REPORT TO GREEN ALLIANCE

Public Spending on the Environment
(Spending Round 2004)

by

Derek Smith and Paul Ekins
Environment Group
November 2003
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1 INTRODUCTION AND CONTEXT

This paper provides the results of research carried out by the Policy Studies Institute (PSI) on behalf of Green Alliance and four other environmental organisations¹ into UK government environmental targets and associated spending. Research has been carried out from 11 September - 25 October 2003.

The background to the research is the forthcoming Spending Round (‘SR 2004’). In common with previous spending rounds, SR2004 will set firm and fixed three-year Departmental Expenditure Limits and, through Public Service Agreements (PSAs), define the key improvements that the public can expect from the use of resources. The Spending Round process, therefore, is an important one in determining short and medium term spending levels, including expenditure on environmental protection and improvement.

1.1 The Aim Of The Research

In the context of the forthcoming Spending Round, the aim of the research has been to gather evidence related to Government environmental targets and expenditure in five priority environmental areas. Research has sought information from publicly available sources on:

- The targets to which the Government is committed.
- The level of public expenditure currently dedicated to these areas.
- Views on the adequacy and effectiveness of this spending.
- In the light of that, views on how much spending should be allocated to these priority areas in SR2004.

The five areas for research are:

- Energy.
- Biodiversity.
- Waste.
- Marine.
- Farming.

1.2 Approach To The Research

The research has been guided by briefing papers on the five areas prepared by one of the commissioning environmental NGOs. Desk research has been undertaken, drawing on published material, building on the initial briefing. The views in this report are those of the authors.

¹ Greenpeace, National Trust, Royal Society for the Protection of Birds, and World Wide Fund for Nature. The work was coordinated by Green Alliance.
1.3 The Structure Of This Paper

This section provides brief introductory information to set the context of current public expenditure. Each of the five research areas is then examined in turn.

In each of the five policy areas, information is provided on Government targets, showing their origin, and citing sources. Wherever possible, comment has been provided on the status of each target given the fact that the word ‘target’ is inconsistently used by Government, and is frequently the subject of debate and uncertainty.²

Public expenditure figures are presented. These have been obtained and linked to as many of the targets as possible, whether they are general overarching targets or whether they are more specific targets within that. Care has been taken to avoid double-counting. It should be noted that establishing expenditure figures precisely is extremely difficult, a point evident not only through the course of this research, but commented upon by many other analysts of government expenditure, including the House of Commons Environmental Audit Committee. Where different expenditure figures exist for the same or similar areas of policy, we have included the range of figures, in the interests of completeness and prudence.

In recognition of the fact that public expenditure is just one of the many ways in which Government can act to achieve its objectives, sections are also provided on steps taken to guide or stimulate the market in the desired direction and on the institutional and policy-relevant issues which also need to be considered because of their influence on the attainment of targets. For example, Government funding for windfarms could theoretically be far higher than it is today, but higher spend may not be any more effective without change to the planning system to enable them actually to be constructed. These descriptions of market and institutional issues cannot, in the scope of this research, be comprehensive. They are illustrative, yet seek to highlight the most important influences on outcomes in the researched areas.

Comments on the adequacy of government expenditure are then presented. Where possible, these have been gathered in relation to general and specific targets. They tend to focus on the specific issues in which the commissioning NGOs are interested, but wider views have been included where these have been found. We have provided some contextual comment about whether Government is on target to achieve its goals, but we have attempted to retain a sharp focus on providing comments which are specifically about levels of spending.

In the light of comments about funding levels, information is then provided on what levels of funding might be required to meet the targets. These sections are based on existing estimates or other information. They do not contain original primary research, forecasting or modelling by PSI.

² An example of this is the discussion between the DEFRA Secretary of State, officials and members of the Environmental Audit Committee on the status of the ‘targets’ listed in the Energy White Paper relating to energy efficiency. Officials clarified that the ‘targets for individual items’ listed on page 33 of the White Paper were not in fact ‘targets’, but were incorrectly described as such.
1.4  Context Of The Research

The research into levels of public expenditure and the proposals for future spending need to be set in the context of existing expenditure patterns.

The OECD estimates that environmental expenditure by public and private sectors in the UK is of the order of 1% of GDP. The OECD’s 2002 Environmental Performance Review for the United Kingdom\(^3\) states that reported spending on ‘pollution abatement and control’ (PAC) expenditure totalled approximately £7.4bn, of which 48% (or £3.5bn) was public spending. The single biggest portion of public expenditure (49%) is for waste management (whereas priority investment areas for the private sector were air, climate, and water treatment). The table below is taken from the OECD report:

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Investment</td>
</tr>
<tr>
<td>Env. Expenditure</td>
<td>£m</td>
<td>8742</td>
</tr>
<tr>
<td>% Share</td>
<td>100</td>
<td>53</td>
</tr>
<tr>
<td>% Per unit GDP</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PAC Expenditure</td>
<td>£m</td>
<td>7436</td>
</tr>
<tr>
<td>% Share</td>
<td>100</td>
<td>48</td>
</tr>
<tr>
<td>Air and climate %</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Waste water %</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Waste %</td>
<td>49</td>
<td>78</td>
</tr>
<tr>
<td>Soil and groundwater</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Other Env. Expenditure</td>
<td>£m</td>
<td>1305</td>
</tr>
<tr>
<td>% Share</td>
<td>100</td>
<td>84</td>
</tr>
</tbody>
</table>

Notes:
Environmental expenditure covers pollution and abatement control, plus research and development, environmental education, nature and biodiversity conservation, but excludes flood defence and water supply. Parts may not add up to totals, due to rounding. Breakdown of current expenditure by media are OECD Secretariat estimates.

Further context is provided by existing spending commitments, announced in SR2002. The spending plans for DEFRA and DTI, are shown below\(^4\). In the 2002 spending round, it was announced that spending on trade and industry was to grow by an average of 3% in real terms between 2002-03 and 2005-06 and spending on the resources of DEFRA and the Forestry Commission by an average of 2.7% a year from 2002-03 to 2005-06.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>DEFRA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Budget</td>
<td>2,443</td>
<td>2,765</td>
<td>2,742</td>
<td>2,792</td>
</tr>
<tr>
<td>Capital Budget</td>
<td>241</td>
<td>316</td>
<td>344</td>
<td>354</td>
</tr>
<tr>
<td>Total</td>
<td>2,523</td>
<td>2,902</td>
<td>2,890</td>
<td>2,944</td>
</tr>
<tr>
<td><strong>Trade &amp; Industry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Budget</td>
<td>4,555</td>
<td>4,800</td>
<td>5,084</td>
<td>5,564</td>
</tr>
</tbody>
</table>

\(^3\) ‘Environmental Performance Review: United Kingdom 2002’. (OECD)  
### Capital Budget

<table>
<thead>
<tr>
<th></th>
<th>292</th>
<th>424</th>
<th>167</th>
<th>104</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>4,726</td>
<td>5,106</td>
<td>4,904</td>
<td>5,542</td>
</tr>
</tbody>
</table>

### 1.5 Summary Of Spending Proposals Put Forward In This Report

On the basis of the evidence gathered, this report puts forward the following proposals for spending allocations in SR2004. Each chapter sets out the detailed case for these proposals.

#### Energy

It seems likely that additional government spending will be required to meet the ambitious targets set out in the Energy White Paper. Current legislation, including, for example, the Renewables Obligation and the Energy Efficiency Commitment, should deliver significant private sector investment in sustainable energy. However, an additional £300 million a year of government expenditure will also be necessary, allocated as follows:

- £160 million a year to meet fuel poverty targets.
- £7.5 million a year to support solar power.
- £5 million a year to support onshore wind.
- £100 million a year to support offshore wind.
- £10 million a year to support energy crops.
- £10 million a year to support marine renewables.
- £8 million a year on climate change communications.

These sums are small compared with the historic and current subsidies received by the nuclear industry, which plays no part in the sustainable energy vision of the Energy White Paper. It is suggested that they could be found by reducing the public subsidy of reprocessing spent nuclear fuel.

#### Biodiversity

Government targets in this area include DEFRA’s existing PSA “to care for our natural heritage, make the countryside attractive and enjoyable for all, and preserving biological diversity.” Current levels of government funding stand at approximately £250-300 million per year, and the report cites sources which feel this spending to be inadequate, particularly on SSSIs, agri-environment schemes for farmland birds, and the Biodiversity Action Plan. However, the reform of the Common Agricultural Policy provides a potential source of funding. To lever additional resources of £531 million per year from the CAP, the UK government would need to provide £173 million per year of additional funding.

#### Waste

DEFRA currently has a PSA target to recycle / compost 25% of household waste by 2005-6, and the EU Landfill Directive sets challenging targets for diversion of waste from landfill. The report shows that a wide range of commentators, including the
Government’s own Strategy Unit, consider current levels of government expenditure to be inadequate, reflected in missed targets to date. This also shows that the UK spends £60-70 per household per annum on waste, compared to £100 in France and £125 in the Netherlands, with both of these countries achieving significantly higher levels of diversion from landfill. A synthesis of evidence suggests that the following additional resources are needed:

- £1 billion per year to greatly increase recycling, and invest in recovery infrastructure, of which approximately £200 million would be needed to fund doorstep recycling.
- £250 million per year for related measures, including increased funding for waste minimisation schemes for businesses, resources to tackle fly-tipping, and better data collection.

The report notes that additional funding for waste management could be financed through planned increases to the landfill tax.

**Marine**

The UK government set out its vision for the marine environment with its first Marine Stewardship Report, ‘Safeguarding our Seas’, published in 2002. It does not contain detailed targets, though the UK is committed to a range of targets stemming from the EU, the Convention on Biological Diversity and marine conventions such as OSPAR. There has been very little research into amounts of spending needed to meet these commitments, but the report suggests that Government spending in the marine area could be focussed on:

- Establishing and monitoring protected areas.
- Decommissioning the UK fishing fleet.
- Monitoring of the remaining fleet to ensure that protected areas are respected, and that restrictions are complied with.
- Administration of decommissioning, quota management and effort management schemes.
- Continued scientific research and monitoring

**Farming**

The Government’s Strategy for Sustainable Farming and Food was published in December 2002, building on the recommendations of the Curry Commission; and DEFRA’s existing PSA covers this issue. The allocation of £500 million in SR2002 provided essential resources to implement the strategy, and enabled extra funding for these purposes to be levered out of the Common Agricultural Policy. The effects of this additional funding have yet to become apparent, and so it is premature to call for more spending. However, if progress is not to be undermined, sums already committed must be deployed as planned, and there is a case for additional spending beyond 2006 to continue this progress.
1.6 Synthesis Of Proposals

The table below brings together the public spending proposals for SR2004. The proposals would apply to DEFRA and DTI, which are the departments with primary responsibility for these policy areas. The total annual figure for each area is the sum of the individually costed ideas set out in each section of the report.

<table>
<thead>
<tr>
<th>Area</th>
<th>Proposal for Additional Spending (£/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>£300m per year</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>£175m per year, assuming the CAP transfers discussed in this report.</td>
</tr>
<tr>
<td>Waste</td>
<td>£1bn per year focused on meeting regulatory targets. £250m per year for other related measures.</td>
</tr>
<tr>
<td>Marine</td>
<td>£50m</td>
</tr>
<tr>
<td>Farming</td>
<td>£- No proposals made but essential that current financial commitments are followed through if momentum is to be maintained</td>
</tr>
<tr>
<td>Total</td>
<td>£1.7-1.9bn</td>
</tr>
</tbody>
</table>

This would create a total spending proposition of £1.7-1.9bn. For 2003-04, combined DEFRA and DTI spending amounts to approximately £8bn. It should be noted that over half the spending proposition consists of the £1 billion estimated to be required to meet EU requirements in waste management, an area in which the UK is acknowledged to lag behind comparable EU countries and in which a major new source of revenue (the landfill tax escalator) will soon be available. In the energy field, the proposition seems modest, given that it is directed to fulfil the aspirations expressed in this year’s Energy White Paper, and especially in the context of the very large sums of money that continue to be made available to the nuclear industry, which plays no role whatever in the White Paper’s view of sustainable energy developments. This then leaves the sum required for the related areas of terrestrial and marine biodiversity, and the fishing and farming industries. These are areas in which the Government has already started on an ambitious programme of reform (most advanced in farming, through the implementation of the Curry Report, but also through developments in the Common Fisheries Policy and the establishment of marine protected areas, such as the Darwin Mounds, in the context of its ‘Safeguarding Our Seas’ strategy). An extra £225m seems very much in line with the kind of policy momentum which the Government has already generated in this area.
2 ENERGY

2.1.1 Government Targets And Current Spending

The tables below set out Government targets and commitments within key areas of UK energy policy. The key areas are derived from the four main goals of energy policy highlighted in the 2003 Energy White Paper.

The UK has three overarching targets relating to the mitigation of climate change and greenhouse gas (GHG) emission reductions. Public spending information relating to these broad goals is not included within the UK Climate Change Programme, nor in the Energy White Paper, nor in the PIU Energy Review. Further information on estimated public expenditure is therefore provided later in this section, in relation to more specific targets. The overarching targets are set out in the table below:

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce GHG emissions to 12.5% below 1990 levels by 2008-2012.</td>
<td>Legally binding commitment under the Kyoto Protocol. Included within the UK Climate Change Programme. GHG emissions are one of the 15 Headline Indicators within the UK’s Sustainable development strategy.</td>
</tr>
<tr>
<td>20% reduction in CO₂ emissions below 1990 levels by 2010.</td>
<td>Domestic goal, but included within the UK Climate Change Programme.</td>
</tr>
<tr>
<td>Reduce CO₂ emissions by 60% from current levels by 2050. (This is a reduction of 58% from 1997 levels – resulting in emissions of approximately 64 million Tonnes of Carbon (MtC) in 2050).</td>
<td>Formally accepted as a target for the first time by the government in the Energy White Paper (para 2.12). Derives from the Royal Commission on Environmental Pollution’s recommendation ‘that the UK should put itself on a path to a reduction in carbon dioxide emissions of some 60% from current levels by about 2050’.</td>
</tr>
</tbody>
</table>

Supporting these high-level targets are a number of other ‘targets’, often related to improving energy efficiency, which are less well publicised, and specific to particular parts of the economy. For example:

- The central government estate has an interim target to reduce carbon emissions by 1% a year from 1999-2000 levels, with new targets to be set in 2003 (including targets on CHP).

- NHS Trusts have a target to reduce their primary energy consumption by 14-17% or by 0.15MtC equivalent from March 2000 to March 2010.

- A target for capacity provided by CHP – of 10,000MWe of CHP by 2010, which was set in 2000 and included in the Climate Change Programme.

- Local authorities must bring their own housing stock up to decent energy standards by 2010.

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5 The four stated goals are ‘putting the UK on a path to cutting carbon dioxide emissions by some 60% by about 2050, with real progress by 2020, maintaining the reliability of energy supply, promoting competitive markets in the UK and beyond, and ensuring that every home is adequately and affordably heated. (Energy White Paper: ‘Our Energy Future - Creating a Low Carbon Economy’, paragraph 1.18, February 2003.)

6 Climate Change: The UK programme. (Cm 4913. DETR. November 2000).
- 10% of new cars sold each year and 20% of new buses will be low-carbon vehicles (with emissions of less than 100g/km). This is set out in ‘Powering Future Vehicles’, published in July 2002. Other vehicle-related targets are the agreement with European car manufacturers to improve the average fuel efficiency of new cars by at least 25% by 2008-09.

These targets generally operate in parallel and some are often expressed as aspirations rather than 'hard' targets. Current predictions are that carbon emissions in 2020 will be 135MtC (this includes the effect of the current Climate Change Programme). The targets specify additional cuts of 15-25MtC below that by 2020, which are envisaged to be achieved as follows:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Carbon savings MtC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency in households</td>
<td>4-6</td>
</tr>
<tr>
<td>Energy efficiency in industry, commerce and the public sector</td>
<td>4-6</td>
</tr>
<tr>
<td>Transport (new voluntary agreements, biofuels)</td>
<td>2-4</td>
</tr>
<tr>
<td>Increasing renewables</td>
<td>3-5</td>
</tr>
<tr>
<td>EU carbon trading scheme</td>
<td>2-4</td>
</tr>
</tbody>
</table>

The UK Climate change programme is to be reviewed in 2004, which will provide an opportunity to strengthen existing policies or consider new policies if necessary. The carbon savings in the Programme from increased energy efficiency are as follows:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Carbon savings MtC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic energy efficiency, including the EEC</td>
<td>2.6-3.7</td>
</tr>
<tr>
<td>Replacement of community heating schemes</td>
<td>0.9</td>
</tr>
<tr>
<td>New HEES (Warm Front)</td>
<td>0.2</td>
</tr>
<tr>
<td>Appliance standards &amp; labelling (MTP etc.)</td>
<td>0.2-0.4</td>
</tr>
<tr>
<td>Revised Building Regulations in E&amp;W (domestic &amp; business)</td>
<td>1.3*</td>
</tr>
</tbody>
</table>

Note: * DEFRA’s view is that 0.8 MtC of this is obtainable from the domestic sector; and 0.5 MtC from business.

### Renewable Energy

Information on targets and government spending on renewables has been separated in the tables below. We have done this so that the information on spending can be seen and interpreted more easily, given that a number of different sources provide different figures for spending, over different time periods, and often cover slightly different areas of spend.

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>To source 10% of UK electricity from renewable sources by 2010.</td>
<td>Domestic goal, first formulated in Labour party manifesto and announced in January 2000.</td>
</tr>
<tr>
<td>Incorporates an interim target of achieving 5% renewable capacity by 2005 and yearly targets showing incremental increase.</td>
<td>The 10% target is enshrined in the Renewables Obligation order 20002, under the Utilities Act 2000.</td>
</tr>
<tr>
<td>An ‘aspiration’ (but not a firm target) to source</td>
<td></td>
</tr>
</tbody>
</table>

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7 The ‘decent home standard’ – set by ODPM – is a minimum standard that all social housing in England should achieve by 2010. It describes a home which is wind and weather tight, warm and has modern facilities.

8 Energy White Paper, p.26

9 Climate Change – The UK Programme, Cm. 4913, November 2000, p. 104
The table below brings together the range of figures quoted from various sources on Government expenditure on renewables. Most of these figures in their original presentation cover two or three years. We have converted these to determine an annual amount. The figures in the table will not, therefore, accurately capture variations in annual funding. But, these variations are not likely to be material. Not all of the sources provide a breakdown of expenditure, but where they do we have included as much detail as possible. For example, the 'Community Energy' programme spend, which aims to increase the development and installation of community heating schemes by addressing the key barriers of a lack of investment capital and a lack of knowledge on how to deliver the benefits of community heating, totals £50m over two years. We have therefore shown this as £25m per year, even though the actual allocation will be slightly higher in 2003 than in 2002. The PIU report figure is considerably lower than the typical figure of £89m per year. It is not evident why this is the case.

The amounts shown in the table do not include spending on research and development. The Energy White Paper suggests that this equals approximately £11m on energy-related research managed by the Research Councils and an additional £28 million for further research in support of sustainable energy. However, it does not state the period this spending relates to. Nor does the table include other programmes which provide support to renewables, but which do not focus on renewables. An example of this is DTI's Trade Promotion Service, which helps companies find collaborators or explore markets overseas. The service, while supporting renewable energy (and other environmental opportunities), is not focused on this area, and has therefore not been included in the aggregate figures.

There is little in the Energy White Paper relating to the promotion of bioenergy, and the table below shows that funding for this renewable resource is largely focused on planting new energy crops and some relatively advanced technologies. There is no support for the use of existing biomass (for example, forest thinnings) in more conventional boilers, despite the potential scale of this renewables option. The White Paper does refer to the Community Energy programme, which makes up a significant proportion of total annual spending. The scheme, launched in 2001, aims to boost CHP, and thereby contribute to the renewables and fuel poverty targets. The Government’s aspiration is that the funding will stimulate a further £200m of private sector investment by replacing obsolete infrastructure equipment.

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10 The Government’s ‘aspiration’ to double renewables’ share of electricity from the 2010 target is quoted in paragraph 4.11 of the Energy White Paper. It is not, therefore a formal target, despite the PIU Energy Review recommending that it should be (paragraph 7.65), a recommendation subsequently endorsed by the Environmental Audit Committee and several other organisations who submitted views to the White Paper consultation and review process.

11 Energy White Paper (paragraph 7.31)

12 Energy White Paper (paragraph 7.31).
Energy Efficiency

There is no formal overall government target for energy efficiency. However, there are goals for individual sectors and a firm Energy Efficiency Commitment target (the Energy White Paper includes a commitment to continuing and doubling of the EEC beyond 2005 and its extension to the business sector, as well as bringing forward the review of new building regulations to 2005). The lack of an overall target is the case even though there is Government expenditure in this area (channelled principally

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13 The items listed are frequently described as the DTI ‘Capital Grants Scheme’, although the individual components of the scheme are not always consistently identified. According to the PIU, capital grants are one of four elements in the UK strategy in support of renewable energy, the others being the Renewables Obligation, the CCL package, and R&D effort. The Scheme funds a number of demonstration projects to help reduce the costs and risks involved in such developments, and to maximise the contribution to the Government’s targets for renewable electricity supply within the UK.

14 According to the PIU, the following levels of funding apply to these elements, which make up the Capital Grants Scheme: £39m for Offshore wind, over 3 years from 2001-02 to 2003-04; £10m for photovoltaics also over the same three year period; £50m from the New Opportunities fund, made up of £33m for energy crop technologies, £10m for offshore wind, and £3m for small scale biomass heat / CHP (all of this is to be committed by 2005); £29m for Energy crop planting to be committed by 2006.


16 Report on Renewables of session 2002-03.

17 Cabinet Office figures quoted in the 2001 Pre-Budget report set out direct government spending on renewables to be £267m from 2001-2004. This is comprised of Offshore wind (27.8%, or £72m), Energy crops (29.5%, or £77.4m), Non-technology specific (27%, or £72m), Photovoltaics (7.5%, or £20m), Biomass heat (1.1% or £2.7m), Community Projects (3.8%, or £10.5m), Wave and Tidal (1.9%, or £5m), Advanced metering and control (1.5%, or £3.9m).

18 House of Lords Written Parliamentary Question: 7 October 2002. The same answer suggested that annual expenditure in 2004 would rise to £170m.

19 In March 2002 the government launched the first phase of the ‘Major PV Demonstration Programme (MPD)’. The £20million first phase (which runs over three years, to 2005) offers grants of around 50% of PV costs to individuals and organisations installing PV systems. See para 4.55 of the Energy White Paper.

20 Grants are available to landowners to grow crops such as short rotation coppice and miscanthus for heat, CHP and electricity generation. Landowners must have agreement with local energy producers to supply harvested crops to quality. (Source: DTI Renewables website).

21 The amount taken the Pre-Budget Report refers to the Community and Household Grants scheme, or ‘Clear Skies initiative’, a DTI programme which aims to give homeowners and communities a chance to become more familiar with renewable energy by providing grants and advice. ‘Homeowners can obtain grants between £500 to £5000 whilst community organisations can receive up to £100,000 for grants and feasibility studies.’ (source: DTI Renewables website). The scheme is run by the Building Research Establishment. The amount taken from the Energy White Paper refers to the ‘Community Energy’ programme, which has total funding of £50m over two years (2002-2004). (Source: DETR News Release 237, of 26 April 2001).
through the Carbon Trust) and the energy efficiency component of UK Climate Change Programme is expected to deliver approximately 50% of GHG emission reductions.\textsuperscript{21} The Energy White Paper states that ‘energy efficiency is likely to be the cheapest and safest way of addressing all objectives’. The PIU recommended a 20% increase in energy efficiency by 2010 and a further 20% increase on top of that by 2020. The Government adopted this as an ‘aspiration’ rather than a formal target.

<table>
<thead>
<tr>
<th>Energy Efficiency</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal target exists.</td>
<td>Energy White Paper states that EE is ‘likely to be the cheapest and safest way of addressing all objectives’.</td>
<td>£150m per year (Friends of the Earth estimate).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>£50m per year of Carbon Trust grant expenditure of (funded through proceeds from the climate change levy).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Saving Trust expenditure of approximately £30m per year.\textsuperscript{22}</td>
</tr>
</tbody>
</table>

**Fuel Poverty**

Tackling Fuel poverty is one of the four energy policy goals in the Energy White Paper. A long-term target is set out within the White Paper, which builds on the more specific and shorter-term targets contained with DEFRA and DTI’s PSA targets for 2003-2006. A ‘fuel poor household’ is commonly defined as one which needs to spend more than 10% of its income on fuel use to heat its home to an adequate standard of warmth.

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>To eliminate fuel poverty by 2016-2018.</td>
<td>Contained within the ‘UK Fuel Poverty strategy’.\textsuperscript{23} This interim target is contained within DEFRA’s PSA target. A related DTI PSA target mentions the need to ‘achieve fuel poverty objectives’.</td>
<td>Fuel Poverty Advisory Group (FPAG) estimate that current programmes, including local authority expenditure, amount to approximately £300m per year. They estimate that this is comprised of: ▪ Over £200m between 2000-2002 on ‘Warm Front’ (previously called the ‘Home Energy Efficiency Scheme or ‘HEES’). ▪ Approximately £50m on energy efficiency commitments for priority groups. ▪ Approximately £50m on local authority housing programmes to promote energy efficiency.</td>
</tr>
<tr>
<td>To reduce fuel poverty among vulnerable households by improving the energy efficiency of 600,000 homes between 2001-04.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.2 Market Stimulation

In addition to the direct and financial interventions described in the previous section, the Government takes further action to stimulate the market to move towards achieving its targets. This is in part due to the fact that a number of the instruments employed to reduce emissions have few if any costs to the public purse. For example, the Renewables Obligation and the Energy Efficiency Commitment are both based on the concept of ‘obligation and trade’ and pass costs onto the customer.

\textsuperscript{21} Energy White Paper: Paragraph 3.5.
\textsuperscript{22} Energy Saving Trust Three Year Business Plan 2002-05’: Appendix 1 (‘Government Funded Activities: Targets, Indicators and Outturn 2001-02)
\textsuperscript{23} The UK Fuel Poverty Strategy (November 2001).
The actions set out below are not an exhaustive list of the steps taken by Government to create vibrant markets which will help to achieve the energy targets. The list does seek, however, to cover the most prominent and important actions. They necessarily involve a wide range of groups, organisations, and individuals. Several are not focused specifically on the energy industry, but have wider application.

**Renewables**

To develop the market for renewables, the government:

- Gives incentives for generators to supply progressively higher levels of renewable energy, through the ‘Renewables Obligation’ (introduced in England and Wales in April 2002). The Energy White Paper commits the government to maintaining ‘the level of support it provides until 2027’ (para. 4.12). The Obligation will be reviewed in 2005-2006, at which time further targets could be considered. The Government argues that it is too early to see the effects of the RO, given the lead times associated with renewables power plant (supplementary written evidence to EAC 8). In order to provide a stable and long-term market for renewable energy, the Obligation will remain in place until 2027. Yearly targets have been set up to 2010/2011, when they reach the 10% target and are unchanged thereafter.

- Exempts renewable energy from the Climate Change Levy.

- Has provided the strategic framework for offshore wind.

- Has created (in March 2002) ‘Renewables UK’ – a body that will support renewable energy in domestic and international markets, and help to secure benefit to UK industry in the renewables market.

**Energy Efficiency**

To promote energy efficiency, the government, as part of its strategy for moving the burden of tax from ‘beneficial’ activity such as employment to ‘detrimental’ activity such as pollution:

- Recycles revenue raised by the climate change levy (CCL) back to business, primarily through the 0.3 percentage point reduction – worth around £1.7 billion in 2003-04 – in employers’ national insurance contributions introduced with the levy.

- Exempts combined heat and power from the climate change levy – since April 2003. According to the CHPA, this is worth approximately £15m a year to the CHP industry, and possibly twice that by 2010.24

- Provides support through 100% enhanced capital allowances for investment in certain energy efficiency technologies. The cost to the Exchequer of these measures was estimated in the 2002 and 2003 Budgets as £45 million in 2003-04.

- Introduced the ‘Energy Efficiency Commitment’ (EEC) for domestic energy suppliers. The Commitment runs to 2005. Each domestic supplier has an energy saving obligation or target which they can meet by encouraging  

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householders to install energy saving measures. At least half of the target must be met in households whose occupants are either on a low income or disabled.25 There is a commitment in the White Paper26 to consult on expansion of the EEC to run from 2005 to 2008.

- Introduced the UK Emissions Trading Scheme, enabling participating organisations to trade emission allowances resulting from their CO₂ reductions. (The launch of the scheme was accompanied by the provision of incentive payments to direct entry participants, worth £215m over the first five years of the scheme.) It is planned that from 2005, emissions from the energy supply industry and other industry sectors will be covered by the EU emissions trading scheme.

- Is planning amendments to the Building Regulations. The Government have made clear their intention to bring forward to 2005 the next revision of the building regulations, with a view to raising standards for energy efficiency in new buildings and refurbishments.27

- Is encouraging actions to improve product-related energy efficiency, through standards, labelling, or market transformation.

- Is considering the use of economic instruments to overcome market failures which prevent improvements in household energy efficiency.

**Fuel Poverty**

In addition to Government-sponsored fuel poverty reduction programmes, additional money is provided by energy companies, charitable funds and neighbourhood renewal funds. The Government supports such action wherever possible.

### 2.1.3 Institutional Issues

A number of more fundamental issues also arise in seeking to meet the stated goal of putting the UK energy system onto a more sustainable path. We have called these ‘institutional’ issues, in which the Government has a central role but which are not tackled through the existing regime of capital grant spending, or solely through the creation of market incentives.

This section is intended only to highlight important factors affecting the context in which public expenditure on environmental protection takes place. It is not within the scope of this report, and therefore not the aim of this section to discuss these complicated issues in detail, nor to make recommendations on how to tackle them. Public spending, which does not take account of these issues, however, is not likely to be fully effective.

The key issues are briefly summarised below.

- The New Electricity Trading Arrangements (NETA): The introduction of NETA in April 2001 was widely perceived to impose extra costs on small-scale and intermittent generators, including those using renewables or CHP. While debate continues over the extent to which this was, and still is, the case, it is clear that the regulatory framework for the operation of energy markets has and will have an enormous influence over whether and how much decarbonisation of energy supply and use takes place.

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25 Energy White Paper: paragraph 3.32
26 Energy White Paper: paragraph 3.33
27 Energy White Paper: paragraph 1.31, and paragraph 3.16.
Infrastructure Investment: The need for ‘major investment...in the fuel delivery infrastructure’ is commented on in the Energy White Paper. This need reflects the current configuration of the UK supply system, which was designed to deliver power from large scale power stations to dispersed demand points. The system requires change to enable renewable energy to make a significant contribution to the UK generation base, which is often suitable for supplying local small-scale consumption rather than for meeting distant large-scale demand. Renewable energy sources are also likely to be situated in areas which are remote from population centres, or offshore.

Planning: The Energy White Paper comments on the need for a planning system which is ‘more helpful to investment in infrastructure and new electricity generation, particularly renewables’.

Demand: The UK government has been working to decouple economic growth from energy use for some time and has been largely successful in this. The Energy White Paper comments on the need to ‘continue with and accelerate this trend’ (paragraph 1.27). Much will depend on the promotion of energy efficiency measures.

Managing broader sectoral impacts. A particularly important area for action is transport, which has shown the fastest growing rate of CO2 emissions. In response, the Government have launched a ten year plan for transport, projected to deliver savings of 1.6MtC by 2010. EU-level voluntary agreement on CO2 from cars, backed up by changes to company car taxation and vehicle excise duty were projected to offer a further saving of 4MtC. Measures to reduce and manage waste (see the separate section on Waste in this report) also have implications for GHG emissions, such as those arising from the installation of methane control and energy recovery systems at landfill sites.

2.1.4 Assessments Of Adequacy

Our research has found a number of comments about the adequacy of specific aspects of the Government’s energy programme. These tend to be comments on specific elements of the programme rather than on energy policy spending in its entirety. This is illustrated in the summary of responses to the consultation on the draft UK Climate Change Programme. This makes clear that a variety of general and strategic points were raised by respondents, but that virtually no comment appears to have been made on the particularities of government spending, save for a call for additional funding to be made available for awareness campaigns.

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28 Energy White Paper paragraph 1.17.
29 Energy White Paper paragraph 1.40.
30 Since 1970, overall energy consumption has increased by 15%, while the size of the economy (i.e. the GDP) has doubled – this indicates that economic growth has been relatively decoupled from energy use. The ratio of energy consumption to GDP (known as ‘Energy Intensity’) is an internationally recognised measure of the level of energy efficiency achieved in a country. The UK has managed to reduce this by an average of 1.8% per year for the last 30 years. (Source: paragraphs 1.27 and 3.3 of the Energy White Paper). For business sectors, energy intensity is the energy used per unit of gross value added. For the domestic sector, it represents the energy consumed per household.
31 Energy White Paper paragraph 1.27
33 Annex A to the UK Climate Change Programme (pp.176-178)
In relation to GHG reduction, Government figures suggest that meeting the 2008-
2012 Kyoto reduction target is well within the UK’s grasp, given the changes which
have already occurred in the domestic fuel mix. The longer-term prognosis, for
performance against 2020 targets and beyond, is far less favourable, however. In
relation specifically to CO$_2$ emissions, the Sustainable Development Commission
audit of the Government Climate Change Programme concluded that ‘without further
measures, the UK will fall well short of the Government’s goal of reducing carbon
dioxide emissions by 20% from 1990 levels by 2010.’

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyoto target GHG reduction</td>
<td>Unclear. Sum of identified annual spend on renewables and energy efficiency is £220-240m.</td>
<td>No comment found.</td>
</tr>
</tbody>
</table>

On renewables, the UK has significant renewable energy resources (including a third
of Europe’s offshore wind power resource). However, renewable energy contributed
only 3% of the UK’s electricity generation in 2002. A number of bodies and
analysts have commented on the significant challenge in meeting the renewable
ergy targets. The Environmental Audit Committee, for example comment on the
failure to reach the 2003 target. In the light of experience, the committee also
comments on it being ‘highly unlikely the UK will meet the 10% renewables target’.
The committee does not link this solely to lack of government funding, but also to the
absence of a coherent implementation plan underpinning the strategy. Other
independent commentators have commented similarly. According to one, as 95% of
the UK’s CO$_2$ emissions derive from the energy system, ‘it is inconceivable that a
10% target for renewable electricity by 2010 can be achieved with ‘business-as-usual
policies’.

The Environmental Audit Committee (EAC) does express serious concern about the
total amount of renewables funding and how that funding is allocated. The committee
contrasts the £350m committed by the UK government on renewable energy (over
four years) with the far higher figures provided for supporting the nuclear industry, in
the distant past and recently.

The EAC also expresses concern about the allocation of funding in support of
renewables, fearing that there is too much Government reliance on wind energy
alone. The Committee comments on the lack of support for biomass, and also on the
inadequacy of the Renewables Obligation as the main vehicle for stimulating
technologies which are less economically viable than wind. It appears from evidence
submitted to the committee that no grants were made to support bioenergy in 2002-
03. (para 32).

The Committee also contrasts UK spending on solar with that spent in other
countries. The UK’s Solar MDP (Major Demonstration Programme) is forecast to
deliver 9MWp by 2005. This contrasts with Japan, which had achieved 400Mwp by
2001, and Germany which had achieved 200MWp by 2002. The Environmental
Audit Committee points to the example of Germany where 650million euro has been
provided in support of the solar roof programme over the period 1999-2003.

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34 Sustainable Development Commission written evidence to the Environmental Audit Committee 8th report of session 2002-03. Volume 2.
35 Chart 1.4 of the Energy White Paper: Section 1, page 10.
37 C. Mitchell ‘System change – drivers and requirements for a sustainable energy policy’
38 EAC Fifth Report: Renewables and the PIU review. (HC582-I of session 2001-02.)
Solar Century, one of the organisations which submitted written evidence to the Environmental Audit Committee inquiry into the White Paper, pointed out that more applications were approved in the German programme in just one month than the predicted entire total for the three year UK demonstration programme (para 33). In their view, the UK solar programme is insufficient: ‘The Demonstration Programme is just that. It has limited goals. It is in effect a 3 year programme to see how a solar PV market in the UK might develop in the longer term rather than a serious attempt to work with the industry (both UK and global) to build a market in the short term.’

In terms of the implications of this, Solar Century argue for a significantly higher level of consistent financial support: ‘Solar Century continues to remind Ministers and officials that in the absence of other policy measures, (eg. building regulation reform), a 100,000 roof or 200 MWp market by 2012 will require a grant programme totalling £150 million or an average of £15m per annum. The DTI regularly use this figure in Parliamentary written answers and debates as an indication of what might be possible in the medium-long term’.

The EAC concludes, following the Energy White Paper, that: ‘We are concerned that the level of resources made available in the UK are inadequate and that the DTI’s vision is not reflected in Treasury funding. Additional resources for both renewables and energy efficiency should be made available as part of Spending Review 2004.’

This conclusion is supported by the Environmental Services Association (the ESA). They comment that ‘the Energy White Paper does not provide an adequate financial framework for accelerating deployment of new renewable capacity. The Government must bring forward the review of the Renewables Obligation to no later than 2004-2005…and set the percentages for the RO on a 10 year rolling basis to provide certainty each year on the proportion of renewable capacity that will be obligated in 10 years time’.

The comments above focusing on the adequacy of government expenditure are summarised in the table below:

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure £</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% of energy supplied by renewable sources by 2010.</td>
<td>Approximately £90m per year.</td>
<td>Suggestion that the UK solar programme will require expenditure of £15m per year.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Considerably less public support than provided previously to nuclear energy, according to the Environmental Audit Committee.</td>
</tr>
</tbody>
</table>

**Energy Efficiency**

Although there is no formal target for energy efficiency, a number of commentaries point to the need for much more effective policy intervention in this area. The Energy White Paper itself compares campaigns to promote condensing boilers in the UK and

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39 Solar Century written evidence to the Environmental Audit Committee: 8th report (session 2002-03. Volume 2)
40 EAC 8th report. Paragraph 23.
41 ESA written Memorandum to the EAC 8th report.
the Netherlands (Box in Paragraph 3.13). The UK’s campaign was notably less successful than that in the Netherlands. There is evidence that the UK public lacks awareness on energy efficiency issues. The White Paper recognises that although campaigns to promote this do exist, other measures could also be taken (for example, customer feedback on energy bills, work with regional authorities to develop regional action plans for energy efficiency etc).

In relation to Combined Heat & Power, the CHP strategy prepared by DEFRA, which stated that the Government would reach its target of 10GWe by 2010, has been strongly criticised by the CHP industry. The Combined Heat and Power Association (CHPA) have recommended the creation of a ‘CHP Commitment’ similar to that for other low carbon technologies such as renewables.42

In relation to energy efficiency in the household sector, the Energy Saving Trust (EST) has projected that reductions in overall energy efficiency between now and 2010 will be ‘modest’ without further Government intervention, despite technological advances and increasing concern about the impact of climate change. The Trust has identified a programme of home energy efficiency measures which it suggests would reduce annual CO\textsubscript{2} emissions by 7.6MtC by 2010. This is almost four times the emission reductions which it believes would happen without policy changes. The EST suggests that investment of up to £1bn annually would be required for household energy efficiency to meet this target. It argues that funding for this investment should come from a variety of sources, including normal commercial activities, new measures to promote more efficient products and appliances, and the provision of incentives to households to invest in energy-saving activities and products. Given this investment, the Trust suggests a sum of approximately £250m per year would be required, which could be raised through a programme of obligations on energy companies. The Trust argues that the necessary investment would be equivalent to approximately £5-6 per customer per year in each of gas and electricity – ie. a total of £10-12 per customer per year over the period to 2010.43

There are few other specific comments on desirable future levels of government spending on energy efficiency. The table below brings together such comments as have been found:

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure £</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal energy efficiency target.</td>
<td>£130-150m per year.</td>
<td>‘It is clear that additional public funds and fiscal measures will be needed to ensure the effective delivery of the targets for installer training and targeted consumer advice’. (Energy Saving Trust submission to the Environmental Audit Committee).</td>
</tr>
</tbody>
</table>

Fuel Poverty

Evidence suggests that progress is being made towards eliminating fuel poverty. The number of households in fuel poverty in the UK has fallen to 3 million from 5.5 million since 1996. However, the Fuel Poverty Advisory Group (FPAG) has

\footnote{42 CHPA Press Release (15 May 2002): ‘One Giant Leap For Government: One Small Step For Climate Change?’ This idea is also contained within the CHPA’s ‘UK CHP Strategy’ (June 2001).}

\footnote{43 ‘Achieving the Challenge: Potential Savings From Energy Efficiency To The Year 2010’ (The Energy Saving Trust)}
commented in their first annual report on the need for increased funding\textsuperscript{44}. In section 7 of their report, on Resources, the group comments: ‘Our judgement is that the resources have to be increased by at least 50% to meet the Government’s targets over the whole decade, and this implies somewhat more than 50% in the second half of the decade. It is recommended that DTI/ DEFRA should now provide more thorough estimates of the costs or at least of a range of possible costs of meeting the targets’.

FPAG’s cost estimates are based on the English Housing Condition survey and Warm Front data which suggest that the average cost of eradicating fuel poverty is £2000 per house, and that there were about 2.3 million vulnerable households in England in 2000. Details of the assumptions behind their estimates are provided within their report. Their analysis is supported by academic work.\textsuperscript{45}

According to FPAG, the support of the ‘Warm Front’ programme has continuing potential: ‘In terms of overall budget, the level of grant assistance and the measures available, Warm Front has the potential to make a significant contribution to the eradication of fuel poverty’. This optimism, however, is tempered by their disappointment with the recent cut by DEFRA of Warm Front’s budget, from £167m in 2002-03 to £156m in the current year. (Memorandum from the Parliament Warm Homes Group to EAC).

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure £</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>To eliminate fuel poverty by 2016-2018.</td>
<td>£300m per year, projected to £3bn over the next ten years to 2010.</td>
<td>Estimated shortfall of £1.6bn over the 10 years 2000-2010, on the basis of continued current expenditure of approximately £300m per year, set against an estimated need of £4.6bn over the same period.</td>
</tr>
</tbody>
</table>

2.1.4 Public Spending Proposals

Notwithstanding the range of specific comments highlighted in the previous section on the adequacy of Government spending, our research has found very few examples of costed alternatives.

The areas below are those where we have been able to find alternative spending proposals, or where commentators have specifically contrasted expenditure spending on environmental protection with expenditure on other policy areas.

- Approximately £350m per year invested in environmental protection, compared to the billions of pounds spent on the nuclear industry (House of Commons Environmental Audit Committee.) The Committee does not provide an estimate for the level of public financial support for the nuclear industry, but in 2002 provision for expenditure of £48 billion was made in respect of decommissioning of existing nuclear stations alone\textsuperscript{46}. A

\textsuperscript{44} Fuel Poverty Advisory Group (for England): First Annual Report 2002/3.’
\textsuperscript{46} DTI (Department for Trade and Industry) 2002a Managing the Nuclear Legacy: a Strategy for Action, Cm 5552, July, DTI, London, para.1.14, p.11
Ministerial statement from June 2003 reiterated that the Government’s ‘underlying commitment [of contributing to nuclear costs] remains the same as it was last year, and that our estimates of the cost to government (£150-200m a year on average for the next 10 years falling thereafter) is unchanged’. Friends of the Earth, Greenpeace and SERA (the Socialist Environment and Resources Association) have called for a stop on the reprocessing of spent nuclear fuel – providing savings, FoE argue, of over £460m.

- A doubling (at least) of annual spending dedicated to solar power (Solar Century) – requiring at least £15m expenditure per year for the next 10 years.
- Additional spending of £1.6bn over ten years to achieve the fuel poverty targets (the Fuel Poverty Advisory Group)
- An investment programme in household energy efficiency of up to £1bn per year to bring 7.6MtC emission savings by 2010 (The Energy Saving Trust). The precise proportion of this ‘investment’ which would come from public expenditure is not clear but the principal route for public expenditure of this kind would probably be an expansion of the ‘Warm Front’ scheme. In the analysis below, therefore, this additional spending has been captured within the proposal for additional spending to tackle fuel poverty.
- A climate change communications project, seeking in its words to ‘increase public understanding of the threat and causes of climate change and of the solutions that are being developed to tackle it, and to build public support for these solutions’. The proposal is for £6.9m on advertising related costs plus £0.9m on core administrative costs.

Other areas where it seems likely that substantial government financial (and perhaps other types of support) will be required are set out below. Financial support could be provided through a general allocation to renewable technologies without allocating to specific areas. However, we have suggested specific allocations, based on ideas of the particular technologies where support is needed.

- Onshore wind: Grants to encourage (perhaps as matched funding) local community investments in onshore wind farms, on the basis of model partnership agreements. Suggested grant level: £5 per installed kW capacity. A 3 MW wind farm would then benefit from £15,000 public grant. If match-funded this would then secure an extra £15,000 in local investment. Total cost for 5GW capacity by 2010: £25 million.
- Offshore wind: Higher capital grants will be required to bring forward the substantial private investment that will be needed to develop this resource significantly by 2010. This appears to have been recognised by the Government, with the DTI recently providing new grants totalling £59m to six new offshore wind developments with a combined capacity of 530MW. Suggested extra amount: £100 per installed kW of capacity. Spending over 2005-10 to achieve 5GW of capacity: £500 million.

47 The Climate Change Communications Project: A Proposal for a new campaign to engage the public in the development of a low carbon future for the UK. (June 2003)
48 DTI Press Release ‘Green Light for Renewables’, 28.10.03
- Energy crops: Grants are required for the establishment of the collection and distribution infrastructure in relation to existing biomass energy from forests and fields (which, as a fuel, is already competitive with fossil fuel alternatives). We suggest a challenge fund of £10 million per year over 2004-06.

- Marine renewables: Further grants are required for research, development and demonstration of various technologies in this area, in order to hasten their deployment. We suggest an additional £10 million per year over 2004-06.

Other policy commitments which do not entail public spending, but which seem important if Government targets are to be met:

- Increase the Renewables Obligation by annual increments from 2010 to reach 20% of electricity generation by 2020.

- Introduce a CHP Obligation, similar to the Renewables Obligation, to ensure that the 10 GW target by 2010 is met.

- Increase the Energy Efficiency Commitment as suggested by the Energy Saving Trust to a level where a typical consumer would pay £5-6 per year for each of gas and electricity.

<table>
<thead>
<tr>
<th>Proposal</th>
<th>New or Additional Cost Estimate</th>
<th>Originator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main target-oriented spending</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>£160m per year additional spending to meet fuel poverty targets (2000-2010).</td>
<td>Fuel Poverty Advisory Group.</td>
</tr>
<tr>
<td></td>
<td>£7.5m per year additional spending (2004-2010) in support of solar power.</td>
<td>Solar Century.</td>
</tr>
<tr>
<td></td>
<td>£5m per year (2005-2010) in support of onshore wind.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>£100m per year (2005-2010) to support offshore wind.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>£10m per year (2004-06) to support energy crops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>£10m per year (2004-06) on marine renewables.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>£7.8 million per year (2004-06) on climate change communications.</td>
<td>The Climate Change Communications Project.</td>
</tr>
<tr>
<td><strong>Other suggested initiatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase Renewables Obligation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduce a CHP obligation.</td>
<td>CHPA.</td>
</tr>
<tr>
<td></td>
<td>Increase the Energy Efficiency Commitment to £5-6 per customer per utility per year.</td>
<td>Energy Saving Trust.</td>
</tr>
</tbody>
</table>
The suggestions above amount to a total spending proposition of approximately £300m per year.
2.2 BIODIVERSITY

2.2.1 Government Targets And Current Spending

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
</table>
| ‘To care for our natural heritage, make the countryside attractive and enjoyable for all, and preserving biological diversity’. | DEFRA’s PSA target 3.  1992 Convention on Biological Diversity\(^{49}\) (implemented in the UK Biodiversity Action Plan, specifying 436 individual action plans to promote the sustainable recovery of priority species and habitats.  2002 ‘Biodiversity Strategy for England’ sets out necessary policy actions, over a five year horizon\(^{50}\). This has been adopted as one of DEFRA’s key projects and programmes.\(^{51}\) | There is no official measure of spending in the biodiversity sector in the UK. The total figure provided in the 2002 Biodiversity Strategy for England comes to £287.3m per year. This is made up of:  • £60m grant-in aid to English Nature (EN) (budgeted annually). This covers EN core costs as well as programme costs.  • £114m for agri-environment schemes designed to conserve and enhance the natural beauty of the countryside (rising to £174m in 2006-07). This covers objectives wider than biodiversity alone (such as landscape access).  • £8m of EC contributions to projects approved under the EU LIFE/Nature programme over the past three years. (It is not clear, however, how these relate specifically to biodiversity).  • £40m (approximately) on conservation-related activity spent by the Forestry Commission and the Environment Agency. The Forestry Commission’s contribution refers principally to its management of the Woodland Grant Scheme and the Farm Woodland Premium Scheme.  • £1.3m allocated to projects benefiting biodiversity from the Environment Action Fund in 2002-03.  • £64m on research carried out by DEFRA to develop more effective conservation measures.  

The RSPB estimates total funding for Biodiversity in England at up to £250-300m per year (which excludes agri-environment schemes, but includes funding from charities, see Annex 1).\(^{52}\) 

The general target above is supported by three more specific targets dealing with particular facets of biodiversity. All derive from PSA target 3. In DEFRA’s description of its own objectives set out in its annual reporting, these targets form part of its ‘objective 1’, which seeks ‘to protect and improve the rural, urban, marine, and global environment…’ Allocating levels of expenditure to these more detailed targets is more difficult. Blocks and sources of funding are placed against the relevant specific target as far as possible in the tables below.

\(^{49}\) Article 2 of the Convention defines biodiversity as ‘the variability among living organisms from all sources, including \textit{inter alia}, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, this includes diversity within species, between species, and of ecosystems’.

\(^{50}\) Working with the Grain of Nature: A Biodiversity Strategy for England (DEFRA. October 2002).

\(^{51}\) Minutes of England Biodiversity Group Meeting (4 September 2003)

\(^{52}\) The slightly lower estimate than that shown in the Biodiversity Strategy reflects the fact that spending totals mentioned are not focused exclusively on biodiversity actions. In addition, in RSPB’s view, much of this money is dedicated to the management and protection of existing biodiversity, and further funds are required to achieve improvements in biodiversity.
Farmland Birds

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversing the long-term decline in the number of farmland birds by 2020, as measured against underlying trends.</td>
<td>'Populations of wild birds' is one of the 15 Headlines indicators in the Government’s Sustainable Development strategy.</td>
<td>Spending in this area is derived principally from agri-environment schemes, and is of the order of £114m-156m per year. According to Government estimates (quoted above), £114m is currently spent on agricultural payments. £156m represents an RSPB estimate of 2003-04 spending dedicated to environmental schemes within pillar 2.</td>
</tr>
</tbody>
</table>

Designated Sites

There are two aspects to this target. One is linked specifically to the state of UK wildlife sites and the other to the creation of the Natura 2000 network, a legal requirement under the EC Habitats directive.

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bringing into favourable</td>
<td>The extent and management of Sites</td>
<td>English Nature spends 51% of its budget, some £37.58m, on designated sites. This includes £10.8m</td>
</tr>
</tbody>
</table>

---

53 Data used to calculate the long-term trend in farmland bird populations are from the Breeding Bird Survey, carried out by the British Trust for Ornithology (BTO), the Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservation Committee (JNCC). It has now replaced the Common Bird Census. The index of farmland bird populations is made up of 20 species. The data are a National Statistic and are updated annually (although there will be no figures for 2001, when Foot and Mouth Disease prevented access to farms). Research completed in 2001 by the BTO and RSPB produced an agreed methodology to measure the annual underlying trend in populations. The methodology enables the production of an indicator showing the long-term trend based on individual species’ indices.

54 Quality of Life Counts: Indicators for a strategy for sustainable development in the UK: a baseline assessment'. (DETR.1999). The specific target is to reverse the long-term decline in populations of farmland and woodland birds. These have generally been declining since the mid 1970s, with populations of some farmland birds such as the song thrush and bullfinch falling by more than half.

55 According to RSPB, the anticipated budget for agricultural support under the CAP in England for 2005/06 is £1,467m in direct (pillar 1) payments, and £297m in 2005-06 in the Rural Development Plan (pillar 2). Some pillar 2 money is spent on non-environmental objectives (eg. processing and marketing produce and training), but about 60% is currently available for ‘environmental’ schemes. Spending in 2003-04 therefore amounts to 60% of £2258m, or £156m in 2003/04. On the same assumptions, spending would equal £178m in 2005-06. (It will, however, cover a wider range of initiatives than the target relating to farmland birds.)

56 'Favourable' condition means that the sites features are in favourable condition or recovering. Given the long (biological) recovery periods for sites, the possibility of 95% of the SSSI area reaching favourable condition by 2010 is very low. Therefore, including ‘recovery’ sites in this definition is a weakening of the target, but gives a realistic chance of the target being met. However, the ‘recovery’ category does not just require improvement; it means that the necessary management measures are in place for the site to reach favourable condition.

57 DEFRA provides grant-in-aid to English Nature of approximately £61m (2002-03), rising to £63m in 2003-04. Of this, nearly £3m is passed on to the Joint Nature Conservation Committee, which coordinates nature conservation policy at UK level. (source; DEFRA Departmental Report 2003, page 48).

58 The ALSF came into force in April 2002. Its Sustainability Fund grant scheme is administered jointly by English Nature, the Countryside Agency and English Heritage. English Nature’s remit covers grants which will enable local communities to increase biodiversity, conserve geological features, and address the threat from old, unused mineral...
Condition: 85% of all nationally important wildlife sites by 2010.

of Special Scientific Interest (SSSIs) is one of the UK’s core 150 indicators of sustainable development.

spent through the ‘Wildlife Enhancement Scheme’ (on both site management and scheme administration).

The Aggregates Levy Sustainability Fund (ALSF) of £9 million forms a two-year grant scheme up to March 2004. This money can be granted to activities that will assist the condition of SSSIs, but this is only one objective of the scheme. (It supports habitat recreation as well, which is essential for biodiversity). EN will be able to administer £4.2m from the ALSF in 2003/04.

Creation of nature conservation network – ‘Natura 2000’, involving the designation of ‘Special Areas of Conservation’ (SACs) and ‘Special Protection Areas’ (SPAs).

Legal obligation to implement the EC Habitats Directive and the Wild Birds Directive.

The Markland report on financing the Natura 2000 network identified £504m of anticipated spend in the UK over a 10 year period (Jan 2003 – Dec 2012). This is equivalent to £32m per year.

Access to Land

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening up public access to mountain, moor, heath and down, and registered common land by 2005.</td>
<td>DEFRA PSA Target 14 (within Objective I).</td>
<td>No information on clearly or separately identifiable public spending in this area.</td>
</tr>
</tbody>
</table>

2.2.2 Market Stimulation

The Biodiversity Strategy for England shows the Government’s recognition of market failures which can contribute to biodiversity degradation. It cites (chapter 10) the following problems:

- Market price signals undervaluing biodiversity, leading to allocations of resources which lead to degradation.

- The failure of economic decision makers to take external costs and benefits, such as nutrient and pesticide pollution from agriculture, or point source water pollution, into consideration.

Permissions. They have sought to fund projects covering topics such as habitat restoration and creation, species recovery, local biodiversity action plans, and so on. The fund has been extremely popular, to the extent that they have ceased to take new applications.


60 92/43/EEC and 79/409 EEC, respectively.

61 Using the exchange rate at the time the information was gathered of €1 = £0.64. (Source of original UK data: Trevor Salmon, European Wildlife Division, DEFRA, Bristol – see DEFRA 2002b).
The absence of property rights relating to biodiversity resources leads to there being inadequate incentives for their sustainable use and to consequent unsustainable practices (such as over-fishing).

Information failure, so that the full value of biodiversity is not known.

The fact that providers of biodiversity as a public good are often unable to realise the value of such provision.

The strategy also points out that biodiversity degradation can also result from policy and intervention failure, as with the Common Agricultural Policy (CAP).

The Government’s response to these market failures is to address them as far as possible by better regulation and other individual or combined measures such as voluntary measures and economic instruments. Two important sets of actions relevant here are discussed below, namely CAP reform and the use of economic instruments.

The July 2003 CAP reform agreement presents the opportunity to channel extra funds into rewarding agricultural practices that help biodiversity. (It is worth recalling that over 70% the UK’s land surface is used for farming.) Action to help meet the objectives of protecting and enhancing biodiversity in designated conservation sites and protecting farmland birds can be taken through:

- Tougher cross-compliance to go with decoupled area payments, meaning that rules could be strengthened to require higher minimum environmental standards of farmers in return for agricultural payments.
- Greater use of the available mechanisms within the CAP ('envelopes' and 'modulation', see annex 2), to divert more funding towards environmental measures.
- Allocating more funding to agri-environment schemes.
- Changes to the rules governing compulsory set-aside.

The second area of importance in addressing market failures is the use of economic instruments. The biodiversity strategy recognises that identifying and implementing taxation and other measures has the potential to send the right market signals. It highlights the need to ‘explore the use of economic instruments to correct market failures and to prevent biodiversity degradation’. It refers to the variety of current measures which have indirect biodiversity impacts, including transport taxes, the climate change and aggregates levies, and the landfill tax. In addition to these tools, hypothecating revenue from environmental taxes in the agriculture sector to fund agri-environment measures is a possibility. The 2003 Budget stated that the Government is considering options to use economic instruments to address the most pressing environmental issues associated with agriculture.

Discussions have also been long-held on the possibility of a pesticides tax, and more recently of a nutrient tax. Each is the subject of economic instruments in some other EU countries. Potential revenue from them is difficult to estimate. It has been estimated that a pesticides tax could raise £70m - £200m per year (ECOTEC). Instruments analysed by RPA (2002) for the control of nutrient pollution were mainly self-financing, meaning revenues would fund associated policy actions. They were not predicted to generate any revenues to be spent in other policy areas (either on
agriculture or other Government policies). However, it would be possible to set a nutrient tax or charge rate that would raise revenue for other Government expenditure. Introducing a tax with a rate at this kind of level would have greater potential acceptability if its revenues were hypothecated to the agricultural sector.

According to the Biodiversity Strategy for England, approximately '£11m has been spent on biodiversity-relevant projects' with funds from the landfill tax. The Landfill Tax Credit Scheme, which has recently been the subject of consultation and reform, has the potential to focus more on biodiversity objectives. The 2003 Budget introduced a biodiversity objective for the credit scheme, and there is potential for more allocation of revenues from the tax to support waste minimisation and local community environmental schemes.

Notwithstanding this range of possible economic policy instruments, there is recognition of the continuing need for direct and indirect public funding of biodiversity conservation. The Government has made clear since the publication of the 1994 UK Biodiversity Action Plan62 that action is ‘in no sense solely a matter for Government’ (paragraph 1.33). It has emphasised the need for an approach founded on collaboration and partnership with others, such as voluntary groups, landowners, and the public at large. It therefore created the Biodiversity Action Plan Steering Group following the publication of the 1994 plan, and has continued to work in partnership with other organisations. The 2002 Biodiversity Strategy for England reiterates the ‘partnership approach, which is vital to successful implementation’ (Executive Summary). It also mentions the need to continue to promote ‘a financial and cultural climate in which funding for biodiversity by the private sector and NGOs is encouraged and complements that of the public sector’. (page 78) Ideas being considered include promoting measures to encourage charitable giving for biodiversity initiatives.

In fact, biodiversity is an area in which private and voluntary contributions provide an important source of funding. The Biodiversity Strategy for England cites estimates of £485m of expenditure per year by conservation agencies at the beginning of the 1990s.

2.2.3 Institutional Issues

The Biodiversity Strategy for England highlights a number of priority areas for work on economics and funding which will help to help promote biodiversity conservation and enhancement. The areas are shown below. These represent areas of study and action which do not entail significant public spending in themselves, but will shape the context in which public spending decisions are taken in future.

The priority areas for work identified in the strategy are:

- Understanding better the economic drivers of biodiversity degradation.
- Identifying the main gaps in funding, and the regional variations in costs across countries in the UK.
- Developing costing and appraisal systems and methods which will ensure that biodiversity considerations are adequately reflected in spending reviews and local development priorities. This includes valuation techniques. The strategy notes that preparation of a robust case for biodiversity action is essential given the wide range of competing demands for public funds.

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62 The UK Biodiversity Action Plan (Cm2428. January 1994)
- Ensuring that existing Government funding programmes do not damage, but rather enhances, biodiversity. An important element of this is reform of the CAP (as discussed above) and the Common Fisheries Policy (CFP).

- Identifying and implementing taxation and other measures which will send the right market signals, also discussed above.

In addition to these steps, a number of other institutional or policy issues arise which are relevant to future public spending on biodiversity. The allocation in the 2002 Spending Review of an additional £500m for implementing the recommendations of the Curry report on the future of food and farming is of immediate relevance. According to the Treasury\(^{63}\), the £500m is designed to give DEFRA the resources to implement their core recommendations, providing a package of measures for farmers. This has a number of dimensions but includes a ‘new broad and shallow agri-environment scheme to be piloted over the next two years and then rolled out in full in 2005-06’. It also mentions ‘anticipated expansion to current schemes’ but is not specific about these.

This money remains as ring-fenced Government spending, for schemes such as the Entry-Level Agri-environment Scheme\(^{64}\) (ELS). Some agri-environment measures in the ELS will assist the achievement of biodiversity objectives. However, to deliver the majority of the actions required to achieve these objectives, actions under the proposed higher-level scheme (which will replace the Countryside Stewardship and Environmentally Sensitive Areas agri-environment schemes\(^{65}\)), are likely to be required. The proportion of the Curry-allocated expenditure that supports actions required to help meet biodiversity target will depend on the eventual implementation of the scheme, and the way resources are divided between its objectives.

In the longer term, a range of other steps could be taken which would affect biodiversity spending. These include:

- Making biodiversity an objective for other Government-influenced grant-giving bodies. Possible sources of increased funding include the Heritage Lottery Fund (which was estimated to have spent around £66m on the natural environment), the New Opportunities Fund and the Community Fund. Grants are linked to quality of life factors, so government guidance would be needed to establish the value of biodiversity projects and ensuring that biodiversity expertise becomes embedded within the corporate plans, decision-making frameworks and knowledge bases of lottery boards and committees.

\(^{63}\) www.treasury.gov.uk (Spending Review 2002).

\(^{64}\) The ELS was one of the key recommendations of the Policy Commission (chaired by Sir Donald Curry) on the future of farming and food. The initial idea behind the scheme was that farmers would be rewarded for the continuing stewardship of their existing assets, that all farmers would be encouraged to make environmental enhancements and that they would not have to compete to enter the scheme. Measures envisaged included the creation of conservation headlands, grass field margins, and buffer strips along watercourses, all of which would bring benefits to biodiversity.

\(^{65}\) These two agri-environment schemes were reviewed by the government as part of the preparation of a new Rural Development Programme. See the section of this report on Farming.
- Providing funding from changes to sectoral policies, at no additional cost to the exchequer. In addition to the case of agriculture (discussed above), other sectors where this is possible include forestry and fisheries. The relevant objectives of the EU’s Fisheries BAP need to be implemented at UK/England level, and could be made objectives for CFP funding.

- Funding for BAP targets that can be delivered on the Government estate. This might come from the departments and agencies owning the land area, which accounts for more than 1% of the UK’s land mass. In July 2003, the Government announced targets for the management of its own estate for biodiversity:
  - to assess and improve the condition of Government owned SSSIs, in line with the existing PSA target on their condition.
  - for Government Departments which own sites with significant biodiversity interest to produce BAPs for those sites.
  - to set biodiversity targets in contracts for Government buildings.

- Diverting EU Structural and Cohesion Funds to assist with delivery of the targets for designated sites. For example, Structural Funds could be given an objective to protect natural resources, including support for nature conservation. This is a feature, for example, of some of the Single Programming Documents currently being submitted to the European Commission by accession countries, in which plans have been drawn up for the use of cohesion funds to create Natura 2000 sites and networks.

- Examining opportunities for flood defence schemes to contribute to wetland creation, arising from the Government’s current review of the flood defence programme.

### 2.2.4 Adequacy Assessment

#### Overall Spending on Biodiversity

The UK Biodiversity Action Plan implies costs for habitats work of £75m per year initially, rising to £140m per year by 2010. The costs in the UK BAP are not based on complete (business) plans for the delivery of the objectives involved. Therefore, the full cost of delivering the BAP will be higher. There are no accurate estimates of the total costs of delivering the BAP in the UK. Taking into account the known gaps in the BAP costing information, RSPB has estimated the funding shortfall to be in the range of £100 - 200m per year. An estimate of £100m/yr funding shortfall in England is used for the purposes of this analysis.

A minimum level of coordination required to support Local BAP delivery has a gross estimated cost of £2 million per year. It is recommended that LBAP coordination is funded for at least 5 years (2 years to establish local plans, and 3 years are typically required to start levering private sector resources.

The majority of the BAP costs are for land management. There are overlaps, therefore, between spending on BAP targets and SSSIs. There are also overlaps between SSSIs and agri-environment schemes.

There is overlap between the BAP habitat costs and the costs of conserving more widespread species. In 1999, EN suggested that £30m of the land management expenditure required to deliver the BAP could be supported through agri-environment
schemes (EN undated). The BAP costs exclude agri-environment costs that contribute to species action plans.

Spending identified under the Countryside Stewardship Scheme by English Nature would improve 173,876ha of SSSI by 2005/06, and 213,619ha by 2007/08.

The table below brings together comments on overall levels of public spending on biodiversity:

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure £</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care for living heritage and preserving</td>
<td>Total estimated at £250-287m (derived from</td>
<td>• No specific analyses found in our research.</td>
</tr>
<tr>
<td>natural diversity</td>
<td>government published and RSPB estimates )</td>
<td>• RSPB estimate a shortfall of at least £100m/year for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the implementation of the BAP in England.</td>
</tr>
</tbody>
</table>

**Farmland Birds**

DEFRA’s PSA target on farmland birds will have been achieved when the long-term trend in the index and the associated upper and lower confidence limits (using a 95% confidence interval) are all positive. Latest data shows that the decline in farmland birds has slowed in the last 10 years. DEFRA’s strategy for achieving the target involves halting the decline by 2009, stabilising from 2009-2014, and seeing increases in the trend data from 2014 to 2020.  

DEFRA’s farmland bird delivery plan analyses the links between existing agri-environment schemes and the actions required to achieve the farmland birds target. However, the delivery plan does not currently contain any cost information.

Reversing the decline in farmland birds will require maintenance of suitable arable and improved grassland habitats. For this, EN estimate that approximately 30% of farmland in the UK, outside SSSIs and in addition to BAP objectives, would need to be under agri-environment measures suitable for farmland bird recovery. (NB: this does not imply that all land in each farm is under sympathetic management measures).

Management of 30% of UK farmland would involve about 3m ha of land. Influencing the management of this land through agri-environment schemes would cost around £450m per annum (EN, undated).

The comments and figures relating to spending on achieving the farmland birds target are summarised in the table below:

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Government Expenditure £</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversing the decline in farmland birds</td>
<td>£114-158m per year.</td>
<td>£450m per year (English Nature estimate) to manage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>required proportion of UK farmland</td>
</tr>
</tbody>
</table>

**Designated Sites**

English Nature assessed in 2002-03 that 56.9% of all SSSIs in England were in ‘favourable’ condition, or ‘recovering’. According to EN, this performance looks low

67 DEFRA PSA Target 3(i) Delivery Plan: Defra Conservation Management Division.
when set against the 2010 target of 95% favourable. According to DEFRA, however, this performance is ‘on course’ given the time lag between taking action and seeing results\(^{68}\).

In 2002, English Nature considered that the condition of 84% of SSSIs by area, could be directly influenced by its actions (it works with landowners, occupiers and other public bodies in the area of designated sites). In 2003, it revised this figure. It considers that by area, the favourable condition target for SSSIs can be delivered:

- 75% directly by EN action.
- 8% by other organisations in partnership with EN.
- 17% by organisations over which EN has no direct influence.

In 2002, English Nature assessed the additional funding requirement to achieve favourable condition for the 84% of SSSI area it believed it could influence. The years covered by the 2002 spending round (2003/04 to 2005/06) contained deficits of funds:

- A total deficit of £3.3m for the years 2003/04 – 2004/05 (for which funding levels are already decided), and
- A further deficit of £6.3m for 2005/06 (for which funding will be revised in SR 2004).

For the 2005/06 – 2007/08 spending round EN identified an additional funding need (on the basis of existing policy) of £34.3m. They also give a further requirement of £48.7m for 2008/09 – 2009/10 in order to achieve the 84% figure.

These figures are summarised in the table below, set against approximate levels of current funding:

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Public Expenditure £</th>
<th>Comment on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designated sites.</td>
<td>Total of £41.7m, comprising:</td>
<td>According to English Nature analysis:</td>
</tr>
<tr>
<td></td>
<td>• £37.5m English Nature spend.</td>
<td>- Deficit of £3.3m for 2003-04 - 2004-05.</td>
</tr>
<tr>
<td></td>
<td>• £4.2m per year ALSF contribution</td>
<td>- Further deficit of £6.3m for 2005-06.</td>
</tr>
<tr>
<td></td>
<td>(but just a small percentage of this is</td>
<td>- Additional funding need of £34.3m for 2005-06 to 2007-08.</td>
</tr>
<tr>
<td></td>
<td>dedicated to sites).</td>
<td>- Additional funding need of £48.7m for 2008-09 to 2009-2010.</td>
</tr>
</tbody>
</table>

In terms of the designation of Natura 2000 sites, DG Environment of the European Commission have reported in March 2003 that the UK’s assessment of SPA classification was incomplete, as is its list of SACs (which is incomplete even though it is substantial).

\(^{68}\) DEFRA’s view is set out in their Departmental Report 2003 (chapter 3, pp.69-71). ‘The likely trajectory for the target will involve significant effort to put in place delivery measures that will take time to develop and have an effect. Significant improvements in the level of achievement against the target are therefore not expected to show up early but we would expect the line [on the graph] to rise more steeply in later years’.

\(^{69}\) Need a reference for this comment.
The Markland Report on financing the Natura 2000 network shows several estimates of the cost of managing Natura 2000 sites, which have a rough average of £80/ha/year across Europe (approximately £5,600 per km² using current exchange rate of £1 = £0.69). There is nearly 39,000 km² of land designated as SPA and candidate SAC in the UK. Allowing for designation overlap, the net designated area is 28,827 km² of which 20,462 km² are on land. Ignoring the marine management requirements (which are dealt with in another section of this report), gives a UK annual land management need of £113.8 million/year.

Compared to the anticipated spend of £32m per year, these figures suggest a shortfall in resources needed to manage the Natura 2000 network in the UK of £81.5 million per year. If this were co-financed by the EC at a rate of 50%, it would require additional UK government funds of £40.75m per year. However, there is considerable doubt over the accuracy of these figures, as they are a simple area-based extrapolation of required funds. The figures therefore simply illustrate the order of magnitude of the funding required by the Natura 2000 policy goal. As there is considerable overlap between Natura 2000 and SSSI designations, the above costs for the two are not additional. The similar sizes of the two estimates of costs suggests that the scale of the funding requirement is around £30-50m.

The table below summarises the figures above relating to establishing a network of Natura 2000 sites (in site creation and management):

<table>
<thead>
<tr>
<th>Target</th>
<th>Approximate Current Public Expenditure £</th>
<th>Comment on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natura 2000 network creation.</td>
<td>Estimated £32m per year (Markland report figure).</td>
<td>▪ Shortfall of approximately £81.5m per year.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Given co-financing of 50%, creates a UK funding requirement of £40.75m per year.</td>
</tr>
</tbody>
</table>

2.2.5 Public Spending Proposals

Our research has not found any analyses or commentaries on the overall level of public spending required to meet the UK's targets relating to biodiversity. Research in the area of biodiversity spending and economics has tended to focus on detailed issues such as estimates of the costs of species or habitat protection, or on trying to place an economic value on biodiversity itself.

The estimates below, therefore, are based on material developed by RSPB, based on analysis by organisations such as English Nature.

SSSIs

To progress towards the PSA target for 95% of SSSIs in favourable condition, an extra £35m should be allocated to the budget of English Nature in SR04. This equates to a cumulative £5.8m/yr (i.e. an addition of £5.8m in each year to the previous year's expenditure) for 2005/6-2007/8.

Policy changes, mainly relating to CAP reform, have the scope to considerably increase the effectiveness with which this money is spent towards achieving the

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SSSI PSA. If these do not occur, further resources (of approximately £48m) will be required from SR2006 in order to achieve the PSA by 2010.

The delivery of the SSSI target will make a substantial contribution to implementing the Natura 2000 network in the UK.

**BAP**

Resources for the overall BAP programme for the UK, will require substantial, and as yet unquantified, resources from:

- The integration of BAP objectives into existing policies\(^7\). The Biodiversity Strategy for England sets out how biodiversity considerations needs to become embedded in policy relating to agriculture, water, woodland, marine and coastal management, and urban areas.

- Additional Government expenditure, estimated at £100m/yr, or £300m over the three years of the spending review, for BAP habitats (eg. Heathland) and activities (eg. LBAP coordination) not captured above.

**Farmland Birds**

In order to meet the farmland birds target expenditure of approximately £450m/yr, or £1,350m (for three years) is required in agri-environment schemes. This could be financed by moving funds to environmental objectives through the CAP, which could provide £572m/yr, or £1,716m (over three years). The assumptions behind this figure, which are based on possible rates of modulation and use of national envelopes, are set out in annex 2.

Using these assumptions and calculations, additional UK match funding of up to £273m or £91m/yr would be required by CAP rules. This could be financed from government expenditure, or covered by hypothecation of revenues raised from environmental taxes on the agricultural sector.

**Overlaps**

The analysis has identified overlaps between all 3 policy targets:

- BAP targets and SSSIs. This overlap has not been quantified. Given that the BAP costs are known to be an underestimate, it is probably safe to ignore this overlap.

- SSSIs and agri-environment schemes for farmland birds. This overlap has not been quantified

- BAP targets and agri-environment schemes for farmland birds. The BAP costs exclude agri-environment costs that will contribute to species action plans. There is small overlap between the BAP habitat costs and the costs of conserving more widespread species, estimated at £30m/yr, or £90m.

\(^7\) Article 10 of the Biodiversity Convention places an obligation on contracting parties to ‘integrate consideration of the conservation and sustainable use of biological resources into national decision-making’. The need to do this is commented upon in the UK’s 1994 Biodiversity Action Plan (paras 6.5-6.6)
## Overall Spending Requirement for Biodiversity in SR04

<table>
<thead>
<tr>
<th>Policy Target</th>
<th>Gross SR04 Spend (3 years)</th>
<th>Overlaps (over 3 years)</th>
<th>Adjusted SR04 Spend</th>
<th>Spending Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>From CAP Reform</td>
</tr>
<tr>
<td>SSSI</td>
<td>£35m</td>
<td></td>
<td>£35m</td>
<td>-</td>
</tr>
<tr>
<td>Farmland Birds</td>
<td>£1,350m</td>
<td></td>
<td>£1,350m</td>
<td>CAP environment: up to £1,716m over three years (not all related to biodiversity. See annex 2).</td>
</tr>
<tr>
<td>BAP</td>
<td>Additional spend: £300m</td>
<td>£90m</td>
<td>Additional £210m</td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL
- £1,595 over three years.
- £531m/yr
- Required UK extra spend: £518m
  - £173m/yr

*This number is estimated based on modulation/national envelope rates of between 10 and 20%, and using the UK contribution rates at 10 and 20% in the table in annex 2.*

The figures are set out in the table above. After taking overlaps into account, UK biodiversity targets will require an SRO4 spend of £531m/yr. The maximum feasible use of the CAP reforms would permit the transfer to such spending of £572m/yr (£1,716m in total over the three years) not all of which, however, would be allocated to biodiversity objectives. Such a transfer would require extra UK spending in this area of £273m/yr. Under these circumstances the maximum total amount of extra UK Government money to spend on biodiversity would be £518m over the three years of SR04, or £173m per year.
ANNEX 1

Funding For Biodiversity In The UK
(Prepared by Ian Dickie, RSPB)

The financial responsibility for nature conservation has long been shared between the statutory sector, the private sector and voluntary organisations such as the RSPB and the Wildlife Trusts. The UK Biodiversity Action Plan 'formalised' this notion of shared responsibility and partnership.

The England Biodiversity Strategy identified the major sources of funding for the biodiversity sector. These suggest annual expenditure of at least £250m on biodiversity in the UK, although some of the figures quoted are for England only.

Further monies supporting biodiversity come from the Ministry of Defence and other public bodies, and from the agri-environment budget and DEFRA’s research budget, although not all of these budgets are targeted at biodiversity delivery on the ground. Substantial funding is also obtained from the private sector (eg in match funding of Landfill Tax Credit Scheme), but the exact amount is unknown.

Together these funding sources mean that the UK biodiversity sector spends around £250-300 million per annum.

<table>
<thead>
<tr>
<th>Source</th>
<th>Total, £ m</th>
<th>Time span, yrs</th>
<th>Annual, £ m</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Nature</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIFE Nature</td>
<td>18</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>Environment Agency and Forestry Commission</td>
<td>40</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>DEFRA environmental action fund</td>
<td></td>
<td></td>
<td>1.3</td>
</tr>
<tr>
<td>Heritage Lottery Fund</td>
<td>66</td>
<td>10</td>
<td>6.6</td>
</tr>
<tr>
<td>Landfill Tax Credit Scheme</td>
<td>65</td>
<td>7</td>
<td>9.3</td>
</tr>
<tr>
<td>Aggregates Levy Sustainability Fund to EN</td>
<td>5</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Private sector taxes match funding</td>
<td></td>
<td></td>
<td>11.8</td>
</tr>
<tr>
<td>Wildlife and Countryside Link charities</td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£250 m</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Funding Levels And Schemes
In the UK, the size of the biodiversity sector, in terms of people employed (Rayment and Dickie, 2001) and financial resources, is believed to have increased over the last decade. Funding for rural issues has modestly increased; new funding sources have emerged (eg. the National Lottery); and the voluntary sector has been better able to compete for the grant funding available from both public and private sector sources.

No accurate information is available to measure the sector’s recent increase and the expansion is not secure. As Table A1 shows, there is no dedicated major source of funding for BAP activities in the UK and nature conservation has become reliant on a variety of funding sources. The largest single funding source, English Nature, makes
English Nature distributes funding from a variety of sources (e.g., Site protection, Wildlife Enhancement Scheme) and routes (e.g., National or Regional sources) within the organisation. The individual sources may contain funds that are substantial on an individual site basis, but are too small to make a major difference compared to other resources influencing land use in the UK (e.g., £3.1 billion Pillar 1 CAP for UK, £242m RDR for England in 2003).

Annex 2

(Prepared by Anna Shiel, RSPB)

The two mechanisms for diverting agricultural production subsidies to environmental spending are modulation and national envelopes. The levels of the two are interdependent, and modulation rates should be deducted before envelopes are calculated. This calculation is shown below. The table is based on total direct (pillar 1) payments of approximately £1,467m in England in 2005 and onwards.

<table>
<thead>
<tr>
<th>Modulation and National Envelopes £m</th>
<th>modulation rate</th>
<th>national envelope rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>4.5%</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>10.0%</td>
<td></td>
<td>227</td>
</tr>
<tr>
<td>20.0%</td>
<td></td>
<td>513</td>
</tr>
</tbody>
</table>

This implies that a maximum additional amount of £572m could be made available if modulation were at 20% and the national envelope at 10% (national envelope calculated after modulation deducted). Under match funding rules, £91m of these funds would need to be additional UK Government expenditure.

A more modest target is modulation at 10% and the national envelope at 10%, which would give an additional £293m/yr in England. Under match funding rules, £32m of these funds would need to be additional UK Government expenditure.
2.3 WASTE

2.3.1 Government Targets And Current Spending

A number of waste reduction targets have been set in the past. Early targets included the aspirational target set out in the 1990 Environment White Paper (‘This Common Inheritance’) to increase the recycling of household waste from 6% to 25% in 2000. The desirability of meeting this target was re-emphasised in 1995 in ‘Making Waste Work’. The target was, however, missed by a large margin, with the recycling of household waste only reaching 11.2% in 2000/01.

More recently, a more comprehensive waste management strategy, including quantitative targets, was set out in ‘Waste Strategy 2000’. This was the first national plan for waste management in England and Wales. Its quantitative national targets partly replace those set by Government in 1990 and 1995. It set out views on the challenges and changes needed to 2020 to meet the various standards required by European directives. The strategy was mainly focused on meeting the requirements of the European Landfill Directive (see targets below) and set out ten new ‘levers for change’ which would help to achieve the vision. These measures included the new statutory recycling targets for local authorities, the establishment of the Waste Resources and Action Programme (WRAP) and the development of tradable permits for local authorities’ biodegradable municipal waste (designed to limit the amount that they could send to landfill).

Targets abound in waste management policy. They cover different types of waste, different materials, and specific products. They vary across the devolved administrations. The table below reproduces information from the section on waste within the OECD’s 2002 Review of UK Environmental Performance. Some of the targets pre-date 2003. They have been retained in the table for the sake of comprehensiveness and to give an idea of how targets have evolved over time.

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Target</th>
<th>Source of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>All controlled waste.</td>
<td>Capping the proportion sent to landfill at 60% by 2005.</td>
<td>1995 White Paper.</td>
</tr>
<tr>
<td>Household waste.</td>
<td>50% recycling and composting of recyclable content (ie, about 25% of household waste) by 2000.</td>
<td>1990 White Paper.</td>
</tr>
<tr>
<td></td>
<td>25% recycling or composting by 2000, 1 million tonnes per year to be composted by 2001.</td>
<td>1995 White Paper.</td>
</tr>
<tr>
<td></td>
<td>Increasing recycling and composting at least two-fold by financial year 2003, at least three-fold by financial</td>
<td>Local Government (Best value) performance</td>
</tr>
</tbody>
</table>

---


73 ‘Waste Not, Want Not’ (Strategy Unit, Cabinet Office, November 2002, p.9)


75 There are nine Best Value indicators. In summary, they cover the amount of waste collected, what happens to it, the cost of collections and disposal and satisfaction ratings of
It is notable, amidst this lengthy set of targets, that there is no target for waste minimisation in England (though the National Waste Strategy for Wales has a target for capping household waste generation and that for Scotland for reducing the growth rate of municipal waste). The lack of a target has proved controversial. One of the criticisms within the OECD’s review of UK performance is that the ‘strategy does not adequately address measures for waste minimisation’ (p.84). The Environmental Audit Committee has also pointed out that the resources available for the National Waste Minimisation and Recycling Fund have been largely directed at recycling projects rather than waste minimisation.

While these targets pose a wide variety of significant challenges for the UK, particularly in areas such as landfill (on which there has been historical reliance as means of disposal), some of the targets have been criticised as being un-ambitious.

waste services. Best Value Performance Targets are derived from national recycling targets. Best Value data is available from the Audit Commission and gives average figures on the cost of collection per household and cost of disposal per tonne.

A number of the written submissions to the Environmental Audit Committee in their inquiry into waste indicate disappointment that the Government has not set a waste minimisation target.
The Environmental Audit Committee, for example, has commented that the targets for recycling and recovery are ‘unambitious by European standards’ (recommendation 5). Despite their comparative weakness, the committee acknowledges that they still pose a significant challenge for local authorities in the UK.

**Government Spending**

The OECD has estimated that environmental expenditure accounts for 1% of UK GDP. Spending on waste management is significantly the largest area of specific expenditure. It accounted for approximately 40% of expenditure on ‘pollution abatement and control’ in the UK in the late 1990s. Of this, three-quarters of the expenditure - equal to £2.8bn - was by public authorities. Of this, approximately 70% was for investment, and 30% for operations. This analysis is broadly consistent with estimates put forward by the DTF’s Innovation and Growth team, which reported that waste management accounts for 0.5% to the UK’s GDP (compared to 1% of Germany’s GDP and 1.2% in the Netherlands).

The Strategy Unit report *Waste Not, Want Not*\(^ {77}\) outlined five main avenues of waste management spending. Two of these – the Private Finance Initiative and the Landfill Tax Credit Scheme – are market measures which are described in more detail in the next section. The other three are included within the list below, together with information on levels of spending:

<table>
<thead>
<tr>
<th>Spending Programme</th>
<th>Approximate Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government Standard Spending Assessments(^ {78})</td>
<td>£1.6-1.8bn / year (in 2002).(^ {79})</td>
</tr>
<tr>
<td>The Waste Minimisation and Recycling Fund: ‘The Challenge Fund’(^ {80})</td>
<td>£140m available to local authorities in England. Announced as part of the 2000 Spending Review. Of the £140m, £50m is for 2002-03 and £90m for 2003-04.</td>
</tr>
<tr>
<td>Waste Management Performance Fund (involving the Waste Performance Reward Grant)</td>
<td>£135m in total, made up of £90m in 2004/5 and £45m in 2005/6, administered by local authorities. This fund will supersede the Waste Minimisation and Recycling fund above(^ {81}). Spending will not be ring-fenced.</td>
</tr>
<tr>
<td>National Lottery New Opportunities Fund</td>
<td>£49.5m provided, across the whole of the UK (approximately £39m for England, £5m for Scotland, £3m for Wales and £2m for Northern Ireland)</td>
</tr>
</tbody>
</table>


\(^ {78}\) SSAs cover a wide range of local authority services. Waste is not separately identified within the totals which are: £8,961m (2002/3), £9,435m (2003/4), £9703m (2004/5), and £10,024m (2005/6).

\(^ {79}\) The Strategy Unit (in ‘Waste Not Want Not’ section 8.1) estimated that local authorities spend £1.6 billion each year on waste management. This is largely spent through contracts with the private sector and is dominated by landfill waste disposal. A Parliamentary written answer in May/June 2003 in response a question from Bill Wiggin MP indicated £1.818 billion was spent on municipal waste management in 2002.

\(^ {80}\) A ring fenced fund to help local authorities deliver their recycling targets and implement the waste strategy.

\(^ {81}\) The relationship between the new Performance Reward Grant and the Existing Waste Minimisation and Recycling Fund is not clear. DEFRA’s announcement of the £135m funding for local authorities (announced on 12 August 2003) states that ‘the new bidding round will be funded from the Waste Minimisation and Recycling Fund’. It appears as though this fund will be replaced by the Performance Reward Grant, using 2005-06 funding. It therefore appears as though this announcement reflects additional money to that previously announced.
Local authorities also raise money for waste management from Council Tax. This raises the issue of whether the above amounts represent what central government spends on local authority waste management excluding locally raised revenue. Given that the LGA estimated total waste management resource requirements as £2,271m in 2003/4, £2,453m in 2004/5 and £2,645 to £2,937m (the range reflecting uncertainty as to the level of the landfill tax) in 2005/6\textsuperscript{82}, this suggests that locally raised money is also spent on waste management.

### 2.3.2 Market Stimulation

The government has taken a wide variety of actions to promote markets in an attempt to stimulate improved waste management performance.

- Through the WRAP programme (which does entail direct government spending) the UK has launched a significant effort to create stable markets for recovered materials. One of the challenges facing the programme is finding the right balance between providing support for market creation and stabilisation and intervening too much in the market and creating market distortion.

- The Government has also developed in the 1990s a number of economic instruments that are either directly related to or have influenced waste management, including the landfill tax (introduced in 1996) and the aggregates levy (introduced in 2002). A system of tradeable permits which would support progress towards limits on the landfilling of biodegradable municipal waste is also being implemented through the Waste and Emissions Trading Bill which was introduced into Parliament in November 2002.

- The Packaging Waste Regulations, through which the EU Packaging Waste Directive is transposed into national legislation, are a market-driven approach to accelerating the recovery of packaging waste. Other producer responsibility systems will need to be set up to implement the End of Life Vehicles (ELV) Directive and the Waste Electrical and Electronic Equipment (WEEE) Directive.

- Landfill Tax and the Landfill Tax Credit Scheme. The Landfill tax escalator has progressively increased the amount paid on the landfilling of waste\textsuperscript{83}. The

\begin{itemize}
\item Of this, £38.7m provided for community sector waste projects, committed by 2003-04.
\item £40m for 2001-04, plus some funding from the waste industry under the landfill tax credit scheme.
\item Funding from WRAP has been directed towards research and development projects as well as capital investment projects.
\item £16.5m on new programmes in 2003-04 on waste reduction. Of this, approximately £8m will be dedicated to reducing waste at home, £3.5m to facilitating recycling and composting, and £3m for public awareness-raising.
\end{itemize}

\textsuperscript{82} Service Working Group For Environmental, Protective and Cultural Services Expenditure Report 2003/04 to 2005/06. LGA February 2002.

\textsuperscript{83} The escalator refers to the progressive increase in the landfill tax. It was initially set at £1 per annum, in 1999. Despite an initial reduction the amount of waste being sent to landfill, the evidence suggests
tax currently stands at £14 per tonne (until April 2004), with a ‘medium-long term’ target of £35/tonne. The Landfill Tax Credit Scheme was revised in Budget 2003. Reform resulted in a proportion of the revenue raised from the tax being redirected to a ‘Sustainable Waste Delivery Programme’: £84m in 2003/4; £92m in 2004/5; £92m in 2005/6 (Figures apply to England. For the UK as a whole they are (£100/110/100m). This could be regarded as redirected spending rather than new funding as the money would have previously been spent on waste research projects, but the funds are now likely to be more focused on actual waste management schemes. The programme will be managed by DEFRA and will seek to help households reduce the amount of waste they produce, increase the provision of kerbside or doorstep collections, promote new technologies, and support local authorities in the delivery of best practice.

- Private Finance Initiative: the Government has been keen to pursue PFI projects in the area of waste management, with a gradual orientation away from large scale incineration projects towards projects focused on recycling and waste minimisation. The 2002 spending review provided PFI credits of £355m for waste PFI projects from 2003/4 to 2005/6.

2.3.3 Institutional Issues

Despite the Government’s efforts described above to stimulate markets, volumes of waste have continued to grow by 3-4% per year and a number of serious structural / institutional challenges remain. Over and above levels of Government expenditure, a number of policy challenges arise which will have a significant bearing on the extent to which waste targets will be met. Important issues are highlighted below.

- Expansion and development of the physical infrastructure for recycling across the UK. ‘Waste Not Want Not’ highlights the need for more and better collection systems and markets for recycling as one of the five priority areas for future investment in waste.

- Institutional complexity: The OECD’s 2002 Review of UK Environmental Performance comments on the ‘institutional complexity’ of the UK’s arrangements for waste management. In the view of the OECD, ‘a lack of co-ordination between authorities could become a major obstacle to achieving waste-related targets.’ (p.91) This view is echoed in comments made by the Audit Commission in their review of arrangements in England in 2001 and in ‘Waste Not Want Not’ which recommends improved ‘co-ordination of waste policy at national level…by strengthening the policy making, technical, legal and other resources available to DEFRA’.

- Planning: it is widely recognised that the current system is fragmented and can lead to lengthy procedures and occasional conflicting decisions. In the words of the Environmental Audit Committee, the system is ‘too cumbersome’ (para 85). The Environment Agency, in their evidence to the committee, also comments on the need for the planning system to be ‘reviewed in order to

that the escalator has not had any significant effect on business behaviour. This was one of ACBE’s conclusions in its report ‘Resource Productivity, Waste Minimisation and Landfill Tax’ (August 2001). In 2002, the Chancellor increased the escalator to a rate of at least £3/tonne, with a medium term target of £35 / tonne (ie, it would take about 9 more years to reach the stated level). 84 Insert reference.
cope with a dramatic increase in the number and range of facilities needing planning permission over the next decade’ (written evidence page 2, para 2.5).

- There is a risk that local planning decisions, which are bound to be strongly influenced by local pressure groups, will conflict with national (or even regional economic) priorities. For example, the UK is almost certain to encounter problems in meeting landfill directive targets. Incineration, despite its relative cheapness, will not be a simple alternative on account of planning difficulties. In their report on ‘Creative Policy Packages for Waste’\textsuperscript{85}, Green Alliance advocated an indefinite moratorium on incineration to allow recycling to develop.

- Public opposition to the construction of new waste management facilities remains high. Public scepticism or hostility is linked to a lack of knowledge and awareness.\textsuperscript{86} There was a substantial drop in incineration capacity in the 1990s due to the need to comply with tighter EU air pollution controls. As a result, some commentators suggest that incineration will have to increase substantially in the years ahead to meet the challenge of rising waste volumes. In their analysis of barriers to more successful waste policy, the Environmental Audit Committee includes the lack of alternative waste facilities in the UK once landfill sites are either exhausted, or waste streams need to be diverted away from them. The Government itself estimates in the Waste Strategy that 200-450 new facilities will be required (para 4.13).

- The lack of comprehensive data. Information on non-municipal waste is ‘sorely lacking in the UK….Quantitative information on waste management in the UK is generally poor and fragmented in terms of waste stream, geographical distribution, and time coverage’ (the OECD). Incomplete data is a long-standing problem which risks undermining the development of waste management policy. Improving the quality and range of data and research on waste is another of the Strategy Unit’s priority areas for investment.

- Human resource levels within key public sector bodies, especially DEFRA and the Environment Agency. The Strategy Unit recommended a strengthening of DEFRA’s waste policy / management function.

2.3.4 Assessments Of Adequacy

Our research has found more evidence of comments about the adequacy of waste policy and spending than in some of the other areas of policy examined in this review. This probably reflects the well-known and long-established challenges which the UK faces in meeting many targets, and responding to many European measures. It also probably reflects the many initiatives on waste which have been launched by government over the past 10-15 years.

Despite the activity, the UK’s actual record of meeting waste management targets is poor. In an introductory review of past performance within their audit on waste, the Environmental Audit Committee note the series of missed targets which have

\textsuperscript{85} ‘Creative Policy Packages for Waste: Lessons for the UK’. Green Alliance (October 2002).

\textsuperscript{86} Research for the Strategy Unit by MORI into ‘Public Attitudes Towards Recycling and Waste Management’ (September 2002) highlights the public’s lack of familiarity with incineration and pros and cons of other waste disposal options.
characterised UK waste management policy since the 1990s. According to the committee ‘projections based on current rates of performance indicate that we will not come close to meeting any of the national targets set for recycling or recovery. Under the current set of policies, the targets for 2015 and 2020 in particular will be missed by a wide margin’ (conclusion 7). The committee goes on to report on the barriers to progress in reaching the targets. It comments that ‘funding is a critical issue’ (para 38).

The comments below fall into two principal parts. The first deals with comments on overall levels of spending at national level. The second focuses on comments about delivery and implementation, commenting on the amounts of money required by local authorities.

The costs of meeting various targets have been estimated by a range of commentators and analysts. Related to achieving the targets in the Landfill Directive, DEFRA have estimated costs of 10-33% higher than current spending, depending on the approach taken and assumptions made. Within a range of scenarios, current levels of spending would need to increase by up to £1.6bn per year.\(^\text{87}\) The level of cost increase is strongly influenced by the volumes of waste generated, thus increasing the importance of waste minimisation initiatives. Cost increases were of the order of 10-22% if waste generation stabilised at 2000 levels rather than continuing to increase at the current rate of some 3-4% per year.\(^\text{88}\) The Strategy Unit cites a report by Ernst & Young which estimates an additional investment of £600-700m per annum over the next ten years in order to meet the requirements of the Landfill directive. ‘Waste Strategy 2000’ estimated the additional costs over a baseline of different mixes of waste management options. For the scenarios that increased composting and recycling, these varied from £3.4 billion to £7.7 billion in present value terms for the period 2000-2020 (Vol.2, p.193).

On average, the UK household pays about £60-70 per annum for its waste management service(s). This compares to £100 in France and over £125 in the Netherlands. The UK recovers value from 22% of the municipal waste stream. France pays twice as much as UK and recovers 50%. The Netherlands pays more than twice as much as UK and recovers 88%. To match these levels of spending, funding of the municipal waste stream would need to rise from the current 60 pence per person per week (£1.8 billion pa) to £1 per person per week (£3 billion per year).

The EAC have also provided various estimates of how much recycling and recovery the UK could achieve. Care needs to be taken with definitions, but these include:

- Recycling rate of 62% possible (Friends of the Earth) within 10 years (compares to 30% in the Waste Strategy).
- Recycling of at least 50% of municipal solid waste (Green Alliance).
- Rates of 70-80% in pockets of good practice areas, highlighted by Wastewatch.
- Germany and Austria already recycle 48% of their municipal solid waste.

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\(^{87}\) See Table 4.3: Estimated costs of meeting EU landfill directive targets on municipal waste (in 2002 Environmental Performance Review: the UK – OECD)

\(^{88}\) The Environmental Audit Committee Fifth Report (Waste - An Audit: HC99-I; session 2002-03) comments that the ‘average annual rise in the amount of municipal waste arisings has been 3.4%’. (paragraph 2).
The Netherlands recovers value from approximately 80%.

The Strategy Unit estimated that, even continuing with the current reliance on landfill, the rising volume of waste would double annual waste disposal costs (increasing them by £1.6 billion) by 2020. The cost of their recommended option of waste reduction with 45% plus recycling would cost £29.6 billion between 2002 and 2020 in present value terms, as opposed to £26.7 billion for the ‘do nothing’ or ‘status quo’ option (pp.49,101), a present value difference of £2.9 billion.

These figures all indicate that a significant increase is required in expenditure on waste management and recycling in the short and medium term. The figures from the Strategy Unit’s recommendations would seem to suggest the least increase in spending over current levels but does not indicate the timing of the extra spending that is envisaged.

With local authorities at the centre of delivering improvements in waste management performance, their views on the adequacy of existing funding arrangements are significant (although it might be argued that they would be likely to overstate the funding requirements). In a letter to the Secretary of State in response to ‘Waste Not Want Not’, the Local Government Association (‘LGA’) commented that ‘in order to translate the report’s vision into deliverable outcomes and achievable targets, the provision of adequate additional funding for local authorities is going to be fundamental. Meeting the higher targets proposed cannot be achieved without a significantly increased flow of resources to the councils.’

In their submission to the Environmental Audit Committee, the LGA commented to the committee that the 5.3% increase in the block of money from which spending on waste management is drawn needs to finance a wide range of waste management changes (relating to ozone depleting refrigerants, waste cars, waste electrical appliances, the landfill directive, and the Animal by-products order). They argue that local government simply cannot manage these varied demands with the level of funding provided. In their submission to Spending Review 2002, the LGA estimated that Waste Management and Recycling required £1,305m to meet the requirements of the Landfill Directive and Waste Strategy 2000 but also included spending of £55m on the recovery of fridges, £55m on the End of Life Vehicles Directive and £15m on other Environmental Directives.

A County Surveyor’s Society report has estimated future costs of waste management in the medium and long term. This analysis concluded that local authority expenditure might have to increase by 60% on 2001 levels to meet the 2005 Best Value Recycling targets.

With regard to environmental NGOs, an additional £200m per year has been suggested to fund doorstep recycling for all households. This derives from a Friends of the Earth estimate that £375m a year could be required to deliver doorstep recycling for dry and compostable material throughout England and Wales (as will be required, in respect of recycling in England at least, if the Household Waste Recycling Bill, currently going through Parliament, becomes law), of which £200m would be additional money to that already allocated.

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89 Letter to the Secretary of State from Councillor Kay Twitchen, Chairman, LGA’s Waste & Environmental Management Executive. (www.lga.gov.uk/Our Work.asp)
80 Friends of the Earth Factsheet, Recycling: Can local authorities afford it? 2001/2
The table below summarises the range of views on the adequacy of current Government expenditure. More detailed comment on how specific initiatives could be expanded and taken forward is provided in the next section.

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Comments on Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill Targets.</td>
<td>Funding increases of £0.6 - 1.6bn / year (DEFRA).</td>
</tr>
<tr>
<td></td>
<td>£600-700m per year for 10 years (ie. £6-7bn) to meet landfill targets (Ernst &amp; Young analysis).</td>
</tr>
<tr>
<td></td>
<td>£1.2bn additional funding to take the UK to French / Dutch levels of recovery (Green Alliance estimate).</td>
</tr>
<tr>
<td>Best Value Targets.</td>
<td>£1bn/year (approximately) of additional funding to meet 2005 targets (County Surveyor Society analysis).</td>
</tr>
<tr>
<td>Waste Strategy 2000.</td>
<td>£3.4-7.7bn (present value) additional funding required, 2000-20 (DEFRA).</td>
</tr>
<tr>
<td>Strategy Unit 2002.</td>
<td>£3bn (present value) additional funding required, 2002-20.</td>
</tr>
<tr>
<td>Doorstep Recycling.</td>
<td>£200m increased annual funding (Friends of the Earth / Green Alliance).</td>
</tr>
</tbody>
</table>

**2.3.5 Public Spending Proposals**

In addition to the specifically target-related estimates set out in the previous section, a range of other suggestions relating to waste management or waste minimisation, involving increased or redirected public expenditure, have been made.

A number of suggestions deal with extending the scope or altering the focus of existing Government programmes:

- Green Alliance has suggested a £100m Waste Minimisation Challenge fund over three years for local authorities recycling above a certain level. This would include a focus on home composting to achieve waste reduction.

- Suggestions to double the money provided to Envirowise to increase business waste reduction. The Strategy Unit have recommended expanding the coverage of Envirowise. Evaluations of the programme have demonstrated the value for money which its expenditure brings. It has been estimated that it has brought annual cost savings of over £100m to British business through its advice on waste minimisation and reduced use of raw materials.\(^91\) This would mean an additional £40m.

- Suggestions have been made to extend the role of WRAP. There is evidence of support and enthusiasm for the programme, from the Strategy Unit, the Environment, Food and Rural Affairs committee, and scheme users.\(^92\) More particularly, it has been suggested (by the Environmental Audit Committee) that it focus more on waste minimisation. The programme’s current areas of work cover three generic areas (procurement, financial mechanisms, and standards, as well as four focused on specific material waste streams – paper, glass, wood and plastic). WRAP themselves (in their ‘Achievements Report 2002-03’)

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\(^91\) Cited by Lord Sainsbury of Turville (Innovation and Environment Conference, February 2002.)

\(^92\) The Commons Committee noted WRAP’s ‘impressive record so far’ in its report on the future of waste management (22 May 2003). WRAP’s own summary of its progress is contained within its ‘Achievement Report 2002-03’.
have estimated that the budget required for carrying out the range of new activities suggested in the Strategy Unit report would be £17.5m in 2003-04, rising to £49.6m in 2005-06.

- Suggestions have also been made for an increase in funding for DTI communications and publicity to business. Costed proposals have not been identified.

A number of other ideas have been put forward for to tackle specific challenges and problems, or to implement clearly identified projects:

- The Environment Agency has argued to DEFRA for funds to introduce a ‘Fly Tipping Abatement Task Force’. The Agency has made this proposal to DEFRA in the light of the Strategy Unit report on waste. They estimate that fly tipping is currently costing £100-200m per year and is likely to increase in frequency as waste disposal costs rise. The costs of creating such a capacity (which would include more human resources, a database, specialist criminal or surveillance activity, training programmes, publicity etc.) would be approximately £14m in year 1 and then £6m per year thereafter. The total cost for the future spending round therefore would be £26m over three years.  

- The Environment Agency has also sought funding for other waste activities. These ideas include improving waste data and information through the provision of a national waste data service, an initiative which would tackle a long-standing problem in the area of data which has been highlighted by the OECD and then the Strategy Unit. The Agency estimates that action would cost £16.2m in its first year and £5m per year thereafter. The total for three years therefore would be £26.2m. A further Agency proposal made to DEFRA has been made for a £15m project (over three years) for ‘on-line data’ on wastes arising, movement, and disposal of commercial and industrial waste. The Agency has bid for this from the Treasury Capital Modernisation Scheme, which seeks to support capital investment to improve public services. (A review of grants made under the CMF in its first four allocation rounds shows that very few commitments have so far been made to projects which focus on environmental objectives.)

Concerns have been raised about DEFRA and the Environment Agency’s level of staff resources. The Environmental Audit Committee, for example, has commented on the need for DEFRA to be properly resourced on waste management issues if it is to have a chance of delivering on the waste agenda (para. 87). It has also commented on the need for more staff resources for waste management facility

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94 Support has been provided to DTI for initiatives on ‘Renewable Energy’ (£60m, forming part of the larger £100m fund for renewables - round 3), to DEFRA on creating a centre for organic fruit and nursery stock (£2.26m), on ‘CHIRP’ (£50m in support of CHP), on ‘Nature for People’ (£10m to improve SSSIs and public access to National Nature Reserves), and £9m to the Forestry Commission on delivering sustainable regeneration in Community Forestry (round 3). Other grants have been made which might deliver environmental benefit, but which are not focused on environmental objectives per se. Examples of these include support to DTLR for the provision of internet access to the Planning Inspectorate’s planning appeal system (£3m, in round 2), and support to the Meteorological Office for improved flood and severe weather warnings (£1.176m – from round 2).
inspection at the Environment Agency. Our research has not found recommendations on how much additional resource is required.

Green Alliance has also suggested better use of PFI to encourage options higher in the waste hierarchy. This is the trend in policy already. Moving this forward could involve setting a percentage of PFI credit funds for recycling infrastructure or other preferred options. In combination with this, they have suggested the removal of subsidies for waste management options low down in hierarchy, such as energy from waste.

The table below brings these suggestions together. From the sources cited above, it seems likely that, to reach the targets set by the Government and by the Landfill Directive, spending on waste management will need to rise by about £1 billion per year (about £40 per household). About £200 million of this will be needed to establish doorstep recycling schemes. The rest will be needed for sorting and materials and energy recovery infrastructure. Other suggested initiatives, many of which will be necessary to maximise the effectiveness of the provision of the core target-oriented spending, are estimated to cost about £250 million per year.

<table>
<thead>
<tr>
<th>Proposal</th>
<th>New or Additional Cost Estimate</th>
<th>Originator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main target-oriented spending</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greatly increase recycling/recovery infrastructure.</td>
<td>£1 billion per year.</td>
<td>Combination of sources (see text).</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding for doorstep recycling.</td>
<td>£200m+ per year.</td>
<td>Friends of the Earth.</td>
</tr>
<tr>
<td><strong>Other suggested initiatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creation of ‘Waste Minimisation Challenge Fund’</td>
<td>£100m over three years.</td>
<td>Green Alliance.</td>
</tr>
<tr>
<td>Doubling money for Envirowise.</td>
<td>£40m.</td>
<td>Combination of sources.</td>
</tr>
<tr>
<td>Increase resources for WRAP, and introduce focus on waste minimisation.</td>
<td>£49.6m by 2005-06.</td>
<td>Strategy Unit, EAC.</td>
</tr>
<tr>
<td>Increase DTI funding for communication and publicity to business.</td>
<td>Not costed.</td>
<td>Green Alliance.</td>
</tr>
<tr>
<td>Fly Tipping Abatement Force.</td>
<td>£26m over three years.</td>
<td>Environment Agency.</td>
</tr>
<tr>
<td>Creation of a national waste data service.</td>
<td>£26.2m over three years.</td>
<td>Environment Agency.</td>
</tr>
<tr>
<td>Creation of ‘on-line’ waste data.</td>
<td>£15m.</td>
<td>Environment Agency.</td>
</tr>
<tr>
<td>Increase human resources for DEFRA and Environment Agency.</td>
<td>Not costed.</td>
<td>Strategy Unit, supported by Environmental Audit Committee and LGA.</td>
</tr>
</tbody>
</table>

Given that there are many possible funding streams that could be utilised for this investment, including PFI and funds from the sale of PRNs (Packaging Recycling
Notes). It would seem important, to get the most cost-effective outcome, that measures and facilities to deal with different sources of waste (for example, commercial and industrial, as well as household) are considered together, in the context of the whole range of funding options (including private waste management expenditures). One suggested approach to waste management that may warrant further exploration is the construction of integrated Resource Parks\(^{95}\).

While recommendations as to where the possible extra spending might come from are outside the scope of this document, it may be noted that it has been suggested that an important source of funding for these various initiatives could be the landfill tax, which is to be substantially increased, as noted above. Green Alliance estimates that proceeds from the landfill tax escalator could amount to £1bn by 2005-06, and there will also be the funds redirected from the Landfill Tax Credit Scheme (LTCS), which, as noted above, may amount to £100m per year for the UK as a whole. However, it should be noted that a number of organisations are likely to seek additional resources through the Landfill Tax and LTCS route\(^{96}\). However, the fact that this large new source of revenue has already been put in place will undoubtedly ease the task of undertaking these significant extra expenditures.

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\(^{96}\) The Local Government Association, for example, has suggested that ‘resources generated by the proposed annual increases in the Landfill Tax must be directed back to local authorities’. 
2.4 MARINE

2.4.1 Government Targets And Current Spending

In covering the marine environment, this section focuses primarily on issues relating to seas, rather than coastal waters or terrestrial waters.

Discussion of targets in the area of marine policy needs to be set in the context of the wider debate on marine strategy. The UK government has only recently set out its vision for the UK marine environment, within its first Marine Stewardship Report, called ‘Safeguarding our Seas’. The report sets out a strategic direction. Although it provides a timeline of key dates and milestones (up to 2020), it does not underpin these with a programme of specific targets. Nor does it offer any information about levels of present or future Government expenditure on marine issues.

Building on the report, more detailed goals for the UK marine environment are being formulated. Proposals have been made by the ‘Review of Marine Nature Conservation Working Group’ (the RMNC). These proposals put forward a set of objectives such as conserving and enhancing the overall quality of our seas, and increasing understanding of the marine environment.

The objectives within both of these documents, however, are some way from being translated into specific, measurable and time-limited targets. However, broad targets do exist from previous commitments, frameworks and regional and international conventions, as described below.

Marine Biodiversity

The protection of ecosystems and marine biodiversity is a general aim contained within a number of marine frameworks, including the EU 6th Environmental Action Programme and the Convention on Biological Diversity. The Biodiversity Strategy for England also sets out aims and plans for protecting and enhancing marine biodiversity. But it does not contain detailed targets, nor provide information on spending plans.

The general aim of the 6th Action Programme provides a broadly-stated marine biodiversity target. It is sufficiently general to encompass the more specific objectives which are likely to be developed in future. For example, marine conventions such as OSPAR (which has a number of strategic priority areas), link

98 The RMNC working group is comprised of over 20 stakeholder organisations. It is conducted and chaired by DEFRA European Wildlife Division (EWD) officials. The RMNC is examining how effectively the system for protecting nature conservation in the marine environment is working. The working group is tasked with taking the review forward and providing a forum for debate and solution on the key issues.
99 Chapter 8 (‘Coasts and Seas’) describes the framework. It is supported by appendix 5 of the Strategy which sets out a table of policy priorities, available tools, current action, short-term actions (1-3 years) and medium term actions (3-5 years).
100 The Convention for the Protection of the Marine Environment of the North East Atlantic. It requires contracting parties to take all possible steps to prevent and eliminate pollution and take the necessary measures to protect the maritime area against the adverse effects of human activities. It aims to safeguard human health and when practicable, restore marine areas which have been adversely affected. OSPAR has developed five strategies to direct its work to 2010 and 2020 and has broad targets to support them. The strategies cover
to and support the principles of the Marine Thematic Strategy contained within the 6th Action Programme.

We also note the seven specific indicators set out within the Biodiversity Strategy for England, which will be used to monitor progress. These cover both marine and coastal issues. The seven indicators (and their references within the strategy) are:

- UK fish stocks fished within safe limits (H6).
- Progress towards coastal and marine SAP/HAP targets (M1).
- Populations of coastal and sea birds (M2).
- Marine biodiversity (to be developed) (M3).
- Number and size (or % of resource) of coastal and inshore marine Natura 2000 sites; number with management plans; condition of coastal SSSIs in England (M4).
- Marine inputs: cessation of discharges, emissions and losses of hazardous substances by 2020 (M5).
- Levels of cetacean bycatch in UK waters (M6).

The England Biodiversity Strategy illustrates that considerable progress is needed in the development of biodiversity action plans for this sector. At the time of the strategy’s preparation, 58 species action plans had been prepared and 17 habitat action plans were associated with the coasts and seas around England. However, some 67% of the species plans, for example, had not produced a report or were incomplete due to insufficient information.

Our research has found very little precise information on marine spending. Where information is available, it is often not clear how it breaks down between marine and coastal priorities, or whether and how it relates to biodiversity spending on land. The table below therefore sets out a rough estimate of annual spending on marine biodiversity against a general target. The total of approximately £22m is a broad-brush estimate.

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate Government Expenditure £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halt the decline of marine biodiversity by 2010.</td>
<td>EU 6th Environmental Action Programme.</td>
<td>£1.5m on MLIS research programme&lt;sup&gt;101&lt;/sup&gt; (1998-99 figure) to provide input to the Assessment and Monitoring committee set up under the OSPAR convention. c. £17.4m on marine biodiversity. This amount is a rough estimate.</td>
</tr>
</tbody>
</table>

biological diversity and ecosystems, eutrophication, hazardous substances, the offshore oil and gas industry, and radioactive substances. It is a target, for example, to reduce or eliminate, as far as practicable, discharges, emissions or losses of hazardous substances into the marine environment by 2020.

<sup>101</sup> Chapter 8 (‘Coasts and Seas’) describes the framework. It is supported by appendix 5 of the Strategy which sets out a table of policy priorities, available tools, current action, short-term actions (1-3 years) and medium term actions (3-5 years).

<sup>102</sup> The Marine and Land-Based Inputs to Sea Research Programme. The programme was set up in 1988, prior to the OSPAR Convention, but now focuses on themes which reflect OSPAR priorities. These include the development of risk assessment methodologies appropriate to the marine environment, and the investigation of ecosystem approaches to environmental management.
rough guesstimate, derived from estimated expenditure from the Biodiversity Strategy for England. The amount has been arrived at as follows:

- Approximately £4m per year on site protection. To provide this estimate, we have taken approximately 10% of English Nature’s annual expenditure on biodiversity on sites (which totals £37.8m) to reach a figure of approximately £4m. This low proportion reflects the fact that a lot less is currently spent on marine sites, and marine areas are less intensively managed.
- Approximately £11.4m/year from agri-environment schemes with an impact on the marine environment (assuming 10% of annual spend). This figure is likely to err on the generous side given that most of the impact of agri-environment measures will be felt at coastal sites rather than marine.
- £2m per year from EU/LIFE funding (one-quarter of annual spend). This may encompass marine and coastal spending, but it is not clear.
- £3m per year on the Darwin Initiative, rising to £7m per year in 2005-06 (the £3m covers all types of project, not just marine projects).

English Nature’s objectives for designated sites also extend to marine biodiversity. The objectives include:

- Establishing a network of designated sites within English territorial waters (0-12 nautical miles).
- Identifying a suite of Special Protection Areas by 2006, and a list of possible Special Areas of Conservation by 2004.
- Assessing and reporting on the condition of 88% of the marine component of international sites, by 2005.
- Updating existing advice on European marine sites by 2005.

No specific spending information was found against these objectives.

**Fisheries**

The DEFRA Departmental Report notes that there was a 2000 PSA target of ‘reducing UK fishing effort in those sectors of the fleet with most over-capacity to 20% below the 1997 level by end-2001.’ A further target reduction for 2004 was to be

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103 The Darwin Initiative, set up in 1992, supports biodiversity projects around the world. Its aim is to assist countries rich in biodiversity but poor in resources.
104 The Darwin Initiative, set up in 1992, supports biodiversity projects around the world. Its aim is to assist countries rich in biodiversity but poor in resources.
105 These EC measures support the protection and enhancement of biodiversity, requiring the designation of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The UK is presently applying their provisions within the territorial waters (in England and Wales) and is consulting on their future application to the limit of jurisdiction of UK waters.
106 Definitions of the terms ‘close to zero’ and ‘historic levels’ have not been agreed, and remain under examination and discussion.
set following EU negotiations in 2001. The report claims that the 2000 objective has been met and that ‘the UK is already within the final EU targets set for the UK fleet’ (p. 79). No costs of implementing this programme are recorded in this report.

Currently ‘there is no fishing related PSA objective for the SR2002 period’ (p.35). Although there are numerous references to the fisheries crisis in the introductory pages of the report, there is little by way of detail of current and planned expenditure on fisheries.

As stated above, the Biodiversity Strategy for England contains two indicators for fisheries. The first is ‘UK fish stocks within safe limits’. The second is ‘levels of cetacean bycatch in UK waters’.

Despite the lack of targets, information is available on grant schemes and support for the fishing industry. A range of figures exists, but it is not clear how these relate to each other. The DEFRA website carries a general warning that the entire set of DEFRA calculations are ‘incorrect. This is the result of difficulties translating information held on the Treasury data base to fit the format of these tables. Extensive recalculations are required. These will be completed and new tables produced by the end of October’

Bearing in mind these ambiguities, the information suggests funding of the order of £32-44m per year in grants. The majority of this appears to be on industry restructuring (retraining, and vessel decommissioning) rather than on grants specifically targeting environmental protection.

The table below synthesises available information:

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Funding</th>
<th>Source of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decommissioning Scheme</td>
<td>£22m over 3 years, comprised of: £11m to improve the quality and value of fish catch. £6m for vessel decommissioning in England. £5.5m for retraining and rejuvenation of ports.</td>
<td>DEFRA Announcement (April 2001).</td>
</tr>
<tr>
<td>Capital Fisheries Grants</td>
<td>£5.4m per year for 2003-06. It is not clear whether this is the same money as that above for retraining.</td>
<td>DEFRA Departmental Investment Strategy 2003-06.</td>
</tr>
<tr>
<td>Grant Support</td>
<td>£32.4m annually (an estimated 27% of total government expenditure on fisheries). In addition, approximately £50m is spent on stock estimation with £28m on enforcement, and the balance on price support and administration.</td>
<td>Strategy Unit: 'UK Fisheries Industry: 'Current Situation Analysis' (June 2003).</td>
</tr>
<tr>
<td>FIFG Support</td>
<td>Estimated £130m in total for 2003-06, allocated across the UK and Northern Ireland, and to non-Objective 1 areas.</td>
<td>Strategy Unit: 'Current Situation Analysis' (June 2003).</td>
</tr>
</tbody>
</table>

Expenditure in Scotland, which holds the most important fleet, is significant. In 2003 £40m was spent on decommissioning, with a further £10 million for transitional aid. A similar amount was spent in Scotland in 2001.

The Strategy Unit presentation also includes (slide 38) a summary of European Structural Funds to be received between 2000–2006. This states that funding under the Financial Instrument for Fisheries Guidance scheme (FIFG) amounts to £57.6m for 2003-06. This is comprised of £18.7m for Northern Ireland, £17.9 million for the Highlands and Islands, £0.26m for the North West England, £11m for South West England, and £9.8 million for West Wales. A further £73m allocation is shown for non-objective 1 areas.

### 2.4.2 Market Stimulation

Government policy on marine protection takes account of the socio-economic factors and policies which go beyond the impacts of public expenditure. Historically, economic activity (especially fishing) has been a major reason for the loss of marine biodiversity. It seems that Government efforts in future will seek to ensure that economic activity works with the grain of conservation and restoration. For example, intervention in activities such as shipping, offshore energy, dredging and the construction and operation of ports – through new regulation, or the implementation of existing measures – will have an important bearing on the extent of marine pollution from anthropogenic sources.

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110 Chapter 5 provides tables of previous and planned expenditure. Expenditure has risen gradually since 1998. Particularly high expenditure (£119m) in 1999-00 represents the ‘Factortame’ legal settlement cost arising from the UK government’s failed attempt to prevent foreign owned interests from setting up UK based companies and acquiring UK fishing quotas (‘quota hopping’). 111 As with DEFRA’s values, an amendment has been inserted to the Strategy Unit numbers stating that these figures are to be revised, as it is now known that they include non-sea fishing spend. The figure will, the Strategy Unit states, be revised to a lower level. 112 [http://www.pm.gov.uk/files/pdf/current_situation.pdf](http://www.pm.gov.uk/files/pdf/current_situation.pdf). 113 [http://news.bbc.co.uk/1/hi/scotland/3055773.stm](http://news.bbc.co.uk/1/hi/scotland/3055773.stm)
Marine conservation will also be affected by developments in the offshore oil and gas industry in the North Sea. The Government is working with oil and gas operators to minimise the environmental impacts of their operations, within a regulatory framework. Given the maturity of existing North Sea fields, the main challenge will be to ensure that environmental protection remains a priority in fields of declining economic value and that appropriate frameworks are put in place to minimise the environmental impacts of decommissioning.

While finance for the decommissioning of fishing fleets and labour diversification is likely to come from EU and UK public sector grant schemes, private finance will be required for the ongoing operation of the fishing industry. It should be noted that a major source of private funds has historically come from within the fishing industry itself. For example in Scotland there is a tradition of capital being advanced to a skipper to buy a vessel and gear in return for the catch. If publicly financed fleet decommissioning is to be effective in the conservation and regeneration of fish stocks, it will be important to ensure that these effects are not cancelled out by privately financed fleet enhancement.

The UK Marine Strategy acknowledges the previous ineffectiveness of stakeholder engagement on marine and coastal issues. A distinctive feature of the strategy therefore is its emphasis on stakeholder consultation and engagement. This reflects Government awareness of the importance of other actors in the market in caring for and enhancing marine biodiversity. Plans for integrated coastal management, for example, require cooperation with a range of stakeholders, including landowners, businesses, the tourist industry, and conservation agencies, as well as fishers.

2.4.3 Institutional Issues

The Marine Stewardship Report and subsequent consultation on how to deliver the vision contained within it highlight a number of issues broader than spending which will have a significant bearing on the future of marine conservation. These include:

- The balance of public and private sector expenditure on terrestrial, freshwater and marine systems.

- Regulation, such as that which governs development in coastal and marine waters, including ports. These measures (which have been described by the then DLTR Ministers as ‘complex and piecemeal’) are under review. Recommendations from the Review of Marine Nature Conservation will also be available in 2004. In terms of site and species protection, work is continuing on developing an administrative framework in support of an inshore and offshore Natura 2000 network. The current DEFRA review of marine fisheries and environmental enforcement arrangements will also report by April 2004. Beyond these specific regulatory initiatives, the possibility exists of comprehensive marine legislation. However, the Government has made clear its current view is that it is not necessary at this stage to underpin its marine vision or strategy within primary legislation.

- The influence of international obligations. Marine policy features a large number of international conventions, going back over 50 years. The 1992

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114 ‘Seas of Change’ Consultation Paper (DEFRA. 14 November 2002. This consultation closed on 28 February 2003.)
Convention on Biological Diversity is of particular importance as it provides the key international framework on the ‘ecosystem approach’ which underpins UK policy. These conventions create a broad international framework and corresponding work programmes within which UK expenditure on marine issues will be framed.

- The need for international cooperation. Seas know no national boundaries. Marine environmental challenges are by nature transboundary. UK plans for fisheries, for example, clearly need to be formulated in the context of the European Community competencies under the Common Fisheries Policy (CFP). The responsibility of the devolved administrations in Scotland, Wales, and Northern Ireland should also be noted given that some marine responsibilities fall to them. International cooperation is needed not only in political support for the frameworks and conventions mentioned above, but in the realities of policy implementation.

- Developments in other areas of UK policy, such as the decommissioning of oil and gas rigs (referred to above) and policy on offshore renewable energy. For example, offshore wind farms will need to make a substantial contribution towards meeting the Government’s 10% renewables target by 2010, and going beyond that for 2020. Other forms of renewable energy, such as wave and tidal power, may also be developed and commercialised, and have the potential for a significant impact on marine conservation. As always, a balance will need to be struck in the pursuit of potentially conflicting objectives of conservation and economic development.

- Developments in planning policy. The reviews of PPG20 (on coastal planning), PPG 9 (on conservation), as well as the existing PPG 25 (on development and flood risk) will influence the extent to which biodiversity objectives are incorporated within coastal plans.

- Development of the evidence base underpinning policy in this area. In general, Government is seeking more and better evidence in policy making, including environmental and socio-economic assessments. The marine strategy mentions this, and makes clear that scientific understanding of the seas is less developed than understanding of land-based systems. The Biodiversity Strategy for England, for example, refers to the policy priority of increasing understanding of the impacts of climate change on maritime habitats and species.

2.4.4 Assessments Of Adequacy

Our research has found many high-level comments which record support for an integrated approach to marine policy, featuring a strategy and framework. But

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115 The ‘ecosystem approach’ promulgated by the UK involves developing strategy which promotes ‘the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’ (Malawi Principles). The UK formally endorsed the ecosystem based approach at the Fifth North Sea Ministerial Conference in March 2002. A commitment made at the Johannesburg World Summit on Sustainable Development ensures that the UK and other countries will work to encourage the application of this approach by 2010.
research has found no views or comments on actual or potential expenditure commitments.

The Joint Nature Conservation Committee, in their corporate plan 2003-06\textsuperscript{116}, provides two funding scenarios. The first itemises activities which will be carried out under a ‘level’ funding regime (that is, on current commitments). The second itemises activities which could be carried out under an ‘enhanced’ funding regime in line with priorities identified for the 2002 Spending Review. Their workplan covers a range of biodiversity initiatives, including a number of priorities which focus on marine issues. The enhanced funding scenario shows an additional funding requirement from 2003-2006 totalling £1.1m. This is not broken down into marine and other types of activity, but provides an indication of the scale of additional funding which could be set against clearly identified actions.

Analysis has been carried out on aspects of the potential costs of marine biodiversity measures. In relation to the potential costs to the offshore industry of coastal and inshore marine Natura 2000 sites, a rough indication was determined in the Regulatory Impact Assessment (RIA) for the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001. This allowed for a maximum 15 offshore marine sites requiring additional protection measures (over and above current practice regarding environmental protection measures). The Government expected costs for additional measures to be in the range of £100,000 to £1 million for the oil and gas industry. Total compliance costs were expected to be in the range of £1.5 million to £15 million for the oil and gas industry.

An indicative costing relating to enforcement of the regulations shows that the partial cost of day patrols for the Sea Fishery Inspectorate is £6,100 each ship day and £1,500 per aircraft (Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2003 RIA).

In relation to sites with management plans, JNCC led an EU LIFE project on management, surveillance and monitoring on 12 marine SACs. The total budget was 4,915,000 Euros (approx. £3,403,000) over 5 years. There could be associated support work costs for the Statutory Nature Conservation Agencies.

It has been estimated that the costs to participants of setting up a management scheme for a marine SAC is £65k with running costs of approximately £40k per annum (from John Randall’s Marine Wildlife Conservation Bill Regulatory Impact Assessment).

It has been estimated that the one-off cost for the conservation agencies for the development of site selection criteria is estimated to be in the region of £340k. Other estimated costs for the conservation agencies include £5.8 million for the development and operation of surveys; £1.7 million for the notification of sites; £2 million for the management of sites (based on the notification of 80 sites in England and Wales) with an additional £15.5 million for the monitoring associated with the proper management of those sites (from John Randall’s Marine Wildlife Conservation Bill Regulatory Impact Assessment).

2.4.5 Public Spending Proposals

As highlighted in the section above, there was very little evidence of comment on current levels of marine expenditure. Similarly, our research has not found proposals for future levels of public expenditure.

We have obtained extracts from a report prepared in 2002 for DEFRA by CEMARE (the Centre for the Economics and Management of Aquatic Resources) on future alternative policy instruments to regulate fishing capacity\textsuperscript{117}. The report assesses different options for future fisheries policy and provides estimates of the annual person/years required to administer different options. These are not financial cost estimates, but these could be determined by assuming a standard staff cost.

Over the period of the next Spending Round, Government spending in the marine area could be focused on the following areas:

- Establishment and monitoring of inshore and offshore protected areas of various kinds, ranging from sites containing internationally important natural features (such as the Darwin Mounds) or species, to broader Marine Protected Areas (such as OSPAR MPAs or nationally important sites) and perhaps extensive areas comprising No Take Zones in which fishing is banned or severely restricted in order to encourage the recovery of fish stocks.

- Further decommissioning of the UK fishing fleet, especially in relation to white fish. The data cited above from DEFRA in 2001 suggest that vessel decommissioning over three years cost £6m, and it may be that this relates to the 20% fleet reduction which is said to have occurred over 1997-2000, though this figure seems rather low for this. (The European Commission suggests that, to be sustainable, the EU fishing fleet may need to be reduced by 40%.) On the basis of simple extrapolation of this figure to the UK, this might cost the UK £12m. Clearly it would be desirable to have arrangements in place to ensure that decommissioning on this scale really did represent a fleet reduction and was not compensated for by the building of new boats.

- Monitoring and surveillance of the remaining fleet to ensure that any protected areas are respected, and that gear and bycatch restrictions are complied with. At a minimum this will require placing Vessel Monitoring System (VMS) equipment on all vessels and requiring detailed verifiable reporting of movements. It may also require the use of observers on fishing vessels.

- Administration of the decommissioning, quota management and effort management schemes that may be adopted. The CEMARE report suggests the level of person-power that may be required for such tasks. It seems that the current management system, requiring 59 person years, is towards the upper end of the range required for the different options considered, so that public spending in this area may need to be less or slightly more than at present, depending on the option chosen.

Continued scientific research and monitoring, not least to gain a better understanding of what an ‘ecosystem approach’ to managing fisheries may mean in practice, but also to ascertain the level and extent of any commercial fish stock recovery. Baseline data is needed for all of the marine environment.

Clearly some funds should be available from the Common Fisheries Policy for some of these tasks, but in the absence of clear Government policy objectives and targets in these areas, it does not seem possible to estimate the level of UK Government resource that might be required in addition to current spending. However, it seems unlikely that the new policy directions outlined in ‘Safeguarding our Seas’, the commitments to marine protection and conservation under OSPAR and European Directives, and the need to take further action in respect of the monitoring and conservation of fish stocks, could be financed for less than £50m per year, and this is therefore the indicative figure which is being put forward for this area.
2.5 FARMING

2.5.1 Government Targets And Current Spending

The Government’s Strategy for Sustainable Farming and Food was published in December 2002\(^{119}\). The Strategy built on the recommendations of the Curry Commission, which reported in January 2002\(^{120}\). It provides a framework for the farming industry to meet the challenges of becoming more environmentally sustainable and economically viable. Important environmental elements of the strategy include the creation of an entry-level agri-environment scheme, the potential development of a higher-level scheme, and actions focused on farms, such as whole farm audits and plans, and a pilot network of demonstration farms. Delivery of the various strands of the Strategy is being overseen by an independent Implementation Group, chaired by Sir Don Curry.

The tables below present DEFRA targets relevant to farming. These are drawn from the department’s Public Service Agreement agreed with the Treasury. The targets are included with the DEFRA strategy\(^{121}\). They fall under two broad ‘objectives’. Objective IV seeks to ‘promote sustainable, diverse, modern and adaptable farming through domestic and international actions’. Objective VI seeks to ‘protect the public’s interest in relation to environmental impacts and health, and ensure high standards of animal health and welfare’. While these targets are specific to farming, it should be noted in general that spending on farms can contribute to the achievement of other Government environment objectives, particularly those relating to biodiversity and water, and even contributing to waste and energy targets.

Target 5, below, was a new target set by the 2002 spending review with the intention of pushing forward work on modernising farming and giving focus to those efforts.

<table>
<thead>
<tr>
<th>Target</th>
<th>Source of Target</th>
<th>Approximate UK Government Expenditure £</th>
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<tbody>
<tr>
<td>Deliver more customer-focused, competitive and sustainable food and farming as measured by the increase in agriculture’s gross value added per person excluding support payments; and secure CAP</td>
<td>PSA target 5.</td>
<td>£500m over three years, to implement the core recommendations of the Curry Commission(^{122}). This includes the revision and development of agri-environment schemes. However, there is no official breakdown of how the £500m will be or is being spent.</td>
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<tr>
<td></td>
<td>Further reform of the</td>
<td>£1.6bn (over 7 years) for the England Rural Development Programme (ERDP), to assist in agricultural restructuring. (This is co-financed with the EU and from modulation). ERDP is comprised of ten schemes, detailed in an additional table below.</td>
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\(^{118}\) Table 9, page 66.
\(^{120}\) ‘Report of the Policy Commission on the Future of Farming and Food’
\(^{122}\) Spending Review 2002 itemises the areas of investment for the £500m, but does not allocate amounts to the initiatives identified. The areas are as follows: ‘electronic livestock identification, a more efficient food chain, actions through the England Rural Development Programme, a new broad and shallow scheme to be piloted over the next 2 years and then rolled out in full in 2005-06; other measures such as the Rural Enterprise Scheme, the Processing and Marketing Grants Scheme, and the Vocational Training Scheme; anticipated growth in current schemes; piloting farm audits; better farm advice; more testing for TSE type diseases (such as BSE); an enhanced National Scrapie Plan; further work in concert with HM Customs & Excise, to prevent illegal meat imports.’

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reforms that reduce production-linked support, enabling enhanced EU funding for environmental conservation and rural development.  

<table>
<thead>
<tr>
<th>CAP is also a commitment within the Rural White Paper.</th>
<th>In addition to ERDP, many smaller complementary initiatives operate. These fall in four areas. Expenditure figures are difficult to discern:</th>
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<tr>
<td>- National or multi-regional initiatives (27 such are listed(^{123}), such as the Countryside Agency’s 5 year ‘Eat the View’ programme(^{124})).</td>
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<td>- Small scale discretionary grants / matched funding opportunities (eg. English Nature grants to enrich local biodiversity).</td>
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<td>- Initiatives in specific / designated areas only (eg. DEFRA’s ‘Farm Waste Grant Scheme’ applicable in Nitrate Vulnerable Zones).</td>
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<tr>
<td>- Other government support for rural areas (eg. DTI loans and advice for small businesses under the ‘Small Business Service’).</td>
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£114-156m per year in agri-environment schemes resulting from CAP reform, involving a pilot scheme, at entry-level, which could be rolled out across England from 2005.

In terms of animal health and welfare, the overall aim is to ensure that animal and fish are protected by high welfare standards. This is sought by providing information to the public and to those with responsibility for livestock, monitoring welfare standards at livestock premises, markets, and in transit, and taking action to deal with animal welfare cases. DEFRA is currently finalising its plans for a Strategy for Animal Health and Welfare for Great Britain, following consultation in 2003 and the publication of an outline strategy this autumn.

DEFRA’s specific target, which applies to England, Scotland, and Wales is set out below. In their 2003 Departmental Report, DEFRA comment that the BSE epidemic continues to show steady decline, although an interim target for 2001 was not met. The same report claims that the department is on track to meet the March 2004 deadline for dealing with animal welfare cases. Spending information is not readily available in one source. The most useful source for expenditure information is the draft animal welfare strategy, section 4 of which defines a baseline which includes the investment of Government resources:

<table>
<thead>
<tr>
<th>Protect public health and ensure high standards of animal welfare by reducing the annual incidence of BSE to less than 30 cases by 2006, and the time taken to clear up cases of poor animal welfare in farmed animals by 5% by March 2004.</th>
<th>PSA Target 9.</th>
</tr>
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<tr>
<td>- Investment of £11.5m since July 2001 in support of the National Scrapie Plan, with a further £10.5m over three years committed by the Welsh Assembly for action in Wales.</td>
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<td>- Up to £45m a year spent from 1999-2001 on bovine TB controls.</td>
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<td>- Planned expenditure of over £44m in 2003-04 on developing the TSE (Transmissible Spongiform Encephalopathy) testing programme.</td>
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<tr>
<td>- £32.8m on research on animal welfare, animal health and related public health issues.</td>
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<tr>
<td>- Planned expenditure of approximately £7m in 2003-04 on implementing the Illegal Imports Action Plan.</td>
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\(^{123}\) The broad categorisation of schemes and a summary of individual operations is provided within the Annex 1 of the ERDP Annual Report 2001. The appendix sets out information (but no funding details) on ‘complementary initiatives and sources of assistance for rural areas’.

\(^{124}\) The ‘Eat the View’ initiative seeks to raise public awareness and secure more favourable market conditions to enable land managers to adopt more sustainable land management practices.
A further PSA target (number 4) focuses on rural productivity, seeking to ‘reduce the gap...between the least well performing quartile of rural areas and the English median by 2006, and improve the accessibility of services for rural people’. This target links to realising the benefits of the England Rural Development Programme – the ERDP. The ERDP provides a framework for implementing the measures within the EU ‘Rural Development Regulation’ (the RDR)\(^{125}\). It consists of 10 separate schemes. The schemes seek to protect and improve the countryside, develop sustainable enterprises, and help rural communities. The programme runs for 7 years (from 2000-2006), with total spending of £1.6bn from the EU and Government sources. This equates to roughly £228m per year, although the planned expenditure profile shows a steady annual increase each year, starting from approximately £160m in 2000-2001 and rising to over £300m in 2006-07.\(^{126}\) Funding is derived from four sources: an EU financial allocation of funds for implementing the Rural Development Regulation, UK government funding, EU receipts arising from modulation, and matching UK Government funding of the modulated element.

Details of the target and the relevant schemes are set out in the table below:

<table>
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<tr>
<th>Deliver the environmental and economic benefits envisaged in the Rural Development Programme by 2004, including an increase in the area farmed organically and development of the rural economy under the new Rural Enterprise Scheme.</th>
<th>DETR / MAFF PSA Target 5 (2000) and DEFRA Target 4 (2002).</th>
<th>£189.4m on RDR grant funding in 2001-02 (quoted on page 78 of the Curry report). This is comprised of:</th>
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<tr>
<td></td>
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<td>• £51m on the Countryside Stewardship scheme.(^{127})</td>
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<td>• £48m on the Environmentally Sensitive Areas Scheme.(^{128})</td>
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<td>• £27m on the Hill Farm Allowance Scheme.(^{129})</td>
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<td>• £18m on the Organic Farming Scheme. (^{130})</td>
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<td>• £16.6m on the Woodland Grant Scheme. (^{131})</td>
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<td>• £9m on the Farm Woodland Premium Scheme.(^{132})</td>
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<td>• £8.3m on the Rural Enterprise Scheme.(^{133})</td>
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<td>• £4m on the Energy Crops Scheme.(^{134})</td>
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<td></td>
<td></td>
<td>• £4m on the Processing and Marketing Grant Scheme.(^{135})</td>
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<td></td>
<td>• £2m on the Vocational Training Scheme.(^{136})</td>
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<tr>
<td></td>
<td></td>
<td>• £1.5m on the Organic Conversion Information Service.</td>
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\(^{125}\) The ERDP Annual Report 2001 (issued in June 2002) includes a table (page 4) which shows how the 10 schemes in England correspond to the various measures referred to in the Rural Development Regulation (Regulation 1257/1999).

\(^{126}\) A graph showing funding is set out within the ‘England Rural Development Programme Introductory Booklet’ (MAFF. 2000).

\(^{127}\) The scheme provides grants to farmers and non-farming landowners and land managers to manage areas of land in an environmentally beneficial way in return for an annual payment. It applies to many different landscapes provided they are outside the designated ‘Environmentally Sensitive Areas’ covered under the ESA scheme.

\(^{128}\) The ‘ESA’ scheme, introduced in 1987, seeks to encourage farmers to help protect areas of the countryside which are of national historic or wildlife interest. Under the scheme, farmers receive an annual payment linked to the area of land under management, in return for entering into 10 year management agreements in which specific practices have to be maintained.

\(^{129}\) The ‘HFA’ scheme seeks to help the preservation of the farmed upland environment. It seeks to ensure that land in ‘Less Favoured Areas’ is managed sustainably and payments also seek to contribute to the maintenance of the social fabric in upland communities by supporting continued agricultural land use.

\(^{130}\) The OFS aims to encourage the expansion of organic production by providing financial support to farmers moving from conventional methods.

\(^{131}\) The ‘WGS’ provides incentives for the creation and management of woodlands and forests. It is run by the Forestry Commission.

\(^{132}\) The ‘FWPS’ seeks to improve the environment by planting farm woodlands, and in particular to improve the landscape, provide new habitats and increase biodiversity. Payments are made in addition to planting grants made under the Woodland Grant Scheme.

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2.5.2 Market Stimulation

It is worth noting that a number of elements of the public spending itemised above seek to stimulate markets by providing initial financial support. This is the case with the Organic Farming Scheme and the Organic Conversion Information Service as well as the Energy Crops Scheme. Other elements of the package seek to tackle other market barriers, by providing support for rural diversification or taking steps to enhance the competitiveness of the food chain.

More widely, reform of the CAP is central to plans for future Government expenditure on farming. The reform package agreed in June 2003 represents a complex set of actions. At their core is the move to decouple subsidy payments from production and to shift the emphasis of support towards rural development and environmental programmes. As described in the Biodiversity section of this report, increased rates of modulation will result in higher spending on agri-enviromnent initiatives.

While closely linked, of course, to reform of the CAP, the future of farming is also inextricably tied to changes in the wider global market. Domestic and international pressure to open markets, liberalise trade, and abolish subsidies for agricultural production are growing. Despite the impasse recently experienced in Cancun, it seems likely that negotiations will continue within the WTO which seek to reduce trade-distorting support and protection.

The achievement of DEFRA's PSA target to increase agriculture’s gross value added per person excluding support payments will be significantly influenced by a range of external factors, in addition to direct interventions by UK government. Developments in world commodity prices, and the sterling exchange rate will be of importance when determining the output used to produce the gross value added measure.

In addition to public expenditure, DEFRA have committed to action which reduces agriculture’s negative impact on the environment by using a range of instruments. These include regulation, the possible use of economic instruments (the introduction of a pesticides tax, for example), and improving dialogue and consultation with farmers. The Government is also committed to exploring and, where appropriate supporting, non-food uses of crops. Opportunities in this area are investigated, and recommendations made, by the Government Industry Forum on the

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133 The scheme is designed to provide targeted assistance to help farmers and other rural businesses develop more sustainable and more diversified rural economies.

134 The ‘ECS’ provides establishment grants for two energy crops – short-rotation coppice and miscanthus.

135 The ‘PMG’ is aimed at developing processing facilities for primary agricultural products in England for the benefit of processors and the producers of the raw material. For example, the scheme might provide a grant of up to a maximum of 30% for a project to encourage the development of new outlets for agricultural products.

136 The ‘VTS’ provides funding for training that contributes to an improvement in the occupational skill and competence of farmers and others involved in farming and forestry activities.

137 The Government’s position on the use of economic instruments in agriculture was set out at the time of the strategy on food and farming. It is contained within ‘Using Economic Instruments to Address the Environmental Impacts of Agriculture’. This forms section 2 of ‘Farming and Food’s Contribution to Sustainable Development – Economic and Statistical Analysis’ (DEFRA 2002).
Non-Food Uses of Crops\textsuperscript{138}. However, the recommendations in its first annual report did not specify levels of recommended financial support.

The Government’s strategy for farming, in common with the approach of the Curry Report, emphasises the need for partnership and cooperation amongst a wide range of players. An important theme of the strategy (and of the Curry report) is that of ‘reconnecting’ all the elements of the food chain and in particular farmers with their markets. The regional dimension of consultation will be important, with action plans drawn up to develop regional and local implementation approaches to implementing the strategy. The strategy contains a number of items in which Government will play an important part but will not necessarily spend public money. For example, the Government have committed to working with the farming and food industry to promote assurance schemes, such as the Red Tractor, to help re-establish consumer confidence in the safety and quality of British food. They have also committed to encouraging co-operation within the farming industry to promote economies of scale and continuity of supply, subject to the application of competition law.

\subsection*{2.5.3 Institutional Issues}

A significant issue closely linked to public spending on support schemes for farming is the rate of ‘modulation’.\textsuperscript{139} Modulation is also of importance in the context of protecting biodiversity and is also discussed in that section of this report. The Policy Commission recommended that the rate of modulation should be increased.

Much will depend on the decisions the Government takes on the agri-environment ‘entry level scheme’ (ELS) as well as the higher level scheme options which will in time replace the current Countryside Stewardship Scheme and the Environmentally Sensitive Areas Scheme. The aim of the entry level scheme, which is currently being piloted in England (until 2005, when it will be rolled out), is to encourage a large number of farmers across a wide area of farmland to deliver effective environmental management. Consultation on the higher level scheme (‘HLS’) began in October 2003\textsuperscript{140}. The higher level scheme is being designed to concentrate on more complex management actions needed to promote positive action in relation to wildlife conservation, protecting the historic environment, maintaining landscape quality and character, promoting public access, and protecting natural resources.

More broadly, the Government’s proposals for the countryside, set out in the 2001 Rural White Paper\textsuperscript{141} will also have a bearing on the future of farming within rural communities. For example, farm-worker labour diversification and retraining are likely to be assisted by initiatives to improve rural transport, increase ICT coverage and accessibility, provide more skills training and business advice, or rejuvenate market towns with investment from the Regional Development Agencies. A number of these initiatives involve significant public spending. When launching the Rural

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\textsuperscript{138} Website URL: http://148.252.1.12/gifnfc/index.asp
\textsuperscript{139} In the terminology of the CAP, modulation refers to reducing agricultural support payments for another farming-related purpose. In the UK, it has come to mean transferring money from agricultural production subsidies to subsidies for preserving the rural environment. An excellent summary of the origin, interpretation and application of modulation is provided in ‘House of Commons Research Paper 02/65 (21 November 2002): Agriculture, Modulation and Environmental Policy’.
\textsuperscript{140} Ministers announced their intention to review the agri-environment schemes in England in 1999. The review began in 2002. The focus of the review has been in the idea of the ‘Broad and Shallow Entry Level Scheme’ and the ‘Higher Level Entry Scheme’ recommended by the Policy Commission of the Future of Farming and Food.
\textsuperscript{141} ‘Our Countryside: The Future - A Fair Deal For Rural England’ (28 November 2000).
White Paper, the Government announced that it was providing an allocation of £1bn over the next three years on rural programmes, in addition to increased agriculture support, and the £1.6bn (7 year) England Rural Development Programme. One of the ten priorities within the White Paper (‘summarised in the section ‘Ten Ways We Will Make a Difference’) focuses specifically on farming. Within that, the public expenditure commitment refers to the existing ERDP money (the £1.6bn over 7 years). Nevertheless, funding for other rural development priorities, such as providing £37m funding for market town regenerations, may well have knock-on benefits for farming and for the environment.

Public spending to deliver environmental improvement in farms will also be influenced by implementation of the Water Framework Directive (2000/60/EC) which came into force in December 2000. The costs to agriculture of implementing the directive have been estimated to be between £0.6-2.9bn. The wide range reflects the uncertainty of these estimates (uncertainty which is acknowledged in the ‘Updated Partial Regulatory Impact Assessment’) and the fact that the directive’s objectives are broad. Although these indicative estimates make it difficult to predict the potential impact on farmers, the fact that agricultural activities contribute significantly to diffuse water pollution (particularly of nitrate and phosphates) means that implementing the directive will undoubtedly have a significant impact on farming in future. The size of these impacts will become clearer as the necessary technical and economic analysis is carried out but it is already recognised that implementing the Directive brings significant costs which extend far beyond the 2004 spending review period.

### 2.5.4 Assessments Of Adequacy And Public Spending Proposals

A key issue in assessing the adequacy of funding is to make an assessment of the impact which the £500m additional funding provided to the industry has had. Given the significant amount of expenditure involved, and the high profile nature of the announcement (made in response to sectoral crisis and the Curry Report recommendations), it is highly likely that future Government decisions on spending for farming will be strongly influenced by views on whether the £500m has been well spent. Any future spending proposals framed for SR2004 will also need to take this into account.

A number of influential organisations in the UK have called for increased focus, and hence increased spending, on environmental objectives in the context of CAP reform. The Royal Commission on Environmental Pollution, for example, has called for the phasing out of agricultural production subsidies and for production subsidies to be based on environmental cross-compliance. The Environment Agency, having estimated the environmental cost and benefit of agriculture in England and Wales,

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has called for a range of environmental policies to ensure that agriculture makes a positive contribution to environmental stewardship.\textsuperscript{146}

More specifically, suggestions have been made about rates of modulation. The Government’s plans for modulation, contained within statutory regulation,\textsuperscript{147} are that it should increase by 0.5% per year to reach 4.5% by 2006. As mentioned previously, the Curry Commission argued for higher rates of modulation in England and in the devolved administrations, to be increased to 10% from 2004. They also argued that the Government should match the modulated resources in full, at a rate of 100%. The Commission also argued that the UK should be prepared to raise the rate to 20% if CAP reform did not go ahead in 2006-07. The Environment Agency report considered that there was potential to increase modulation rates to the potential maximum of 20% in the context of other measures to deliver environmental improvements in farms. The Countryside Alliance argued to the Curry Commission in 2001 for an accelerated shift towards 20% modulation by 2007.

There is not universal support for increasing modulation rates, however. The National Farmers Union, for example, has made clear its total opposition to modulation on the grounds that it reduces farmers’ income by removing support for production subsidies. The Environment, Food and Rural Affairs Committee have also raised a number of questions about modulation which illustrate the complexity of making radical increases – these relate to the issue of matched Treasury funding, and to the potential economic impacts of switching production patterns which could arise from changing incentives for farmers.\textsuperscript{148} The Government, in setting the existing rates, made clear that it had consulted widely and had set the rates at a ‘relatively low level’ which took account of ‘the current economic situation of the farming industry’. This appears to imply that the Government could introduce a higher rate in future if economic conditions were more favourable.

Given the wide range of initiatives that are already underway in this area, and the fact that large sums of money have already been committed to it, the effects of which have yet to become apparent, it would seem premature for a document of this kind to call for more spending. No specific extra proposals in this area have therefore been made. However, if the progress that has not already been made with environmentally positive farming reform is not to be undermined, it would seem vital that the sums already committed (including the £500m earmarked under the Strategy for Sustainable Farming and Food), but which may not yet have been spent, are in fact deployed as planned, rather than subjected to renegotiation. Furthermore, it should be noted that consideration will need to be given to additional spending beyond 2006 which seeks to build on and take forward the progress made as a result of the £500m spending up to 2005.

\textsuperscript{146} ‘Agriculture and natural resources: benefits, costs and potential solutions’. (Environment Agency. May 2002).
\textsuperscript{149} ‘Environmental Performance Review: United Kingdom 2002’. (OECD)