets for recycled materials;
- in terms of the balance between the development and encouragement of domestic capacity for recycling and the reliance on overseas markets, respondents favoured the development and encouragement of domestic capacity. Reasons given included the proximity principle, the need to be self-sufficient, the fluctuating demands and uncertainties inherent in serving overseas markets and the need to avoid undermining the domestic market built up to date. Others, however, recognised the need for export markets for certain types of waste and some considered that the market would set the appropriate balance;
- the idea of *integrating the C&I waste streams with the municipal waste stream* in order to offer economies of scale in the provision of recycling and recovery facilities. It was suggested that bringing commercial and industrial waste within the ambit of local authorities would, in particular, help to address the problems of the waste created by SMEs which is excluded from municipal collection but is often too little to be worth a private contractor collecting. This is addressed further under Increased focus on commercial and industrial waste below;
- some respondents felt there could be a requirement placed on the waste industry to offer recycling services in a similar way to that in which the Household Waste Recycling Act created a duty for local authorities with regard to household waste. It was thought that this would create a level playing field and a strategic role for local authorities to convene stakeholders and facilitate local business waste strategies. Others picked up on opportunities for SMEs regarding collaboration and the provision of shared facilities, such as waste exchanges, and recycling parks and clubs with support from BREW-funded programmes such as NISP;
- many respondents wished to see improvements to procedures of waste procurement. A wide range of suggestions were received. One theme raised was that PFI contracts tended to favour large contractors, excluding SMEs and third sector groups;
- variable household charging was seen as a strong tool to encourage recycling and waste reduction by households. Many felt that such financial incentives were imperative; and
- composting and anaerobic digestion were felt to be under-represented in the consultation document. The responses relating to anaerobic digestion are covered under The role of energy from waste below.

### *How WS2007 has taken responses into account*

86. The huge variety of responses, covering many themes and with many suggestions for action, were a welcome input into the formulation of *WS2007*. *WS2007* sets out a clear direction for increased recycling and recovery of C&I and household waste in terms of stimulating development of infrastructure, encouragement of domestic capacity for recycling, further development of markets for recycled and recovered materials and improved integration of municipal and business waste management. The increased targets for recycling and recovery of household waste signal the direction that the Government has set out. For a description of the increased focus in *WS2007* on C&I waste see under Increased focus on commercial and industrial waste below.

87. Key new policies are:

- the establishment of the Waste Infrastructure Delivery Programme (WIDP) as a new programme within Defra. It aims to establish and monitor the shortfall in residual waste treatment capacity needed in order for England to meet its share of the UK's Landfill Directive targets, and it will provide local authorities (as the main protagonists responsible for planning and procuring that capacity) with high quality, comprehensive support, including financial help through PFI credits (where appropriate), grants and consultancy advice. The establishment of WIDP is, in part, a response to reports from the Office of Government Commerce, the Office of Fair Trading and the National Audit Office and the recommendations they made. For a fuller description of WIDP see Chapter 6 of *WS2007*;
- continued Government support for the market development work of WRAP.<sup>52</sup> WRAP will create a centre of expertise on export markets for recycled materials. This will allow business and policy decisions to be made on the basis of much better information. It will also help to encourage the right balance between the development and encouragement of domestic capacity for recycling and the reliance on overseas markets;
- Environment Agency and WRAP work with industry sectors to establish domestic waste protocols to determine the point at which certain categories of waste can be deemed to have been fully recovered and cease to be waste. This will help to provide greater clarity and certainty for industry and regulators alike and assist greater recycling and recovery of these materials;
- increased application of producer responsibility – see further under Increased focus on commercial and industrial waste below;
- improved integration of municipal and business waste management – see Increased focus on commercial and industrial waste below;
- the national targets for recycling and recovery of municipal waste, as described above. In April 2007 the Government set performance standards on recycling and composting for all local authorities for the year 2007/08 (representing the final set of Best Value Performance Indicators for waste) setting a minimum performance standard of 20% across the country;
- as part of the review of LATS, to take place later this year, the development of a reporting and monitoring procedure to allow local authorities to fully account for diversion of biowastes from landfill by supported home composting schemes.<sup>53</sup> WRAP will continue to provide advice to local authorities on home composting;

<sup>52</sup> See chapter 5 of *WS2007*.

<sup>53</sup> See chapter 2 of *WS2007*.

- increased landfill costs due in particular to the landfill tax escalator, which will incentivise further increases in recycling and recovery;
- the Landfill Allowance Trading Scheme is a more recent policy instrument but is also having this effect for BMW;
- the current consultation on proposals to give local authorities a voluntary power to introduce financial incentives for household recycling and waste minimisation. Subject to the outcome of the consultation, the Government proposes to legislate to give local authorities this power, currently unavailable to them, at an early legislative opportunity;
- *the encouragement of anaerobic digestion* – see under The role of energy from waste below;
- *the Government's actions on public sector procurement* (see Chapter 7 of *WS2007*). For example, the Government is committed to extending and updating the list of procurement "Quick Wins". These encourage Departments to apply minimum environmental standards across a wide range of commonly purchased products: an example is the recycled content of paper. The Government has already set itself demanding targets for reducing and recycling its own waste.

### The role of energy from waste

88. EfW generated many responses, with views ranging from more energy recovery being 'urgently needed' (with Government proposals considered as still being too weak, with more support needed) to 'strongly oppose' (for incineration in particular). The reasons given by respondents who were opposed to increases in EfW were the perceived health and environmental effects and a fear that it would undermine efforts to manage waste further up the hierarchy. Others welcomed the proposals, taking the view that EfW has a viable place in the waste hierarchy.

89. Comments are grouped into three main categories:

- (1) health impacts;
- (2) displacement of recycling and its environmental effects; and
- (3) technology choices – which EfW technologies are more appropriate and what the relative mix should be.

#### (1) Health impacts

##### *Consultation proposals*

90. The consultation document (see page 61) summarised the Government's view of the human health impacts of EfW facilities (including levels of dioxin emissions). It referred to an independent health impacts review for Defra in 2004 (the 'Health Review')<sup>54</sup> which "concluded that on the evidence so far, the treatment of municipal solid waste has at most a minor effect on health. Risks to human health from incineration are small in comparison with other known risks faced by most people in their daily lives".

<sup>54</sup> *Review of Environmental and Health Effects of Waste Management; Municipal Solid Waste and Similar Wastes*, published May 2004, written by Enviro Consulting Ltd and University of Birmingham with Risk and Policy Analysts Ltd, Open University and Maggie Thurgood for Defra. Available at <http://www.defra.gov.uk/environment/waste/research/health/>

### *Consultation responses*

91. Some respondents raised concerns on the adverse environmental and health impacts of EfW, particularly in relation to incinerators. Principal concerns were, the impact on human health from air emissions from incinerators, including potential bio-accumulation of pollutants; that the Consultation Document underplayed the environmental and health impacts of EfW;<sup>55</sup> and that the Health Review for Defra was not truly independent, having been produced by consultants to the waste industry.

### *How WS2007 has taken responses into account*

#### *The evidence*

92. A key study on which the Government relied during production of the consultation document and *WS2007* is the Health Review. A summary of the findings of the Health Review was included as Appendix B to the Environmental Report.<sup>56</sup> The Health Review was peer-reviewed by the Royal Society, therefore the Government does not accept the view of some respondents that the Review was biased.

93. In brief, cancer, respiratory disease and birth defects were all considered, and no evidence was found for a link between the incidence of the disease and the current generation of incinerators. It concluded that although the information is incomplete, the weight of evidence from studies so far indicates that present-day practice for managing solid municipal waste has, at most, a minor effect on human health and the environment, particularly when compared to other everyday activities. Furthermore, the current generation of incineration plant have to comply with more stringent standards (in the Waste Incineration Directive) than the majority of those considered in the literature review for this study – see further below.

94. The Health Protection Agency (HPA) issued in November 2005 a Position Statement on Municipal Solid Waste Incineration.<sup>57</sup> Key points in the statement include:

- the by-products of the incineration process may contain hazardous or toxic pollutants and emissions will contribute to background pollution levels. Since 1996 there have been significant cuts in emissions from incinerators in order to meet strict EC legislation. This has led to the phasing out of the older, more polluting plants as new emission and operation standards were introduced. As a result, contemporary facilities are substantially less polluting and modern abatement technology will help to reduce the hazard from emissions provided that the facilities are properly operated at all times;
- the EC Waste Incineration Directive<sup>58</sup> (often termed 'WID') will further reduce the potential to pollute. WID will impose stricter operating conditions and emissions standards and so further reduce the potential human health impact. This should ensure that public health effects are unlikely. Pollution Prevention and Control permits will require immediate reporting of breaches of emission standards and the stopping of the waste feed should the abatement technology fail. These requirements will further reduce the potential for incinerators to cause significant pollution;<sup>59</sup>

<sup>55</sup> The relevant section is on p. 61 of the Consultation Document.

<sup>56</sup> For the Environmental Report's assessment of health impacts from waste facilities, see its Section 4 – Environmental baseline and Appendices A and B.

<sup>57</sup> Available at [http://www.hpa.org.uk/chemicals/ippc/incineration\\_posn\\_statement.pdf](http://www.hpa.org.uk/chemicals/ippc/incineration_posn_statement.pdf)

<sup>58</sup> Directive 2000/76/EC. This was transposed into UK law on 28 December 2002. As of December 2005, all new and pre-existing incinerators have to comply with the tighter provisions of WID.

<sup>59</sup> UK regulations now require these higher standards from new and existing waste incinerators – see below.

- there is little evidence to suggest that incinerators are associated with increased prevalence of respiratory symptoms in the surrounding population. Modern, well-managed waste incinerators will only make a very small contribution to background levels of air pollution. Air-monitoring data demonstrate that emissions from incinerators are not a major contributor to ambient air pollution. However, the contribution to local pollutant levels should be assessed on a site-specific basis;
- current levels of dioxins emissions from incinerators are unlikely to increase the human body burden appreciably as incineration of municipal solid waste accounts for less than 1% of UK emissions of dioxins.<sup>60</sup> However, dioxins and furans are highly persistent pollutants and the HPA strongly supports the Government policy to reduce dioxin exposures further by all practicable means and welcomes the stricter emission limits applied under WID;
- studies in the UK have principally focused on the possible effects of living near to the older generation of incinerators, which were significantly more polluting than modern plant. The Agency has considered studies examining adverse health effects around incinerators and is not aware of any consistent or convincing evidence of a link with adverse health outcomes. However, it is accepted that the lack of evidence of adverse effects might be due to the limitations regarding the available data;
- as well as the Health Review, the Agency considered the following studies:
  - an earlier report by the Medical Research Council's Institute for Environment and Health on the 'Health Effects of Waste Combustion Products'<sup>61</sup> which also concluded that 'epidemiological studies on people who work at or live near incinerators have shown no consistent excess of any specific disease';
  - the Committee on the Carcinogenicity of Chemicals in Food, Consumer Products and the Environment<sup>62</sup> reviewed a large study by the Small Area Health Statistics Unit that examined 14 million people living within 7.5 km of 72 municipal solid waste incinerators, which operated up to 1987. The Committee concluded that, 'any potential risk of cancer due to residency (for periods in excess of ten years) near to municipal solid waste incinerators was exceedingly low and probably not measurable by the most modern techniques'. In the Position Statement the Health Protection Agency agreed with this view.

95. The *Position Statement concludes that* "Incinerators emit pollutants into the environment but provided they comply with modern regulatory requirements, such as WID, they should contribute little to the concentrations of monitored pollutants in ambient air. Epidemiological studies, and risk estimates based on estimated exposures, indicate that the emissions from such incinerators have little effect on health".

96. The responses to the consultation did not cite any further evidence which we consider suggests that these conclusions should be reviewed. Also, municipal waste incineration emissions have fallen considerably in recent years.<sup>63</sup> And emissions standards for waste incinerators are now even more stringent with UK regulations implementing relevant provisions of the Waste Incineration Directive for new incinerators from 2002 and for existing incinerators from December 2005.<sup>64</sup> The regulations impose air and water emission limit values.

<sup>60</sup> On this issue, the Health Review pointed out that emissions of dioxins per tonne of MSW had decreased by 99.8% over the preceding 20 years.

<sup>61</sup> Available at <http://www.le.ac.uk/ieh/pdf/R7.pdf>

<sup>62</sup> The full statement can be found at <http://www.advisorybodies.doh.gov.uk/coc/munipwst.htm>

<sup>63</sup> See, for example, these figures on the Environment Agency website which chart municipal waste incineration emissions between 1990 and 2004 ([http://www.environment-agency.gov.uk/commodata/103196/203464?referrer=/yourenv/eff/1190084/resources\\_waste/213982/203410/](http://www.environment-agency.gov.uk/commodata/103196/203464?referrer=/yourenv/eff/1190084/resources_waste/213982/203410/)) and dioxin emissions between 1998 and 2004 ([http://www.environment-agency.gov.uk/commodata/103196/203472?referrer=/yourenv/eff/1190084/resources\\_waste/213982/203410/](http://www.environment-agency.gov.uk/commodata/103196/203472?referrer=/yourenv/eff/1190084/resources_waste/213982/203410/)).

<sup>64</sup> The Waste Incineration (England and Wales) Regulations 2002 (SI 2002 No. 2980) came into force on 28 December 2002: see <http://www.opsi.gov.uk/si/si2002/20022980.htm>. Together with directions issued at the same time to the Environment Agency and the local authorities, who are the regulators, they transpose the Waste Incineration Directive, 2000/76/EC (the "WID"). See further Defra June 2006 Guidance at <http://defraweb/environment/ppc/envagency/pubs/pdf/wid-guidance-edition3.pdf>

97. Evidence from outside the UK is consistent with this. For example, Germany has seen large falls of pollutants from waste incineration, despite a large increase in the volume of incinerated waste. Cadmium emissions, for example, dropped from 5000kg in 1990 to 56kg in 2001. Dioxin emissions have also fallen dramatically, mirroring the experience of the UK.<sup>65</sup> The Health Review also assessed evidence from outside the UK. It found that despite the difference between the percentage of MSW incinerated in the UK, compared to some other EU countries, the technological and emissions levels of current incineration plants are similar (with emissions falling), primarily due to EU-wide legislative requirements.<sup>66</sup>

98. The Government's position as set out in Chapter 5 of *WS2007* is as follows:

Concern over health effects is most frequently cited in connection with incinerators. The Research carried out to date shows no credible evidence of adverse health outcomes for those living near incinerators. The relevant health effects – primarily cancers – have long incubation times, but the available research demonstrates an absence of symptoms relating to exposures twenty or more years ago, when emissions from incineration were much greater than they are now. Very demanding EU standards for dioxin emissions now apply. The Health Protection Agency has published a short Position Statement of the health impacts for municipal waste incineration which reaches similar conclusions.<sup>67</sup>

99. The Government considers that the body of evidence available is robust. But, as with other waste management facilities, the Government will consider any new evidence that emerges.

## (2) Incineration versus recycling – climate change impacts and recycling displacement

### *Consultation proposals*

100. The consultation document stated that EfW reduces emissions from greenhouse gases in two ways: because the wastes could otherwise go to landfill and generate methane, and because emissions from the biomass fraction of the waste, which are carbon-neutral, are likely to replace those from fossil generation. It made clear that EfW is only a valid option for those wastes which cannot realistically be treated in other ways, and would otherwise have to be disposed of to landfill. It acknowledged the risk that EfW expansion might hinder future options to manage waste higher up the hierarchy and stated that care needed to be taken, for example, in the design of contracts so that the operator is not overly-dependent on any one supplier of waste.<sup>68</sup>

### *Consultation responses*

101. As stated above, a large number of standard and form letters opposed EfW, partly because of the concern that incineration in particular would detract from recycling. Concern was also expressed about the inefficiency of electricity generation and carbon dioxide emissions from incinerators, with recycling seen as a much better option. The large capital costs involved were seen as leading to long-term contracts, which acted as a disincentive to look for preferable solutions such as recycling and waste reduction. Some examples were given of local authorities that were said to be struggling to provide enough residual waste or prioritising EfW above recycling.

<sup>65</sup> See <http://www.umweltbundesamt.de>

<sup>66</sup> See page 73 of the Review of Environmental and Health Effects of Waste Management; Municipal Solid Waste and Similar Wastes, published May 2004, written by Enviros Consulting Ltd and University of Birmingham with Risk and Policy Analysts Ltd, Open University and Maggie Thurgood for Defra. Available at <http://defra.gov.uk/environment/waste/research/health/>

<sup>67</sup> This appears in paragraph 22, Chapter 5 of *WS2007*.

<sup>68</sup> See pp 61-64 of the consultation document for a discussion of the impact of EfW further up the hierarchy.

102. Proposals suggested by participants included the introduction of an incineration tax, the enabling of small-scale flexible solutions at a local level and the limiting of disposal contracts to 10 years.

103. The majority of individual responses took the view that EfW has a realistic place in the waste hierarchy, recovering energy from materials that cannot be recycled. Many wanted to know more about the carbon dioxide footprint of the various technologies, to allow comparisons with other reprocessing/disposal options and so more informed choices to be made.

### *How WS2007 has taken responses into account*

104. The Government has considered these responses. It notes that evidence from other countries, where very high rates of recycling and energy from waste co-exist, demonstrates that a vigorous EfW policy is compatible with high recycling rates. The Government considers that the key to ensuring that both are achieved is first, excellent quality consultation between stakeholders at an early stage when local waste strategies are being developed, and second, planning and building facilities with an appropriate amount of flexibility built in.<sup>69</sup> This means flexible – e.g. modular – buildings and also flexible contracts which do not lock in fixed amounts of waste for treatment which might become obsolete. Evidence is emerging that plant operators are bringing forward contracts that do not require provision of fixed volumes of waste.

105. The Government considers that recovering energy from waste which cannot sensibly be recycled remains a sound environmental objective (and is an essential component of a well-balanced energy policy). Defra research shows that recovering energy from residual waste (including by incineration) is a better option than landfill, which results in higher greenhouse gas emissions. The scale of carbon impact will depend on the efficiency of plant – hence the encouragement in *WS2007* for operators to look for opportunities to use combined heat and power (CHP) – and the balance of biomass to fossil elements in the waste. *WS2007* aims to ensure that as much of what can be recycled is recycled, that residual waste which is not recyclable has energy recovered from it and that as little waste as possible ends up in landfill.

106. The Waste Infrastructure Delivery Programme will, among other things, assist local authorities who decide to procure EfW facilities with flexible contract arrangements.

## **(3) Energy from waste – technology choices**

### *Consultation proposals*

107. The consultation document asked for views on the two main current EfW technologies: mechanical biological treatment/refuse-derived fuel (MBT/RDF) and direct incineration.

### *Consultation responses*

108. Nearly 300 respondents answered this question. Seventy-five expressed a preference for MBT/RDF. Reasons given include: the scope for greater front-end recycling; flexibility in terms of scale (modular technology) and outputs (RDF or stabilisation); reduced need for incineration capacity and more publicly acceptable; scope to produce a cleaner fuel source; and more efficient energy recovery. Many respondents expressed no preference but felt that more information was needed to make an assessment as to what would be appropriate depending on local circumstances, for example information on net energy derived, carbon dioxide emissions, proportion of biomass and CHP.

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<sup>69</sup> See *WS2007*, Chapter 5.

109. Fifty-three respondents expressed a preference for direct incineration. This was regarded as being a simpler, proven technology, which is deliverable at scale, whereas the markets for RDF and other MBT outputs are not well developed. Waste management companies vary in their responses, but generally support the need for local authorities to make their own informed decisions. Other respondents did not express a preference or preferred each of these technologies in different circumstances, or expressed a preference for other technologies.

110. Other forms of energy recovery were felt to be worthy of greater consideration. *Anaerobic digestion*, in particular, was said by numerous respondents *not to have been given sufficient consideration* in the consultation document. Anaerobic digestion was highlighted as a good example of a flexible, local waste solution, which would be more publicly acceptable than combustion technologies. It was considered by some respondents (particularly environmental and third sector groups) to be the most suitable technology for treating some types of wastes, e.g. food and certain other organic wastes from households, as well as C&I sources.

111. *Other technologies* considered by some to be worthy of greater consideration were gasification, pyrolysis, autoclave, plasma gasification and hydrogen and ethanol production. Some responses specified a preference for incineration technologies that recover heat as well as electricity (CHP) on the basis that they are more efficient.

### ***How WS2007 has taken responses into account***

#### *Anaerobic digestion*

112. Recent research for Defra (produced since publication of the consultation document) suggests that anaerobic digestion (AD) can provide significant environmental benefits over other options for food waste (and may be particularly cost effective for food waste if separately collected). In view of this research and the strong views of consultees, the Government has decided that *WS2007* should place more emphasis on AD as an appropriate technology choice for certain wastes. The Strategy:

- explicitly recommends AD for certain biowastes; and
- encourages more consideration of the use of AD both by local authorities and by businesses.

113. The Waste Implementation Programme (WIP) New Technologies Programme is funding an AD demonstration project for source-separated municipal waste. Defra is also taking forward work on promoting AD in farming and will seek to maximise the synergies between the different markets for it. WRAP and the Environment Agency are developing a standard and protocol for the digestate produced by AD to help build market confidence in its recovery on land. The Environment Agency intends to have an operational protocol for AD digestate by Spring 2008.

#### *Other Energy from Waste technologies*

114. The various EfW technologies, their different feedstocks, carbon emissions performance, and outputs are described in summary guidance<sup>70</sup> attached to *WS2007*. This is intended to act as a guide to local authorities and others who are considering procurement options. However, this summary is only a rough guide which will have to be adapted to regional and local circumstances. Local authorities need to develop their own regional/local strategies – these must include environmental objectives. To help apply this requirement, regional spatial strategies and local development documents are required to undergo sustainability appraisal.

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<sup>70</sup> See Annex E to *WS2007*.

115. In the light of the available evidence and the responses received, apart from AD, the Government does not think it appropriate to express a preference at national level for one technology over another, since local circumstances differ so much. Those making investment decisions should consider the summary guidance, and other similar information such as that which Defra's Waste Infrastructure Delivery Programme can supply. The Environment Agency's Waste and Resource Assessment Tool for the Environment (WRATE) software has also been designed to assist local authorities in reaching sound decisions about technology choices.<sup>71</sup>

116. The Government, while not generally expressing a preference for one type of technology over another for EfW, does believe that any given technology is (where applicable) more beneficial if both heat and electricity can be recovered. The strategy therefore states that particular attention should be given to the siting of plant to maximise opportunities for CHP. Greenhouse gas emissions should be an important criterion for stakeholders developing EfW plant. Some indications of typical emissions patterns are given in the summary guidance, but these will, of course, vary from location to location according to local transport links ,etc.<sup>72</sup>

### *The Renewables Obligation*

117. Chapter 5 of *WS2007* explains that the Government intends to band the Renewables Obligation, subject to consultation. This presents the opportunity to provide a more targeted level of support to the different renewables and continue to bring forward a diverse mix of renewable schemes including those EfW schemes that are currently eligible. The Renewables Obligation Certificates (ROCs) system provides support for electricity produced from the biomass content of waste treated in gasification, pyrolysis, AD and good quality CHP plants, as well as wastes that are over 90% biomass in content. EfW plant are also exempt from the Climate Change Levy, recognising the renewable fraction of waste.

## Greater use of economic instruments

### *Consultation proposals*

118. The Government's consultation raised the issue of an effective pricing framework in Chapter 3, recognising that there is a great deal which the market can do itself to secure a combination of better business and environmental outcomes and that prices will often, therefore, be the most effective driver for changing behaviour. The consultation noted that there is a number of existing mechanisms with strong links to prices including:

- the landfill tax;
- the aggregates levy;
- the current local household incentive pilot schemes;
- the Landfill Allowance Trading Scheme; and
- tradable packaging waste recovery notes (PRNs).

119. Two specific questions were posed in the consultation document:

- Question 8: How effectively do current prices drive the behaviour of those involved in preventing, producing or managing waste?; and

<sup>71</sup> See the EA website at <http://www.environment-agency.gov.uk/wtd/1396237/> for further information.

<sup>72</sup> See further Chapter 5 of *WS2007*.

- Question 9: Are there further tradable allowance (or other) schemes that could be developed to help the market deliver environmental outcomes more efficiently?

### *Consultation responses*

120. In response to Question 8, many respondents recognised pricing as an important driver but considered the current pricing framework to have had limited effect in driving behaviour. The LATS and landfill tax escalator were widely recognised to be major drivers in behaviour change. Responses included the following:

- while many felt that these have already made a difference there was a strong sense from all sectors that landfill prices are not yet sufficient to drive the change desired, with landfill often still being the cheapest option;
- there was recognition that LATS will be a strong driver for local authorities to move waste management up the waste stream but strong support for higher landfill tax to drive sustainable waste management in other sectors;
- while the landfill tax was considered to be showing an impact on large businesses, it was felt to provide less incentive to SMEs. Some respondents felt that recently introduced measures such as LATS and the landfill tax escalator should be given time to deliver before being altered. Many felt that current prices have little effect on household waste management activity;
- there was strong support for variable charging and/or making waste management costs more transparent on council tax bills for household waste, although some respondents felt that costs were not high enough yet to change people's behaviour.

121. Responses to Question 9 were fairly evenly divided between those who challenged the use of such schemes and those who wanted to see an extension of tradable allowances and/or the introduction of new schemes. Comments included:

- *trading schemes* – there was some criticism which highlighted the failings of such schemes: that costs alone tend not to be enough to change behaviour; schemes focus on dealing with waste not preventing waste; they are complex and resource intensive to manage; and they tend to enable participants to buy their way out, rather than make the behaviour changes needed. There was a strong sense that LATS needed to be given time to work and monitored and assessed properly before making any changes. Suggestions for an extension of tradable allowance schemes included extending LATS to the private sector so it can include C&I waste;
- *disposal taxes* – some respondents suggested raising the escalator higher and/or faster to raise the cost of landfill disposal to equal or higher than other waste reprocessing options and raw material production. Many responses, particularly from environmental groups, called for further disposal taxes, notably on incineration. Conversely, some local authorities called for economic drivers to stimulate the uptake of EfW technology to compensate for the lack of demand from the energy market;
- *household waste* – many respondents identified direct charging of householders as a potential tool to drive prevention and reduction of waste. Several others, notably in the waste management industry, raised the issue of the potentially negative impacts of such an approach, including illegal waste activity and disproportionate impacts on certain sectors of

society. Alternatives to household charging were also proposed, including further use of positive incentives, council tax rebates and increased transparency of household waste costs, for example through itemised council tax bills;

- *virgin material tax* – interest was expressed by some in extending the aggregates levy to a broader levy on raw materials. It was also suggested that the income from such a tax could be used as a fund to support other waste reduction or recycling schemes;
- *direct support* – other schemes suggested include providing start-up grants, ringfencing of landfill tax to fund waste-related grants, linking schemes to the renewables obligation to stimulate EfW including RDF, carbon trading and tradable permits in methane for landfill operators with biologically active sites.

### *How WS2007 has taken responses into account*

122. Chapter 2 of *WS2007* recognises that sound long-term market signals that drive the most efficient decisions are required to change the way waste is managed. The key new policies set out in *WS2007* are described below.

#### *Landfill tax*

123. Many respondents to the consultation called for stronger price signals and, in particular, for the landfill tax escalator to be increased faster and further. The Government agrees that there is now a need for stronger signals on landfill prices and in the 2006 Pre-Budget Report the Government announced that from 1 April 2007 the standard rate of landfill tax will increase by a further £3 per tonne to £24 per tonne. Furthermore, the Chancellor announced in Budget 2007 that, from 1 April 2008 and until at least 2010–11, the standard rate of landfill tax will increase by £8 per tonne each year. The lower rate applying to inactive waste will also increase from £2 to £2.50 per tonne from 1 April 2008.

124. The landfill tax has been very successful: overall quantities of waste recorded at landfill sites registered for the tax fell from around 96 million tonnes in 1997–98 to around 72 million tonnes in 2005–06, a reduction of around 25%.<sup>73</sup> The Government considers that continued increases in the standard rate of landfill tax will give greater financial incentives to businesses to reduce and recycle waste.<sup>74</sup> The Government's decision to announce further increases in the standard rate of landfill tax is consistent with the views of those consultation respondents who consider that landfill prices are not yet sufficiently high to drive the desired change. The government's assessments of the appropriate level of landfill tax have included consideration of such factors as the external cost of landfill emissions and the price at which private investment in waste management infrastructure becomes competitive with landfill disposal.

#### *Trading schemes*

125. The first year of the LATS was successful. All 121 waste disposal authorities were within limits. Waste disposal authorities landfilled 18.5% less BMW than their total allocation. This continues the downward trend in the quantity of BMW sent to landfill in England. The scheme does incentivise waste prevention – the Government disagrees with respondents who considered that it does not do so – and the current trends in municipal waste statistics may support this. In response to the view from some respondents that such trading schemes tend to enable participants to 'buy their way out', rather than

<sup>73</sup> See Chapter 2 of *WS2007*.

<sup>74</sup> See further Chapter 2 of *WS2007* under 'The Landfill Tax and Efficient Resource Use'.

make the behaviour changes needed, it must be recognised that another participant must have exceeded their initial allocation for this to be the case, meaning that the outcome is the same, but at what is likely to be lower cost.

126. There was some criticism which highlighted the failings of such schemes: that costs alone tend not to be enough to change behaviour; schemes focus on dealing with waste not preventing waste; they are complex and resource intensive to manage; and they tend to enable participants to buy their way out, rather than make the behaviour changes needed. The Government agrees with consultation respondents that the scheme needs time to settle down before any major changes are considered. The Government will review during 2007 the operation of LATS to ensure that it is working efficiently. The review will cover administration of the scheme, processes such as the electronic register, and some monitoring and reporting tasks. It is not intended to review or alter fundamental aspects of the scheme, for example allocations of allowances, as it is important that the rules of a trading system remain stable to provide confidence to local authorities in long term planning.<sup>75</sup>

### *Market support*

127. The contribution which EfW can make to energy policy is recognised in the financial support provided through the Renewables Obligation – see paragraph 117 above.

### *Enhanced capital allowances*

128. The Government has continued to examine the potential to introduce an Enhanced Capital Allowances (ECA) scheme to support new waste management facilities. This work has focused on developing options to encourage investment in developing markets for the outputs (e.g. secondary recovered fuel (SRF)) of new waste treatment facilities. In Budget 2007<sup>76</sup> the Government announced that it intends to review the classes of equipment that can qualify for ECAs for good quality CHP to ensure that the scheme includes all necessary equipment for CHP facilities to use solid refuse fuel.

### *Financial incentives for household recycling*

129. The Government agrees with the many consultation respondents that identified the lack of a direct price driver on household waste behaviour as a key element missing from local authorities' 'toolkit' to incentivise household waste behaviour. The Government is now consulting on removing the ban on local authorities using financial incentives for household recycling and waste minimisation. Subject to the outcome of the consultation, the Government proposes to legislate to remove the ban on local authorities introducing such schemes at an early legislative opportunity.

### *Options not being taken forward in WS2007*

130. An *incineration tax* was suggested by some consultation respondents. The Government considered the case for a tax and announced its position on this in the 2004 Pre-Budget Report.<sup>77</sup> The Government considers the reasons for this position still stand and that there is not a case for an incineration tax at present. At present, incineration remains more expensive than landfill. Imposing an incineration tax would reduce the incentive to divert waste out of landfill and recover energy from non-recyclable wastes. Also, as described in the section above on EfW, emissions standards that incinerators have to meet have been tightened considerably over recent years and emissions have fallen significantly.

<sup>75</sup> See further Chapter 2 of *WS2007*.

<sup>76</sup> See [http://www.hm-treasury.gov.uk/budget/budget\\_07/bud\\_bud07\\_index.cfm](http://www.hm-treasury.gov.uk/budget/budget_07/bud_bud07_index.cfm) for further information

<sup>77</sup> Paragraphs 7.57–7.60 in [http://www.hm-treasury.gov.uk/media/92C/1C/pbr04\\_chap07\\_233.pdf](http://www.hm-treasury.gov.uk/media/92C/1C/pbr04_chap07_233.pdf)

131. The Government considers that there is a case, including environmental benefits, for some increase in incineration, as put forward in *WS2007*. The level of waste incineration in England is still low compared to many of our European neighbours (which also have higher levels of recycling than in England). In 2005, the UK incinerated 8% of its municipal waste, against an EU average of 17.5% and levels as high as 50% in Sweden and 54% in Denmark.<sup>78</sup> The introduction of an incineration tax would hinder this development. The Government will continue to keep this under review in the light of progress and other developments, such as the continued increases in landfill tax.

132. The Government is continuing to explore barriers to new waste management technologies, such as MBT, and ways of facilitating their introduction. Work has focussed on encouraging investment in developing markets for the outputs (e.g. SRF) of new waste treatment facilities, including the potential role of ECAs. As described above, in Budget 2007 the Government announced that it intends to review the classes of equipment that can qualify for ECAs for good quality CHP.

133. Product policy takes account of all impacts across the whole life cycle of a product or service, including waste and resource use. Suitable interventions that will be most effective at improving the environmental performance of products and services will be considered within the development of the Government's products and materials work – including design, voluntary agreements, technology, market and regulatory solutions. Many respondents raised the issue of fiscal instruments, including products and materials taxes, as one way of tackling waste. The Government already employs many fiscal instruments (such as the landfill tax and the aggregates levy) to address market failures, and will continue to examine the full range of policy instruments to tackle all aspects of the waste hierarchy.

### Increased focus on commercial and industrial waste

#### *Consultation proposals*

Proposals contained in Chapters 4 and 5 of the consultation document included:

- developing and extending a sectoral approach, for priority sectors, including through producer responsibility;
- continuing development by the Environment Agency of a series of sector plans with key industries;
- piloting more recycling services for small businesses;
- continuing to develop markets for recycled materials including further standards for such materials which will allow lighter regulation;
- a wider strategic role for local authorities in relation to business waste.

#### *Consultation responses*

134. A wide range of suggestions were provided on how to increase recycling and recovery of C&I waste. There was support for the C&I landfill diversion target, but few suggestions on how this would be delivered. Responses included the following:

- many responses on how to encourage more recycling and recovery of C&I waste, focused on fiscal incentives and penalties, such as increasing the costs of landfill;

<sup>78</sup> Source: 2005 Eurostat Structural Indicators on Municipal Waste generation, landfilling and incineration, available at [http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1996,45323734&\\_dad=portal&\\_schema=PORTAL&screen=welcomeref&open=/&product=STRIND\\_ENVIRO&depth=2](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/&product=STRIND_ENVIRO&depth=2)

## Annex K: Environmental Statement

- strong support for the *sectoral approach*, including prevention targets, especially for packaging and food waste, targeted at the manufacturing and retail sectors. There were caveats around availability of reliable data necessary for prioritisation and how targets would be implemented. Most respondents favoured a statutory approach over purely voluntary agreements, or a combination of both, with voluntary agreements being backed by the threat of regulation;
- *producer and retailer responsibilities* were flagged by many respondents as valuable mechanisms with:
  - many respondents preferring statutory requirements over voluntary agreements. A lesser number preferred voluntary agreements, sometimes set within a regulatory framework. Both sides emphasised the need to ensure strong monitoring and auditing of voluntary agreements;
  - a strong sense that more interaction was needed between producer responsibility schemes and local authorities. The principal concern was whether and how local authorities would receive funding for the additional work. A wide range of suggestions was provided to improve the situation, mainly from local authorities. Many respondents referred to packaging and, for example, wished to see targets for Local Authorities (LAs) that were not weight-related but based on volume, or with an obligation on LAs to collect lighter fraction recyclable material; others wanted to see a mechanism whereby PRN money could be paid to LAs to offset some of the costs involved;
  - some suggestions provided for products which were seen as meriting increased producer responsibility, such as direct mail and free newspapers;
- *construction and demolition waste* – there was a lot of support for the proposals in the consultation document and in particular the development of Site Waste Management Plans. Key themes included the following:
  - many respondents supported greater use of fiscal incentives;
  - several respondents supported further increases in the landfill tax and aggregates levy;
  - there was support from many respondents for making Site Waste Management Plans mandatory, from a range of different categories of respondents;
  - mixed views on the sector's performance on resource efficiency. Responses included the view that the sector was already doing a fair bit, that 10% of the material delivered to sites goes directly into skips due to over-ordering and that the low cost of construction materials means that companies give relatively little thought to waste reduction;
  - some respondents felt that the sector already has a good record for recovering materials. Responses included the views that existing taxes compared with low average selling prices for materials were leading to high aggregate recovery activity, that there are special problems associated with materials such as treated wood that can contain toxic components, that the ability to reduce, re-use, etc. is very different for each of the construction, demolition, refurbishment and excavation sub-sectors, that most inert waste is already being recycled where practicable so emphasis should be placed on active materials such as timber and plastics, and manufactured products such as flooring and building systems, which have higher environmental impacts;

- specifications for the re-use of recycled materials (e.g. aggregate in concrete) in building materials need to be standardised and enforced to facilitate greater use of recycled materials.

135. With regard to *engaging with and supporting businesses* to reduce waste and increase recycling and recovery, many respondents made particular reference to SMEs, which generally have limited resources and access to facilities and make up the vast majority of England's businesses by number. Local authorities were often suggested, along with the BREW programme, WRAP and other delivery bodies, as good sources of support to SMEs. The balance of responses, particularly from local authorities themselves, but also from many environmental groups, supported the view that there is a demand from businesses for increased help from local authorities with recycling services.

136. Some respondents suggested that SMEs had a lack of awareness of recycling issues and limited access to support, advice and information. They saw continued Government funding and support, such as through Envirowise, as necessary. Commercial drivers to encourage SMEs to reduce and recycle waste were seen as key by many respondents. Some respondents considered that increases in landfill tax were needed, and not just for SMEs but for C&I waste in general.

137. There was strong support for more integration of municipal and C&I waste streams in order to offer economies of scale in the provision of recycling and recovery facilities. However, there were some concerns over impacts on LATS. There was widespread support for a greater strategic role for local authorities in facilitating this, provided adequate funding and resources are made available.

138. *Packaging* – many respondents felt that more should be done to reduce packaging waste and increase recycling and recovery. The view was widely expressed (particularly by local authorities, environmental NGOs and individuals) that more needs to be done to reduce the amount of packaging waste generated (especially plastics). Respondents suggested a range of statutory and voluntary approaches.

### ***How WS2007 has taken responses into account***

139. In comparison to WS2000, WS2007 puts more emphasis on tackling C&I waste. Some actions are being delivered now, others are subject to further consideration and consultation. The Government recognises the strong support expressed in the consultation responses for the sectoral focus and WS2007 sets out a direction which places greater emphasis on priority sectors and materials.

140. *Producer responsibility* – the Government will extend producer responsibility arrangements (both statutory and voluntary) to place responsibility on businesses, including producers and retailers, for the environmental impact of products they place on the market. See further Chapter 4 of WS2007. For example, the Government will:

- extend WRAP's Courtauld Commitment to non-food retailers to increase the total commitments by retailers to reductions in packaging, food and other post-consumer waste;
- develop an opt-out for unaddressed mail with the Direct Marketing Association (DMA) alongside delivery of their action on addressed mail, to reduce the amount of unwanted direct mail. This will be developed on a voluntary basis in the context of the existing agreement. Government will also be exploring with the DMA whether an opt-in system would be an appropriate mechanism to further reduce unnecessary direct mail.

- put in place the statutory producer responsibility scheme being developed for non-packaging farm plastics.

141. *Sectoral approach* – *WS2007* sets out action on specific sectors, including the retail, the food and drink and construction sectors (see below). Actions cover (depending on the sector), reducing business waste, increasing recycling and recovery of business waste, reducing and recycling post-consumer waste which comes from the sector and increasing the recycled content of new products. The Environment Agency is also developing a series of sector plans with priority sectors.

142. *New focus on key materials* – Chapter 4 of *WS2007* sets out the immediate actions the Government is taking on priority materials, namely paper and card, biodegradable wastes, aluminium, plastic, wood, textiles and glass. Some of these actions will help tackle C&I as well as post-consumer waste. For example, the Government intends to establish with the paper industry an agreement with challenging targets to reduce paper waste and increase paper recycling incorporating and developing existing agreements for newspapers, magazines and direct mail but extended to office papers, free newspapers, catalogues and directories. Beyond these actions, the Government will be developing further work, in consultation with stakeholder groups, including relevant trade associations, to explore how greater recovery of these materials might be achieved in cost-effective ways over the longer term.

143. *Packaging* – the Government recognises that respondents view packaging as an important waste stream which we must continue to tackle, both in terms of reducing waste and increasing recycling and recovery. It agrees that there is still a problem of excess packaging around many products. Therefore *WS2007* recognises the success of the Packaging Directive to date but also sets out new actions including:

- the Government will, in consultation with the industry, look to amend the domestic producer responsibility Regulations to achieve packaging minimisation. This would aim to set optimal packaging standards for a product class;
- the Government will, subject to further analysis, propose higher recycling targets for packaging waste for the Packaging Directive period beyond 2008;<sup>79</sup>
- the Government is supporting development of a joint protocol to ensure that local government and industry both identify the best systems for cost-effective collection of packaging waste;
- after discussions with the Government and WRAP, UK retailers have agreed to reduce the environmental impact of carrier bags (both plastic and paper), encourage customers to significantly reduce the number of carrier bags they use and enable the recycling of more carrier bags where appropriate.

144. *Construction and demolition waste* – *WS2007* puts increased emphasis on this waste stream. Actions include the following:

- the Government is consulting on regulations for Site Waste Management Plans (SWMPs) which could make it mandatory for those responsible for projects above a certain threshold to prepare plans before work begins on site. SWMPs aim to reduce illegal waste activity, including fly-tipping, and will also encourage reductions in the amount of waste produced and improved resource efficiency;

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<sup>79</sup> See the section on packaging in Chapter 4 of *WS2007*.

- the major plasterboard manufacturers and their trade association have developed, with WRAP and the Market Transformation Programme (MTP), a voluntary agreement to reduce plasterboard waste to landfill and increase collection and recycling. WRAP and the Building Research Establishment are working with the remaining elements of the supply chain to agree a sector-level commitment;
- through the MTP, the Government is developing policy roadmaps for other priority construction products such as window systems;
- improving resource efficiency will be a theme of the Sustainable Construction Strategy which the Government intends to publish later in 2007; and
- to stimulate diversion from landfill, the Government is considering a possible new target of halving the amount of construction and demolition waste going to landfill by 2012 as a result of waste reduction, re-use and recycling. The Government will be discussing this further with construction stakeholders, including the industry, and presenting any construction waste targets in the Sustainable Construction Strategy.

145. *Landfill tax* – as described above (see Greater use of economic instruments) the Government has announced higher increases in the standard rate of landfill tax from April next year, on top of the £3 per tonne increase in April 2007. This increased cost of landfill will help increase recycling and recovery of C&I waste and support the landfill diversion target which we will be setting shortly.

146. *Business support* – the Government is to continue to provide advice and support to businesses on waste and resource efficiency through the BREW programme in 2007/08. The Comprehensive Spending Review is considering the future, scale and nature of the BREW programme beyond 2007/08, the outcome of which will be announced later in 2007. The Government is working to further improve the BREW programme outcomes by extending the existing monitoring and evaluation methodology, and setting a clearer strategy for the programme's activities. Key delivery bodies such as WRAP, Envirowise and NISP, which receive funding from BREW and other sources, do a valuable job in helping businesses tackle their waste. This was recognised by many respondents. Elsewhere in this section is detailed a range of business support initiatives. To give another example, the Environment Agency is developing a Resource Efficiency Appraisal and Development (READ) tool to help businesses appraise their resources management and improve performance.

147. *Local authorities and business waste* – WS2007<sup>80</sup> encourages local authorities to take on a wider role (in partnerships) to help local (particularly smaller) businesses reduce and recycling their waste with cost savings through more integrated management of different waste streams. The Government will encourage the development of this wider role: by funding pilot initiatives by local authorities; through WIDP encouraging local authorities to consider non-municipal waste when planning and procuring facilities for municipal waste and by supporting the preparation of guidance and dissemination of good practice on this wider role. Through BREW the Government is already funding:

- (a) a WRAP pilot on recycling collection services for SME waste; and
- (b) a pilot on how local authorities can best support effective business waste management and resource efficiency.

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<sup>80</sup> See Local Authorities and Business Waste of Chapter 6 of WS2007.

148. The Government will consider further action needed to support the development of waste services to SMEs once results of these pilot projects are available.

### Illegal waste activity

#### *Consultation proposals*

149. Chapter 7 of the consultation document dealt exclusively with illegal waste activity and invited proposals on what more the Government should do by way of targeted prevention and enforcement. Chapter 7 highlighted the potential for a significant increase in all forms of illegal waste activity, including fly-tipping, as a result of legitimate forms of waste management becoming more complex and more expensive. It explored additional actions required to improve enforcement, preventative measures and evidence linking waste collection services to levels of fly-tipping. For example, it asked for views on whether additional funding should be made available for targeted enforcement campaigns in certain areas through BREW.

#### *Consultation responses*

150. Many respondents commented on illegal waste activity and its associated impacts. There were strong concerns over the potential for increased fly-tipping given increasing waste disposal costs, and calls for greater enforcement and better data capture if, in particular, variable household charging became a reality in some areas. Responses included the following:

- most of those who commented on illegal waste activity perceived the need for a *multi-faceted approach* consisting of more resources for enforcement, harsher penalties for those involved, better liaison and coordination among those responsible for policing, and a campaign of information and education to help prevent illegal waste activity;
- with regard to *enforcement agencies*, there were differences of opinion between participants over which bodies should be responsible for effective enforcement, with opinion divided between the Environment Agency, a strengthened Defra and/or local authorities;
- other suggestions included *clearer guidance for courts* and a *review of relevant legislation*. There were also ideas about reducing the motivation for these illegal activities by providing more facilities and reducing the economic drivers;
- some respondents felt that *more research* was required into what waste gets fly-tipped, and why. *Understanding of motivation* was seen to enable more effective prevention and enforcement; and
- respondents were divided as to whether there was evidence to link the *types and quality of local waste collection services* and general cleanliness to levels of fly tipping. Local authorities thought that there was a link, other respondents did not. A number of different solutions were also recommended to help overcome any problems that did exist including better policing and enforcement, education and publicity, low or no charges for the collection of bulky items, and providing better access to facilities, for example, longer opening hours at civic amenity sites. With regard to improving compliance with the controls that apply to the export of waste for recycling, the majority of respondents preferred stricter enforcement of existing regulations, including Duty of Care, with an expansion of policing and monitoring.

### *How WS2007 has taken responses into account*

151. The Government has taken these consultation responses into account, alongside two important additions to the evidence base for illegal waste activity and fly-tipping which Defra published on 31 July 2006.

152. The first of these was a report for Defra from the Jill Dando Institute of Crime Science (part of University College London).<sup>81</sup> The report provided a useful analysis of causes and incentives of fly-tipping – addressing the desire from some respondents for a fuller picture of illegal waste activity. The researchers found that fly-tipping is widespread and that there is not one problem but a variety of separate ones, distinguishable in terms of places, people, materials and opportunities for legal and illegal disposal. See Annex F to *WS2007* for further details. This report has contributed greatly to understanding of fly-tipping motivation, and further evidence is being developed.

153. Second, new data from Flycapture, the national database of fly-tipping incidences, for 2005–2006 has emphasised that fly-tipping continues to be a problem and provides new information on the scale of the costs. It showed that local authorities and the Environment Agency are currently spending £50 million a year in clearing fly-tipped waste from streets and the countryside. Once the clearance costs to private landowners and the enforcement costs associated with investigating and prosecuting offenders are included, the real costs of fly-tipping alone could be as high as £100 million a year. Local authorities reported that they had dealt with over one million incidents of fly-tipping.

154. This evidence and the sense from the consultation responses that more needed to continue to be done to tackle illegal waste activity has been taken into account in formulating a strong approach to this issue in *WS2007*. *WS2007* sets out a number of actions for now and the future which aim to deliver the fundamental objective of preventing illegal waste activity. Central to these is the forthcoming development of an action plan to tackle illegal waste activity.<sup>82</sup>

- The perceived need from some respondents for a multi-pronged approach was a factor in the Government's decision to work with the Environment Agency, local authorities and other key groups like the police and business representatives, to develop an action plan to tackle illegal waste activity. The Jill Dando Institute report also concluded that there is scope for a *more strategic problem-solving approach* to fly-tipping with more cooperation between authorities, the police and the Environment Agency, and stronger evaluation of initiatives to build a firmer knowledge base. The Report concluded that this would be more promising than current approaches which tend to focus primarily on clean-up after the event and enforcement when the opportunity arises;
- the planned action plan will help deliver this approach. The Government will work with the Environment Agency, local authorities and other key groups to develop and implement the *action plan to tackle illegal waste activity*.

155. In the consultation document, the Government said that it would work with the Environment Agency to research the scale and impacts of other illegal activities and to develop prevention and enforcement strategies to tackle them. Defra has *funded the Environment Agency to carry out a scoping report* into the nature and possible extent of four other areas of illegal waste activity: the involvement and role of waste brokers; the abuse of exemptions from waste management licences; the deliberate mis-description of waste; and the avoidance of permitting controls.

<sup>81</sup> *Fly-tipping: causes, incentives and solutions*, Webb, Marshall, Czarnomski and Tilley, Jill Dando Institute of Crime Science, University College London, July 2006. Available on Defra's website at <http://www.defra.gov.uk/environment/localenv/flytipping/research/index.htm>

<sup>82</sup> See further Chapter 3 of *WS2007* and its accompanying Annex F.

156. With regard to *stronger enforcement powers*, the Government considers that the introduction in recent years of the Anti-Social Behaviour Act and the Clean Neighbourhoods and Environment Act 2005 (the CNEA) has already strengthened significantly the power available to enforcement authorities and the penalties which can be applied. The Government is developing regulations to implement the provisions of the CNEA relating to powers to stop, search and instantly seize vehicles being used to commit certain illegal waste activities.

157. As put forward by some respondents, the Government is *reviewing legislation* on the registration of waste carriers, the waste duty of care, and the registration and control of waste brokers. One aim is to reduce levels of illegal waste activity. It will consult later in 2007 on draft regulations with implementation planned for 2008.

158. Defra will promote *the findings of the good practice guide* developed by the Jill Dando Institute report and consider how the recommendations can be taken forward. Defra is interested in working with some local authorities who would be prepared to develop and implement strategies for prevention of illegal waste activity across their services and geographical area.

Other key actions include the following the following:

- *Flycapture* is proving to be an important recent addition to the evidence base for illegal waste activity and a valuable management information tool, not just for central government but also for local authorities and the Agency. Defra will work with the Flycapture Stakeholder Groups to consider how Flycapture can be enhanced or improved;
- the Government is consulting on proposals to make SWMPs mandatory for certain construction sites. One of the key aims of SWMPs is to reduce the amount of construction and demolition waste that is fly-tipped;
- *WS2007* includes an indicator to monitor the number of fly-tipping and waste offences;
- *controls on imports and exports of waste* – Defra has recently consulted on a review of controls on the handling, transfer and transport of waste, including the waste duty of care. This includes proposals to strengthen the links between the domestic and international framework of controls;
- and the Government's separate consultation on transfrontier shipments proposes new powers for the regulators in relation to exports of waste.<sup>83</sup> These should address stakeholder concerns.

### ***Consultation proposal not being taken forward in WS2007***

159. In the consultation document the Government noted that there may be a case for some possible transfer of responsibilities and extension of enforcement powers from waste collection authorities to waste disposal authorities, as it believed this would encourage more partnership working.<sup>84</sup>

160. Following the consultation, the Government carried out some further investigations and found several examples of local authorities who are using existing legislation to form partnerships, pool resources and work together to tackle illegal waste activity on a county-wide basis. Others are using arrangements such as Crime and Disorder Partnerships, or are pooling resources to jointly fund full-time fly-tipping enforcement officers or a dedicated police officer. The Jill Dando Institute good practice guide for local authorities has further details of such examples. The Government has therefore decided that there is no need for further legislative change on this issue.

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<sup>83</sup> See Chapter 3 *WS2007*.

<sup>84</sup> See p.100 of the consultation document.

### Simplification and clarification of waste regulation

#### *Consultation proposals*

161. The consultation document posed several questions seeking views on waste regulation proposals. These included Question 5 which sought views on further improvements to the regulatory framework. The consultation document put forward the Government's intention to carry out a fundamental review of the existing system of exemptions from licensing, and stated there might be a case for the extension of the new simplified environmental permitting system to include other areas such as discharge and abstraction licences.

#### *Consultation Responses*

162. One of the key themes raised by respondents to the consultation was the need to simplify waste regulation and ensure it could be more enabling and less obstructive of strategic objectives.<sup>85</sup> The current permitting and licensing regime was seen by many as unnecessarily complicated and costly. Issues raised by respondents included the following:

- the issue of the *definition of waste* was often raised. Concerns were raised by a variety of stakeholder groups, including businesses, trade associations, public sector organisations and environmental NGOs:
  - respondents saw a need for more clarity around when waste can be considered as fully recovered and no longer waste for the purposes of the Waste Framework Directive (WFD). Responses reflected the view that the aim should be, as far as possible, to treat recycle in the same way as primary materials;
  - most respondents commenting on the definition of waste saw it as an obstacle to increased re-use and recycling of resources. Many secondary materials deemed to be waste were subject to waste management regulations, adding extra conditions and bureaucracy to procuring recovered rather than virgin materials; and
  - some suggestions were provided on redefining waste. In response to Question 30, many respondents stated that issues of definition of waste, common to many sectors, can be addressed by means of clearer quality standards and protocols;
- some respondents put forward strong views that the current *permitting regime* is overly complicated and many find it unnecessarily costly. They considered this to be a disincentive to investment and expansion of capacity. Others regarded this as a barrier to entering the market for potential recyclers and reprocessors. Some respondents wished to see exemptions for particular sectors or waste streams, while the majority across all sectors wanted a simple and easy to regulate regime, whether applied to waste handling or waste production, that large and small organisations can work within. Ease of regulation must, however, be well enforced, and thereby command public trust. A few comments reinforced this issue by expressing concern about relaxing regulation on the waste industry in the light of examples of bad practice and a poor public reputation;
- *delivery and implementation* issues were also highlighted by those subject to regulation. They stressed the need for better communication, for example clear user-centred guidance and adequate funding. Some respondents in the waste management industry commented that

<sup>85</sup> Respondents raised issues of waste regulation not just in response to Question 5 but also more wide-ranging questions, such as Question 17 seeking views on stimulation of re-use and re-manufacture and Question 30 on acceleration of development of markets for recycled materials.

regulation should be applied to unlicensed operators, with the extra funding requirement coming from either the public purse or through a hypothecated proportion of an increased landfill tax accelerator;

- suggestions on improving the regulatory regime included *strengthening the Duty of Care* and ensuring it is enforced, providing more integration and consistency between regulatory regimes, including European regulations, and across other policy areas such as energy, soil and agriculture;
- a range of responses addressed the subject of *stakeholder involvement* in the regulatory process, principally expressing the need for more engagement with citizens, NGOs, SMEs, industry and others, extending to coordination between regulators, such as the Environment Agency, with planning authorities and the planning process;
- there was support for new producer responsibility initiatives on the hazardous waste streams put forward in the consultation, including solvents used for industrial cleaning, waste lubricating oils, garden pesticides and decorative paints. The majority of respondents preferred a statutory approach but a range of views were expressed on funding and infrastructure implications.

### *How WS2007 has taken responses into account*

163. *WS2007* recognises the importance of the definition of waste and that waste regulation be proportionate to the health and environmental risks it seeks to manage.<sup>86</sup> It emphasises that regulation should encourage, rather than discourage, waste prevention and the recovery of resources from waste.

164. *WS2007* sets out a package of measures<sup>87</sup> that Defra considers address stakeholder concerns raised in the consultation, including the fundamental concern that waste regulation should be simpler. Some work to clarify and simplify regulation is already under way. Other measures are being taken forward by means of separate consultations, either already in progress or planned – see further below.

165. Key measures set out in *WS2007* are as follows:

#### *Definition of waste and new waste protocols*

- Defra acknowledges stakeholder concerns that many stakeholders still perceive a lack of clarity around the definition of waste. Therefore, Defra and the Environment Agency will be publishing for stakeholder consultation draft updated guidance on the interpretation of the definition of waste. The guidance will make use of examples to aid understanding.
- The Environment Agency and WRAP are working with industry sectors to develop further the series of domestic *waste protocols* for priority materials. There was support from many consultation respondents for these. These will determine the point at which certain categories of waste can be deemed to have been fully recovered and cease to be waste. *WS2007* states that these protocols could, in future, provide a UK contribution to the European Commission's proposed EU-wide end-of-waste criteria.

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<sup>86</sup> See Chapter 3 of *WS2007*.

<sup>87</sup> See Chapter 3 of *WS2007*.

- It must be remembered that most waste regulation in the UK is derived from EC legislation on waste.<sup>88</sup> Therefore, Defra and the Environment Agency must work with the current definition of waste as set down in the WFD and interpreted by European Court of Justice and national court judgments. The European Commission's current proposal to revise the Waste Framework Directive will not change the definition of waste. The Commission consulted stakeholders before presenting its proposals and concluded that: 'The feedback from this consultation revealed that there is a significant consensus in favour of *not* radically amending the definition of waste'. The Government agrees with this assessment.
- That said, the European Commission's proposal to revise the WFD contains some genuine simplification measures and revisions which the Government believes would improve existing legislation and provide greater clarity for business and industry, such as: the repeal and integration of the Hazardous Waste Directive into the revised WFD; and the development of EU-wide environmental and quality criteria to determine that specified waste streams have been fully recovered and have ceased to be waste.
- Separately, the European Commission published on 21 February 2007 an interpretative communication providing guidance addressing issues that have arisen in relation to the interpretation of the definition of waste, notably in respect of the distinction between materials that are not the main objective of a production process but can be considered as non-waste by-products, and those that should be treated as wastes. The Government will build on this guidance by issuing for consultation the draft UK guidance on the definition of waste referred to above.

### *Reforms to the permitting system*

- Work to simplify the regulatory system and make it more proportionate and risk based is already under way, and has progressed considerably in the period after publication of the consultation document. There are a number of separate consultations and reviews which will ensure that stakeholder views are further taken into account. *WS2007* describes this programme of initiatives.
- The *Environmental Permitting Programme*<sup>88</sup> aims to modernise waste management licensing processes and will contribute to the Environment Agency's strategy to modernise its approach to environmental regulation. Its first phase, due to come into effect in April 2008, will integrate the waste licensing and pollution prevention and control permitting systems, leading to a more streamlined approach which is estimated to save industry and regulators some £90 million over ten years. This is a significant cost saving and demonstrates that the Government and the Agency have taken seriously consultation concerns regarding the cost of waste regulation.
- Defra and CLG have consulted on options to clarify the current *interface between planning and pollution control* including in the waste field. Defra and CLG will incorporate the final outcomes of this review into the environmental permitting and planning systems, as appropriate, subject to a full quantitative regulatory impact assessment.

<sup>88</sup> See the introductory section in Chapter 3 of *WS2007*. The Waste Framework Directive (WFD) currently defines waste as "any substance or object... which the holder discards or intends or is required to discard".

- In December 2006, Defra, with the Environment Agency and Welsh Assembly Government, launched a *review of the current exemptions from waste management licensing*. The purpose of the review is to complement the environmental permitting programme by ensuring that those operations currently exempt from the requirement for a waste licence are regulated in a proportionate risk-based way.

### *Review of the regulation of inert waste*

- *WS2007* announced that Defra and the Environment Agency have put in hand a review of the regulation of inert waste covering a range of issues including the appropriate use of inert waste exemptions, inconsistencies with the landfill tax regime and the quality of guidance in this area. Stakeholders will be formally consulted by the end of 2007 on options for reform.

### *The duty of care*

- As noted in *WS2007*, the duty of care<sup>89</sup> and waste carrier registration systems are currently being reviewed. A consultation paper on these was published on 29 November 2006. The deadline for responses was 6 March 2007. The review was set up in response to suggestions by key industry stakeholders (including through the waste strategy consultation) that the system is not working effectively for them and from the Regulator that the regime is not effectively delivering the policy objectives of ensuring waste is safely and legally transferred. The review will result in the update of the duty of care and waste carrier regimes, including existing regulations and related guidance with a view to simplifying the regulation to the end-user.
- The consultation put forward a number of ideas to improve: the waste duty of care, the registration of waste carriers and the registration and control of waste brokers. Following the consultation, the Government will publish for further consultation one set of draft amending regulations that will combine the legislative changes needed to improve controls on waste carriers, brokers and the duty of care.

### *Hazardous waste*

- One of the key issues relating to the management of hazardous waste is the recognised need for further treatment capacity in order to meet the requirements of the Landfill Directive, particularly relating to the application of the Waste Acceptance Criteria (WAC). The Government has included an assessment of facility need in *WS2007* to help guide regional planning bodies and business in the planning and procurement of new hazardous waste infrastructure.
- On household hazardous waste (HHW), taking account of the consultation responses, the Government intends to take forward work on decorative paints and garden chemicals with a view to discussing with the relevant sectors the scope for voluntary agreements to increase separate collection, recycling and recovery of these wastes.<sup>91</sup> The consultation document set out options for strengthening and encouraging implementation of the current arrangements for separate collection. The Government has set out the requirements of the Hazardous Waste Regulations on the separate collection of HHW and encourages local authorities to adopt the guidance on household hazardous waste issued by the National Household Hazardous Waste Forum, including the provision of separate collection services for HHW, and to publicise such services. We are reviewing the provisions of the Hazardous Waste Regulations 2005 to ensure

<sup>89</sup> See Annex J – Legal Framework for Waste Management for further information.

<sup>90</sup> This duty applies to any person who imports, produces, carries, keeps, treats or disposes of controlled waste or, as a broker, has control of such waste.

<sup>91</sup> See further Chapter 3 of *WS2007*.

that they are clear that hazardous waste placed for separate collection or taken to a Household Waste Recycling Centre should remain separate and not to be mixed with other hazardous waste or non-hazardous waste.

- For the reasons set out in Section 6 below, the Government does not currently propose to bring forward the development of a producer responsibility scheme for waste oil.

### Importance of implementation and delivery arrangements

#### *Consultation proposals*

166. The consultation document proposed a new standing interdepartmental implementation board (the Sustainable Waste Programme Board), chaired by the Defra lead Director on waste, which would oversee the preparation and implementation of the new waste strategy. The Board's proposed responsibilities would include:

- development of a Sustainable Waste Implementation Plan to deliver *WS2007*;
- ensuring adequate engagement with external stakeholders on the development and implementation of waste policies, perhaps through a standing stakeholder advisory board;
- overseeing delivery of national waste objectives in relation to all waste streams and EU directives; and
- monitoring and evaluating strategic implementation of *WS2007* and forecasting further requirements.

167. The consultation document posed a question (Question 39) on the proposed Board and how it should engage with waste stakeholders and the wider community. Other questions sought views on the roles and responsibilities of other actors, such as local authorities and Regional Development Agencies. A question was also posed on approaches to develop the third sector further and how the Government can best facilitate the contribution of this sector in the delivery of waste objectives.

#### *Consultation responses*

168. How *WS2007* would be implemented was a common theme raised in the consultation responses. Many respondents wanted a much clearer sense of how the strategy would be delivered in practice, where the funding would come from, whether it would be possible to develop the necessary infrastructure in time, and how the various policies fit together. Views included the following:

- calls for *clarity on the role of Government* and an emphasis on the need for the Government to take the lead in driving delivery;
- *strong support for the delivery Board* – those broadly supporting the establishment of the Board outweighed those challenging the need for a Board by about 3 to 1. Concerns were raised about the Board's membership, remit, powers, funding, operation and management;
- many *supporters* considered that such a board could play a useful role in engaging wider stakeholders and ensuring their views and ideas were taken into consideration when developing and delivering policy;
- those who *challenged the proposal* did so on the grounds that another layer of government was unlikely to add value. There was particular scepticism from some waste industry representatives who considered that another layer of government was likely to cause confusion, preferring better coordination among government departments with responsibility for waste;

- with regard to *membership*, there was some public sector concern that having a single local authority representative on the Board would be insufficient, suggesting that, given the differences between waste disposal authorities and waste collection authorities, both types should be represented and recommending LARAC or LGA representation. Some waste industry representatives urged that the Board membership include representation from business and the waste industry, through such bodies as ESA and CIWM. Some respondents argued for the inclusion of third sector representatives, both to ensure that it was not dominated by business interests, and to help ensure that it had access to participants on the ground who are active in diverting waste. There were suggestions for environmental NGO representation. Some respondents promoted better representation of organisations with a social and economic perspective;
- with regard to its *terms of reference*, the main concern was where the proposed Board would focus its activities, what its specific duties would be, what powers it would have to get things done, and what resource/supporting infrastructure would be in place to ensure it could drive change at the required pace;
- regarding the possibility of a *standing advisory board of stakeholders*, respondents expressed a desire for more clarity on its role. There was strong support for the principle of full and adequate representation from all interested/involved parties in addressing the challenges on waste;
- queries on *how sustainable consumption and production would be integrated*.

### ***How WS2007 has taken responses into account***

169. In revising proposals on the implementation and delivery arrangements for *WS2007*, consideration has been given to the views and suggestions received from stakeholders.

170. In responding to concerns regarding how *WS2007* will be delivered, the Government has provided within *WS2007* greater clarity on how the new strategy will be implemented.<sup>92</sup> Throughout, *WS2007* contains information on key new measures, associated actions and the players involved in carrying forward the necessary delivery work. Chapter 8 of *WS2007* summarises the arrangements for implementation and details how success will be measured. This Chapter includes a high-level implementation plan summarising the key new actions arising from *WS2007*, the timeframes for these actions and responsibilities for delivery.<sup>93</sup> More information on delivery can be found at:

- Annex B – Delivery landscape and decision-making, which summarises the roles and responsibilities of the key delivery partners; and
- Annex C – Waste stream summaries, which sets out detailed accounts of the policy interventions, delivery mechanisms and roles and responsibilities of delivery stakeholders for each waste stream.

171. Against a backdrop of a high degree of support for an inter-governmental board to oversee delivery and call for improved government leadership, the Government is establishing an implementation board – to be called the Waste Strategy Board. *WS2007* sets out more detail on the remit and *membership of the Board*.

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<sup>92</sup> See further Chapter 8 of *WS2007*.

<sup>93</sup> See Chapter 8 of *WS2007*.

172. In responding to views on engaging stakeholders in development of policy and implementation of *WS2007*, a Waste Stakeholder Group will be established, the remit of which will be to provide advice, challenge and input on future policy and strategy development and implementation. This Group will ensure engagement from a broad range of stakeholders. The Waste Strategy Board will have strong links with the Waste Stakeholder Group. In response to respondents' concerns that the Group should have broad representation, *WS2007* includes a commitment to draw Group membership from across the piece (including business, waste management industry, local government, the third sector, consumers and environmental non-government organisations).

173. With regard to *integration of waste and sustainable consumption and production agendas and issues*, *WS2007* reinforces the role of waste policies within the wider SCP agenda. It recognises the need to focus on the environmental impacts of production and consumption when prioritising interventions. The Waste Strategy Board will be chaired by the lead Defra Director for Sustainable Consumption and Production & Waste.

174. Finally, comments were also raised on the partial Regulatory Impact Assessment. These principally concerned the assumptions and data used in modelling future trends and policy impacts. The responses are reviewed in Table 1 of the Impact Assessment published alongside *WS2007*<sup>94</sup>. Comments on the Environmental Report have been described and addressed in Section 4 above.

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<sup>94</sup> See further Annex A to *WS2007*.

### **6. Reasons for choosing the strategy as adopted, in the light of the other reasonable alternatives dealt with**

175. As explained in Section 2, *WS2007* must enable the UK to meet the relevant requirements of EU legislation. A notable piece of EU legislation is the Landfill Directive under which the UK must reduce significantly and quickly the amount of BMW going to landfill. Protection of the environment is a driver behind this Directive. If the UK fails to meet the requirements of the Directive, it could face the risk of significant fines.

176. On some matters, England's waste strategy, and any alternatives within it to current policies, must follow the requirements of EC directives. For example, as explained in Section 5 above, the definition of waste derives from an EC Directive and its application in case law.

177. Within this European context a key aim of the strategy is to increase the environmental benefit of waste management taking account of practicability and deliverability, and the costs to businesses, individuals and the Government.

178. In order to assess and inform the strategic proposals contained in the consultation document, the Environmental Report developed and evaluated four strategic alternatives (presented as scenarios) to current policies which assessed the proposals in their operation at each of the principal levels of the waste hierarchy. These scenarios are set out in Section 4 above. The scenarios therefore showed the effects of doing more, or less, in each of the key levels of the waste hierarchy (e.g. increased recycling, increased diversion of waste from landfill). The extent of the scenarios was chosen to reflect the full range of likely significant effects on the environment associated with the proposals.

179. The balance between these different scenarios which *WS2007* aims to achieve has been translated into the targets discussed and set out in Section 4. The Government considers that the framework of targets set out in *WS2007* provides the right balance between the different levels of the waste hierarchy in the light of key factors which include cost, practicability, availability of infrastructure and time taken to develop new infrastructure, EC legislative requirements and the environmental outcomes sought. Alternative targets were considered such as higher household recycling targets (see Section 4).

180. To achieve these outcomes, the consultation document set out proposed policy options (in some cases with specific alternatives). *WS2007* takes forward most of the proposals set out in the consultation document. The responses to the consultation on these (including alternatives proposed by respondents) have been dealt with in the preceding section.

181. The pRIA accompanying the consultation assessed these options in terms of the wider impacts, costs and benefits (including environmental, social and economic). The Impact Assessment updates this assessment in light of the consultation and further information and analysis available since publication of the pRIA. Options are not taken forward in *WS2007* where the costs did not justify the benefits, where it was not yet possible to assess the costs and benefits or where a new regulatory burden would be imposed without seeking a voluntary approach first. See further the Impact Assessment at Annex A of *WS2007*.

182. Some proposals are also included in *WS2007* for further consideration and consultation. These include:

- *landfill restrictions* – the Government intends to consult, subject to further analysis, on further restrictions on the landfilling of biodegradable wastes and recyclable materials (see Section 4 above). This would reduce greenhouse gas emissions from landfilled waste, improve resource efficiency and reduce the environmental impact of landfill;
- *higher packaging recycling targets post-2008* – the Government will propose, subject to further analysis, higher packaging recycling targets beyond the 2008 European targets (set down in the Packaging Directive) to increase recycling (e.g. each tonne of aluminium recycled saves 11 tonnes of carbon dioxide);
- *local government future statutory performance standards* – the Government is developing proposals for local authority waste performance indicators to be enshrined in the new performance framework. The final agreed performance package will be published later in 2007.

183. A few proposals in the consultation document are not being taken forward. The reasons for not taking forward these alternatives are set out below.

- *Waste oils* – in its review of waste directives, the European Commission has proposed the repeal of the Waste Oil Directive, along with its requirement for Member States to give priority to the regeneration of waste oil. In view of this development and the current state of the waste oil market, the Government does not, at present, propose to bring forward the development of a producer responsibility scheme for waste oil but will review this in the light of the outcome of revisions to EU waste legislation or other developments.<sup>95</sup>
- *Solvents for industrial cleaning* – it was a recommendation of the Hazardous Waste Forum that further producer responsibility could be considered for such solvents. The Government has considered this and is currently of the view that there is no evidence that there is a problem with this waste stream, in terms of collection and management, such as to justify further producer responsibility at present.
- *Illegal waste activity*: extension/transfer of enforcement powers to waste disposal authorities – see Section 5 above on illegal waste activity.

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<sup>95</sup> This is explained in Chapter 3 of *WS2007*.

### 7. Monitoring the significant environmental effects of the strategy

184. Defra will monitor and review delivery of the strategy, including the significant environmental effects of its implementation, in compliance with the requirements of Regulation 17 of the Regulations.<sup>96</sup> Many respondents to the consultation stressed the importance of delivery and implementation. As described in Section 5 above, the Government has taken these views into account in formulating a thorough set of implementation arrangements. The Waste Strategy Board and the Waste Stakeholder Group are being established to oversee and monitor effective implementation. This section describes the measures that are to be taken to monitor the significant environmental effects of the implementation of the strategy.

#### The Waste Strategy Board and the implementation plan

185. The Waste Strategy Board will be responsible for taking forward the delivery of *WS2007* and developing new policy actions as necessary to deliver outcomes in the light of progress. It will:

- oversee implementation of *WS2007*; and
- produce regular reports on implementation of *WS2007*.

186. *WS2007* includes a high-level implementation plan which shows key new actions, timeframes for these and responsibilities for delivery. It recognises that successful implementation of *WS2007* will require involvement from a wide range of actors, within and outside Government.

187. *WS2007* and the policies within it will need to adapt in line with, among other things, progress in achieving *WS2007*'s aims, objectives and obligations, and developments at the European level (such as the outcome of the EU Waste Framework Directive negotiations).<sup>97</sup> The Government is committed to keeping *WS2007* under review and will consider any revisions needed.<sup>98</sup>

#### Monitoring and the importance of indicators

188. In several instances *WS2007* sets out the importance of ensuring effective monitoring of environmental impacts. For example, it states that the Government is committed to ensuring that the environmental impact of closed landfill sites is minimised in the long term and will do this through assessment of residual risk and prioritisation of sites needing further action such as increased monitoring or additional pollution control measures, particularly to protect groundwater and reduce the emission of landfill gas.<sup>99</sup>

189. The consultation sought views on the information gaps requiring waste management-related research in the short and long-term. Key responses included: the need for better information on life cycle and resource flow impacts, including carbon dioxide emissions, more research on waste composition and the need for fuller data on C&I waste. Defra is taking these views into account in its current research projects and formulation of the new Waste and Resources Evidence Strategy.

<sup>96</sup> Regulation 17 of the Regulations requires that "the responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action".

<sup>97</sup> See further Chapters 1 and 8 of *WS2007* for more information.

<sup>98</sup> See Chapter 8 of *WS2007*.

<sup>99</sup> See The future of landfill, Chapter 3 of *WS2007*.

190. Continuing development of the evidence base, in particular through this waste strategy and the new Defra Waste and Resources Evidence Strategy will inform the monitoring of implementation of *WS2007*. Many studies are already under way or being commissioned to fill gaps in knowledge on environmental impacts. For example, Defra is commissioning further research to strengthen the assessment and knowledge of health impacts from waste management. Defra will shortly commission two studies on bio-aerosol emissions. Defra is also considering further research into pathways through which emissions from waste management facilities might occur. As results become available, Defra will review them and consider whether policies need to be changed.

### Indicators

191. Indicators are an important tool in assessing the effectiveness of Government policies in meeting their objectives. *WS2007* puts forward a set of indicators which will enable monitoring of the significant environmental effects of the implementation of *WS2007*.

192. The Environmental Report consulted on a broad range of indicators. Views were sought on any priority that should be given to the indicators identified and whether alternative or further indicators should be used. There were few responses. One response suggested that the Environmental Report should have proposed more specific indicators; but another respondent stated concern at the apparent enthusiasm for developing a range of new indicators given that they require a good deal of administrative effort and, where there are category issues, can actually lead to irrational decision-making. Another respondent stated that there was a danger of "indicator overload" and that the strategy should recognise that indicators involve substantial resource allocation to data collection and the resolution of category issues.

193. Those that commented generally supported the need for indicators on arisings and recycling rates. For example, one respondent made the following statement:

*Comment* – 'If waste production was to decrease, then automatically some of its other environmental impacts that are also indicators (e.g. air and water pollution incidents, and effects on climate change and human health) will also decrease.'

*Response* – It is recognised that waste arisings and recycling rates are important indicators, and these are included in *WS2007*. Indeed, *WS2007* states that data will be developed to generate additional indicators, such as for recycling of construction waste. However, there is not a direct correlation between arisings and environmental effects, thus a broader range of indicators is required.

194. Another respondent wished to see a human health indicator.

*Comment* – 'It is therefore disappointing to see that the indicators proposed do not actually include a measurement of human health, only fly-tipping and the number of complaints received. Due to the uncertainties that exist in assessing the health impacts of waste management, surely it would be advantageous to actually measure morbidity and mortality?' The respondent suggested the number of birth defects in children living near major waste management facilities as an appropriate indicator.

*Response* – The 2004 Health Review concluded that the probable impacts of emissions from waste management on human health are very small in comparison to other hazards affecting health – see further Section 5 above. Defra does not believe it is possible at this time to develop

an indicator which would discern any additional impact of waste management on human health as there would be real difficulties in measuring whether a change in indicator performance would be caused by waste management practices or by other sources. In-depth scientific studies, such as have been commissioned by Defra and which Defra continues to commission, are considered to be a more appropriate means of assessing health impacts.

195. Another respondent made the following statement.

*Comment* – ‘We were disappointed that resource use is only proposed as an indicator that may be developed’.

*Response* – Resource efficiency is integral to waste policy, as *WS2007* recognises. The Government already reports on Domestic Material Consumption – defined as the total mass of materials directly consumed by the UK economy – as part of its set of Sustainable Development Indicators.<sup>100</sup> At present, it is considered that a single resource efficiency indicator would not be feasible or practicable given the inherent difficulties related to, for example, the complexities of global resource flows. This will be kept under review.

196. The overall progress of *WS2007* will be tracked using the set of national level indicators contained in Chapter 8 of *WS2007* (reproduced below in Table 8.1 from *WS2007*). The Government already reports on some of these; data is already available to enable reporting on others; others still are under development.

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<sup>100</sup> See no. 13 of the Sustainable Development Indicators, (at <http://www.sustainable-development.gov.uk/progress/index.htm#National>). DMC excludes waste from manufacture of imported goods.

**Table K.2: National Performance Level Indicators**

| Indicator   | Desired Direction of Travel | Frequency and availability  |
|---|-----------------------------|---|
| Carbon dioxide equivalent emissions from waste management and recycling (tonnes)  | ↓                           | Under development   |
| Household waste per head after re-use, recycling and composting (kg) <b>Target</b> <sup>101</sup>                             | ↓                           | Available – updated annually  |
| Household re-use, recycling and composting (%) <b>Target</b> <sup>102</sup>   | ↑                           | Available – updated annually  |
| Waste arisings (by key sectors – municipal, commercial and industrial, construction and demolition) (tonnes)                  | ↓                           | Municipal available; regular C&I and C&D data under development                   |
| Municipal waste recovery (%) <b>Target</b>  | ↑                           | Available – updated annually  |
| Waste re-used, recycled or composted (by key sectors – municipal, commercial and industrial, construction and demolition) (%) | ↑                           | Municipal available; regular C&I and C&D data under development                   |
| Energy recovered from waste (tonnes of oil equivalent) <sup>103</sup>   | ↑                           | Available – updated annually  |
| Waste landfilled (total and by key sectors – municipal, commercial and industrial, construction and demolition) (tonnes)      | ↓                           | Total and municipal amounts available; regular C&I and C&D data under development |
| Total non-municipal/non-inert waste landfilled (tonnes) <b>Target</b>   | ↓                           | Under development   |
| Biodegradable municipal waste landfilled (tonnes) <b>Target</b>   | ↓                           | Available – annual reporting  |
| Hazardous waste arisings (tonnes)   | ↓                           | Available – annual reporting  |
| Hazardous waste recycled/recovered (%)  | ↑                           | Available – annual reporting  |
| Serious waste-related pollution incidents – broken down by type, land, air, water   | ↓                           | Available – annual reporting  |
| Levels of fly-tipping and other illegal waste activity  | ↓                           | Available – annual reporting  |
| Public awareness of recycling (% committed recyclers)   | ↑                           | Available – periodic by survey  |

<sup>101</sup> Included as part of the Sustainable Development Indicators set.

<sup>102</sup> Current municipal data (and associated indicators) include tonnages reported as re-use by local authorities. This covers re-used tonnages within the scope of the municipal solid waste definition (i.e. waste under the possession and control of local authorities). Other re-use (e.g. through charity shops and that carried out internal to the home) would not, and could not, readily be captured here.

<sup>103</sup> Non-fossil fuel derived, reported by DTI in accordance with EU requirements for renewable energy reporting.

197. Some of these indicators are new: they are not currently reported on at national level, even though the data may already be collected. These are:

- carbon dioxide equivalent emissions from waste management and recycling (tonnes);
- total non-municipal/non-inert waste landfilled;
- public awareness of recycling.

198. Others are reported by the Environment Agency and Defra but not presented as national indicators. For example, fly-tipping and other waste offences are recorded by the relatively new Flycapture database, key data from which is published annually. By including these offences in the national indicator suite, the Government is highlighting the importance of monitoring fly-tipping, recognising that as landfill diversion increases and costs of landfill increase, there is a danger that fly-tipping will increase, with associated economic and environmental costs.

198. A key outcome is to seek the reduction of net greenhouse gas emissions from waste management operations. This includes two elements, direct impacts and offset benefits for waste recycling and recovery. Some of the latter are generated in the UK and some overseas. The aim is to reduce these emissions by at least 9.3 million tonnes of carbon dioxide equivalent by 2020 compared to 2006/07. The development of indicators is considered to be essential to underpin monitoring of successful implementation of *WS2007*.

200. *WS2007* therefore sets out an expanded range of national indicators which are considered more than adequate to monitor the significant environmental effects of implementation of *WS2007*.<sup>104</sup> Arisings, including across different sectors, are included not only for all waste but also for hazardous waste alone. The inclusion of a new greenhouse gas indicator is significant. Consideration is being given to how best the indicator can be developed and how it can be monitored: this is a priority given the importance of climate change on the political and environmental agenda.

201. Certain indicators were put forward as options for *WS2007* in the Environmental Report which will not be put in place at present. No comments were received on these indicators. These were:

- number of waste sites with a local Biodiversity Action Plan in place;
- number of waste sites with a registered Environmental Management System;
- total landtake of waste infrastructure;
- number of complaints gathered from the operation of waste sites;
- number of sites which exceeded their Environment Agency discharge authorisations in the previous year;
- eutrophication attributed to waste management;
- annual concentrations of dioxins in air;
- annual concentrations of mercury in air;
- proportion of new waste management sites located within areas covered by principal landscape designations, or within a prescribed distance; and
- hazardousness of waste.

<sup>104</sup> This set of indicators will complement the suite of 68 national sustainable development indicators which supports the UK Government Sustainable Development Strategy.

202. This decision was taken based on the consultation responses and the conclusions of the Environmental Report (see Section 4 above). The consultation received no support for these particular indicators. Other reasons for not including these indicators include: lack of available data at present; compared with the low magnitude of likely significant environmental effects, disproportionate expense to develop data collection and reporting systems to support these indicators; and difficulty of concluding that changes in these indicators would be attributable to successful implementation of *WS2007*.

203. With the new indicators which we have added, *WS2007* puts forward a manageable suite of indicators which enables monitoring of the significant environmental effects. It is important, as some respondents pointed out, not to have too many indicators as not only does the data collection and reporting process become unwieldy and resource-intensive, but also this can make it harder to determine the success of implementation of the strategy. The possibility of developing other indicators in the future remains open, and will be kept under review.

204. It may be appropriate, depending on local circumstances, for some of the above indicators, whether included or not in *WS2007*, to be reported at a local/regional level. The Government encourages monitoring by regional and local authorities of the impact, including environmental, of waste management in their local area. The indicators included in *WS2007* are considered appropriate for this national, high-level strategy.

205. Finally, Defra's model of causation and horizon scanning will remain important tools for ensuring coherence in future policy development and for monitoring strategy implementation. In developing *WS2007*, Defra developed the 'model of causation' to better understand the interactions within the complex landscape of waste management, mapped into an analysis web. This has facilitated more systematic thinking around the complex problems, generating a more robust view of causes and effects and the complex interactions between various factors within a system. Horizon-scanning techniques have also been used to develop alternative future scenarios against which to test policies within, and emerging from, *WS2007*. See further Chapter 1 of *WS2007* and Annex G which describes these tools in detail.