



RESEARCH PAPER 03/29  
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# *The Sustainable Energy Bill*

**Bill 20 of 2002-03**

The *Sustainable Energy Bill*, (Bill 20 of 2002-03) is sponsored by Brian White who came sixth in the ballot for Private Members' Bills. It is due for second reading on 28 March 2003. The Bill contains a range of measures designed to promote a sustainable energy policy. Principally, it aims to formalise government targets for renewables, energy efficiency, Combined Heat and Power, and carbon dioxide emissions.

While energy policy in the UK is a reserved matter, other related issues are devolved. The bill makes clear which aspects would apply nationally and which would be implemented at the devolved level.

Donna Gore and Brenda Brevitt

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## Summary of main points

The *Sustainable Energy Bill*, Bill 20 2002-03, is a Private Member's Bill sponsored by Brian White who was sixth in the ballot. The Bill is supported by a wide range of interest groups and is to be debated on 28 March 2003.

This paper sets the scene for the Bill. It deals with the concept of sustainable energy, the current energy mix in the UK, key features of the Cabinet Office Performance and Innovation Unit's (PIU) Energy Review, and the Government's Energy Consultation that resulted in the publication of the Energy White Paper. Views on the White Paper from political and interest groups are presented. Key features of the Bill are set out in the light of the recommendations of the Review and content of the White Paper. Reference is also made to the Environmental Audit Committee (EAC)'s report *A Sustainable Energy Strategy? Renewables and the PIU Review* and the Government's response.

Background information about the main themes in the Bill is contained in appendices. These include carbon dioxide emissions that are linked to global warming; renewable energy and energy efficiency, which are two of the principal means by which the Government hopes to deliver its energy policy up to 2050; Combined Heat and Power, a very efficient form of energy production in which both electricity and the associated waste heat of generation are used; and fuel poverty, which is a term applied to households that need to spend more than 10% of their income to maintain a satisfactory heating regime.



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## I Introduction

The *Sustainable Energy Bill*, Bill 20 2002-03, is sponsored by Brian White who came sixth in the ballot for Private Members' Bills in the session.

The Bill is supported by the Sustainable Energy Partnership,<sup>1</sup> a broad coalition of interest groups campaigning for cohesive structures, resources, legislation and statutory targets for the use of low and zero carbon technologies and energy efficiency. The Partnership hope to counter climate change and fuel poverty by strengthening and extending Government commitments to achieve, in the longer term, the goal of a 60% CO<sub>2</sub> reduction by 2050 set by the Royal Commission on Environmental Pollution.

The Bill received its first reading on 11 December 2002:

Brian White, supported by Dr. Desmond Turner, Ms Debra Shipley, Sir Sydney Chapman, Alan Simpson, Ms Joan Walley, Gregory Barker, Mr. Gareth Thomas, Mr. Simon Thomas, Mr. David Amess, Sue Doughty and Mr. Don Foster, presented a Bill to make provision about the development and promotion of a sustainable energy policy; to amend the Utilities Act 2000; and for connected purposes: And the same was read the First time; and ordered to be read a Second time on Friday 28 March, and to be printed.<sup>2</sup>

The Bill takes as its platform some of the recommendations made by the Cabinet Office's Performance and Innovation Unit<sup>3</sup> (PIU) in its Energy Review report,<sup>4</sup> published in February 2002,<sup>5</sup> a precursor to the Government's Energy White Paper, published in February 2003.<sup>6</sup> As such, this paper places the aims of the Bill within the context of the main recommendations of the Energy Review and White Paper. The background to the main themes identified in the Bill is covered in the appendices.

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<sup>1</sup> Members of the Partnership Steering group are the Association for the Conservation of Energy; Association for Environment Conscious Building; Association of Coal Mine Methane Operators; British Biogen; British Hydro; British Energy Efficiency Federation; Combined Heat and Power Association; Cornwall Local Authority Support Programme; Energy Conservation and Solar Centre; Friends of the Earth; GLOBE UK All Party Parliamentary Group; Green Party; Green Liberal Democrats; Help the Aged; National Energy Action; National Federation of Women's Institutes; National Home Improvement Council; National Housing Federation; National Right to Fuel Campaign; PV-UK; Parliamentary Renewable and Sustainable Energy Group (PRASEG); RSPB; Renewable Power Association; SERA; SHELTER; Solar Century; Tory Green Initiative; TRANSCO; UK HECA Forum; UNISON; Unit-[E]; WWF-UK.

<sup>2</sup> HC Deb 11 December 2003, c285

<sup>3</sup> Now the Strategy Unit

<sup>4</sup> The Energy Review. A Performance and Innovation Unit Report. Cabinet Office February 2002. <http://www.piu.gov.uk/2002/energy/report/index.htm>

<sup>5</sup> Library Standard Note SNSC-01038 *Energy Review* explains the background to the energy review and the PIU report

<sup>6</sup> DTI Energy White Paper, *Our Energy Future – Creating a Low Carbon Economy*, Cm 5761, DTI February 2003. <http://www.dti.gov.uk/energy/whitepaper/index.shtml#wp>

## 1. Sustainable – can we define it?

What does ‘sustainable’ mean in terms of our natural resources?

On 17 May 1999 the Government published *A Better Quality Of Life: a strategy for Sustainable Development in the United Kingdom*.<sup>7</sup> The strategy includes a series of around 150 indicators, including a subset of 14 key headline indicators.<sup>8</sup> Progress is monitored and published in an annual report.

The Management of Resources and the Environment indicator expresses energy use in the longer term as coming from new and renewable sources, which effectively means for the generation of renewable electricity. Carbon intensive (fossil fuel) sources fuels will still be required to meet the majority of primary energy demand for transport and heating purposes, but the indicator states that these should be managed in an efficient and ‘environmentally acceptable’ manner.

The PIU report states that:

‘Sustainable development’ is an overarching goal of Government policy. The notion of sustainability originally stems from environmental concerns, but sustainable development is now defined in terms of trying to balance progress in high level economic, environmental and social objectives, rather than just environmental goals’.<sup>9</sup>

The Department of Trade and Industry (DTI) states that the sustainable use of natural resources refers to use which can be maintained at the current level now and for generations to come.<sup>10</sup>

In terms of energy use, the DTI’s Public Service Agreement (PSA) targets for the period 2003-2006 place the issue of sustainability in the context of energy security, competitiveness, fuel poverty and environmental considerations.<sup>11</sup>

PSA target 4 states:

4. Ensure the UK ranks in the top 3 most competitive energy markets in the EU and G7 in each year, whilst on course to maintain energy security, to achieve fuel

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<sup>7</sup> Cm 4345

<sup>8</sup> Sustainable development: the UK government’s approach.  
[http://www.sustainable-development.gov.uk/uk\\_strategy/factsheets/monitor/index.htm](http://www.sustainable-development.gov.uk/uk_strategy/factsheets/monitor/index.htm)

<sup>9</sup> PIU report Para 3.9 p35

<sup>10</sup> [http://www.dti.gov.uk/about/psa/psa\\_target\\_4.htm](http://www.dti.gov.uk/about/psa/psa_target_4.htm)

<sup>11</sup> The DTI PSA targets are set out in Chapter 12 of "2002 Spending Review: Public Service Agreements" (Cm 5571)  
[http://www.hm-treasury.gov.uk/Spending\\_Review/spend\\_sr02/psa/spend\\_sr02\\_psadti.cfm](http://www.hm-treasury.gov.uk/Spending_Review/spend_sr02/psa/spend_sr02_psadti.cfm)

poverty objectives; and (joint target with DEFRA) improve the environment and the sustainable use of natural resources, including through the use of energy saving technologies, to help to reduce greenhouse gas emissions by 12.5% from 1990 levels and moving towards a 20% reduction in carbon dioxide emissions by 2010.<sup>12</sup>

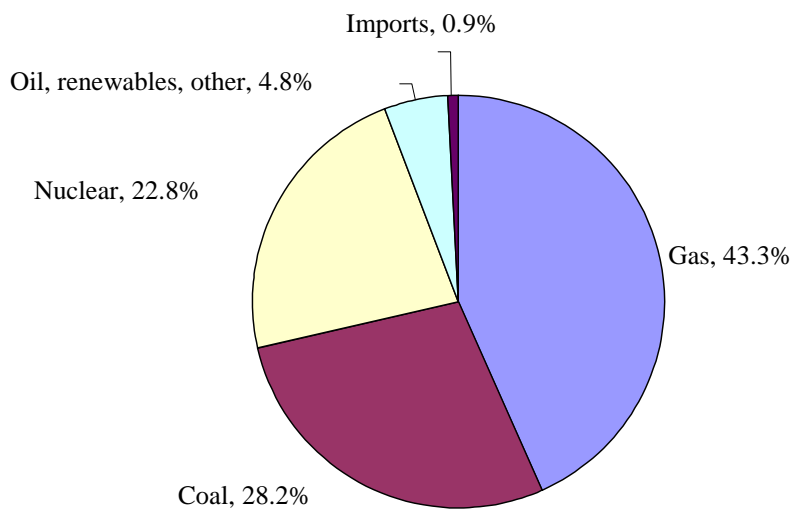
The basis of the Government's sustainable energy policy is thus seen within the context of a liberalised energy market, as one that enable us to reduce emissions without compromising economic growth.

In the Bill itself clause 8 (1) defines "sustainable energy policy" as "measures which reduce emissions of carbon and methane and promote reductions in the use of energy, and, for the avoidance of doubt, does not include nuclear power"

## II The current balance of electricity generation in the UK

The balance of fuels used for the generation of electricity in the United Kingdom in the third quarter of 2002 is shown in the chart below.

**Fuels used in the generation of electricity, UK, 3rd Quarter 2002**



Source: DTI *Energy Trends* December 2002.

During the 1990s gas replaced coal as the principal source of fuel for electricity generation in the UK, accounting for over 40 per cent of generation in the latter part of 2002. The amount of gas used depends on wholesale gas prices; in 2001 gas prices were higher and therefore less was used for generation but the lower prices in 2002 have led once again to a growth in the amount of gas used. Although UK coal production has fallen since the 1980s coal still represents a significant proportion of the energy mix,

<sup>12</sup> <http://www.dti.gov.uk/about/psa/>

accounting for almost 30 per cent of electricity generation in the latter part of 2002. Some of this is reliant on cheaper imports of steam coals. Nuclear power now accounts for between 21 and 25 per cent of generation in the UK; output depends on the level of unexpected and planned outages for maintenance. Nuclear capacity, standing at nearly 12 GWe<sup>13</sup>, is over three times the capacity in the 1970s.<sup>14</sup> This will decline as stations are decommissioned if no new nuclear stations are built. Of the remaining output, less than three percentage points is accounted for by renewable energy resources.

The Energy White Paper does not set targets for the share of total energy or electricity supply to be met from different fuels, preferring instead a market-based framework, reinforced by long term policy measures, to set an appropriate energy balance.

### III The Energy Review

The Energy Review was announced by the Prime Minister on 25 June 2001.<sup>15</sup> It was carried out by the Performance and Innovation Unit of the Cabinet Office with a remit to review the long-term, strategic issues of energy policy for Great Britain up to 2050 taking into account the challenge of global warming while ensuring reliable and competitive energy supplies. The aim was to set out the objectives of energy policy and develop a strategy to ensure that policy was consistent with long-term goals.

The outcome was published in a report by the PIU to the Government on 14 February 2002.<sup>16</sup> The key recommendations are as follows, with the main recommendations that are pertinent to the *Sustainable Energy Bill* emboldened:

- (i) energy security should be addressed by a variety of means, including enhanced international activity and continued monitoring. However, there appear to be no pressing problems connected with increased dependence on gas, including gas imported from overseas. The liberalisation of European gas markets will make an important contribution to security;
- (ii) continued attention to long-term incentives is needed, though recent levels of investment in the energy industries have been healthy;
- (iii) there is a strong likelihood that **the UK will need to make very large carbon emission reductions over the next century**. However, it would make no sense for the UK to incur large abatement costs, harming its international competitiveness, if other countries were not doing the same;

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<sup>13</sup> 1 gigawatt of electricity (GWe) equals 1,000 (MWe) megawatts or 1,000,000 kilowatts (kWe) of electricity.

<sup>14</sup> DTI UK Energy Sector Indicators 2001  
[http://www.dti.gov.uk/energy/inform/energy\\_indicators/2001/ind02.zip](http://www.dti.gov.uk/energy/inform/energy_indicators/2001/ind02.zip)

<sup>15</sup> HC Deb 25 June 2001 c 18W

<sup>16</sup> The Energy Review. A Performance and Innovation Unit Report. Cabinet Office February 2002.  
<http://www.piu.gov.uk/2002/energy/report/index.htm>

- (iv) keeping options open will require support and encouragement for innovation in a broad range of energy technologies. The focus of UK policy should be to establish new sources of energy which are, or can be, low cost and low carbon;
- (v) the **immediate priorities** of energy policy are likely to be most cost-effectively served by **promoting energy efficiency and expanding the role of renewables**. However, the options of new investment in nuclear power and in clean coal (through carbon sequestration) need to be kept open, and practical measures taken to do this;
- (vi) the **Government should use economic instruments to bring home the cost of carbon emissions** to all energy users and enable UK firms to participate in international carbon trading. Achieving deep cuts in carbon would require action well beyond the electricity sector where cuts have been concentrated in recent years;
- (vii) step changes in energy efficiency and vehicle efficiency are needed, with new targets for both. **In the domestic sector, the Government should target a 20% improvement in energy efficiency by 2010 and a further 20% in the following decade;**
- (viii) **the target for the proportion of electricity generated from renewable sources should be increased to 20% by 2020;**
- (ix) institutional barriers to renewable and combined heat and power investments should be addressed urgently; and
- (x) the Government should create a new cross-cutting Sustainable Energy Policy Unit to draw together all dimensions of energy policy in the UK.<sup>17</sup>

The Energy Review informed the Government's consultation on energy policy that culminated in the publication of its Energy White Paper in February 2003.

The Environmental Audit Select Committee report *A Sustainable Energy Strategy? Renewables and the PIU review*<sup>18</sup> was published in July 2002. The Government's response to its recommendations was published in February 2003<sup>19</sup> and refers to Sections of the Energy White Paper. Material from the EAC report and the Government's response are quoted in this paper.

## IV The Energy White Paper

On 14 May 2002 Energy Minister, Brian Wilson, launched the Government's consultation on energy policy<sup>20</sup> that followed publication of the Energy Review. The consultation closed on 13 September 2002, and the White Paper was published on 24 February 2003.

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<sup>17</sup> Energy Policy: Key Issues for Consultation, DEFRA, DTI & DTLR, May 2002

<sup>18</sup> Environmental Audit Committee, Fifth report, 22 July 2002, HC 582 2001-02  
<http://pubs1.tso.parliament.uk/pa/cm200102/cmselect/cmenvaud/582/58202.htm>

<sup>19</sup> Environmental Audit Committee, Government response to the Committee's fifth report of session 2001-02, Second special report of session 2002-03, 26 February 2003, HC 471 2002-03  
<http://pubs1.tso.parliament.uk/pa/cm200203/cmselect/cmenvaud/471/47102.htm>

<sup>20</sup> Energy Policy: Key Issues for Consultation, DEFRA, DTI & DTLR, May 2002

The full text and a summary are available on the DTI website.<sup>21</sup> A succinct summary of measures in the White Paper, organised on a subject basis, is presented in a DTI press notice.<sup>22</sup> The proposals were unveiled by Patricia Hewitt, Trade and Industry Secretary, to the House of Commons.<sup>23</sup>

The White Paper sets out a strategy to reduce harmful carbon emissions linked to global warming over the next 50 years with a major expansion of renewable energy and improvements in energy efficiency. While it acknowledges the carbon-free role of nuclear power, there are no proposals to build new stations, but it does not rule this out at some stage in the future.

The Paper proposes four goals for the government's energy policy:

- to work towards cutting emissions of carbon dioxide by 60% by 2050;
- to maintain the reliability of energy supplies;
- to promote competitive energy markets in the UK and beyond; and
- to ensure that every home is adequately and affordably heated.<sup>24</sup>

The first of these is an acceptance of the Royal Commission on Environmental Pollution's (RCEP's) recommendation that the UK should put itself on a path towards a reduction in carbon dioxide emissions of some 60% from 1990 levels (just above current levels) by about 2050.<sup>25</sup>

The White Paper outlines how a reduction of 15-25 million tonnes per annum in carbon emissions (MtC) can be achieved by 2020 as a necessary step towards a 60% reduction by 2050:

#### How cuts of 15-25MtC could be achieved by 2020

	Estimated MtC Reductions
Energy efficiency in households	4-6
Energy efficiency in industry, commerce and the public sector	4-6
Transport: continuing voluntary agreements on vehicles and biofuels for road transport	2-4
Increasing renewables	3-5
Carbon trading scheme	2-4 <sup>26</sup>

A range of practical measures are proposed to underpin the Government's policy:

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<sup>21</sup> DTI Energy White Paper, *Our Energy Future – Creating a Low Carbon Economy*, Cm 5761, DTI February 2003. <http://www.dti.gov.uk/energy/whitepaper/index.shtml#wp>

<sup>22</sup> DTI press notice P/2003/114, *Energy White Paper Statement by the Secretary of State*, 24 February 2003

<sup>23</sup> HC Deb 24 February 2003 c 26-44.

<sup>24</sup> DTI press notice P/2003/113, *Government unveils green future for energy*, 24 February 2003

<sup>25</sup> RCEP 22<sup>nd</sup> Report: *Energy-The Changing Climate*, 16 June 2000

<sup>26</sup> DTI press notice P/2003/113, *Government unveils green future for energy*, 24 February 2003

- An *ambition* to double the share of electricity from renewables by 2020 from the existing 2010 target of 10%;
- £60m in new money for renewable projects bringing spending on renewable energy up to £348 million in total over four years;
- reforming planning rules to unblock hurdles to renewable energy;
- a new carbon trading system to come into effect from around 2005 that will give energy suppliers and consumers incentives to switch to cleaner energy;
- speeding up changes to building regulations and setting tougher standards for energy efficiency in new homes, refurbishments and electrical products;
- new incentives for energy suppliers to help customers improve energy efficiency;
- creating a new Energy Research Centre to help develop the latest cutting edge energy technologies;
- setting up Fuel Cells UK to put UK industry at the forefront of clean fuel technologies;
- supporting cleaner coal technology and establishing an investment aid scheme to help existing viable pits develop new reserves; and
- working with the EU and car manufacturers to improve vehicle efficiency<sup>27</sup>

A Government report will be produced annually showing progress towards cutting carbon emissions and other measures in the White Paper

The proposals for renewable energy build upon the foundation already created by the Renewables Obligation<sup>28</sup>, which ensures that power companies supply increasing amounts of renewable energy, and exemption from the Climate Change Levy<sup>29</sup>. Together these are worth about £1 billion annually to the renewables industry.

The Government already has a target of 10% of electricity generated from renewables by 2010, which is ambitious since the figure is currently only about 3%. The PIU's recommendation of 20% by 2020 has been accepted in the White Paper as an 'aspirational goal' rather than a firm target.

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<sup>27</sup> *ibid*

<sup>28</sup> See appendix: Renewable energy

<sup>29</sup> The Climate Change Levy is a levy on the business use of fuel which was introduced in April 2001.

The White Paper recognises that within the next thirty years, the existing fleet of nuclear power stations will have reached the end of their working lives. It sets out Government policy for nuclear power in the context of the need to cut carbon emissions:

the priority is for renewables and energy efficiency and although nuclear power is currently an important source of carbon free electricity, its current economics make it an unattractive option and there are also important issues of nuclear waste to be resolved.

The White Paper does not contain proposals for building new nuclear power stations, but does not rule out the possibility that at some point in the future new nuclear build might be necessary if we are to meet our carbon targets.

Any further decision to proceed with the building of new nuclear power stations would only follow a full public consultation.<sup>30</sup>

The new policies are expected to add between five and 15% to household electricity bills by 2020. Industrial electricity and gas prices will rise by up to 25% and 30% respectively over the same period.

## V Views on the Energy White Paper

### A. Political

Crispin Blunt, the **Conservative** front bench spokesman for trade, energy and science, was asked what he expected from the Energy White Paper in the context of the *Electricity (Miscellaneous Provisions) Bill*, HL Bill 30 2002-03. This Bill is designed to enable the Government to fulfil its commitment to British Energy.

He believes that nuclear power should be exempt from the **Climate Change Levy**, a charge imposed on commercial fuel bills to encourage energy efficient practices-in particular the use of environmentally friendly carbon dioxide free fuels-because nuclear stations do not produce carbon dioxide. He thought the White Paper would not contain a carbon abatement measure from which renewable and nuclear generators would be exempt because neither produces carbon dioxide.

**Question:** What do you expect from the government's Energy White Paper?

**Crispin Blunt:** An alarming comment made by Brian Wilson is that the Energy White Paper will have no financial consequences for British Energy, that implies government is not going to bring forward any over-arching carbon instrument that

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<sup>30</sup> DTI press notice P/2003/113, *Government unveils green future for energy*, 24 February 2003



would reward both renewables and nuclear generators of electricity for producing electricity in a way that does not contribute to the greatest environmental threat that we face, climate change. That would be a profound missed opportunity.

**Question:** Nuclear power should be exempted from the climate change levy?

**Crispin Blunt:** Of course – if it is a climate change levy then they should be exempt from it, the climate change levy was designed to penalise producers of CO<sub>2</sub>, nuclear electricity produces no CO<sub>2</sub>. In its current form CCL is no more than an energy tax.<sup>31</sup>

Following the Government announcement of the publication of the White Paper, the Shadow Trade Secretary, Tim Yeo, elaborated on the Conservative view. He said the White Paper was “long on aspiration and short on conclusions”, and “its content is wholly inadequate to meet the challenges that Britain faces.”<sup>32</sup>

He welcomed the commitment to improving **energy efficiency** but warned against too great an expectation of the degree of carbon saving that it could achieve. He noted that the White Paper “does not provide any policies to deliver micro combined heat and power in the future, which could be an important contributor to greater energy efficiency and generating capacity.”<sup>33</sup>

On **climate change** he questioned the commitment of other countries to carbon saving, and the suitability of the CCL:

The Conservative party fully supports Britain playing its part in meeting internationally agreed targets to tackle climate change. That process originated under the Conservative Government. Will the Secretary of State tell us whether she believes that other countries will now commit to a 60 per cent. target cut in carbon dioxide emissions by 2050? Will she confirm that it would be economically damaging for Britain to impose such a target unilaterally? What discussions have taken place recently with the world's largest emitter, the United States, about its commitment to reducing carbon dioxide emissions? Why are the Government persisting with the climate change levy as one of their primary instruments for achieving a reduction? Does not the Secretary of State recognise that the climate change levy is unfair, arbitrary and ineffective in its impact? Does she understand that a comprehensive emissions trading system would provide a fairer and more efficient way of cutting carbon dioxide emissions? Why does the White Paper not admit the failure of the climate change levy, and announce its immediate replacement?

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<sup>31</sup> Crispin Blunt – Shadow minister for trade, energy and science, ePolitx, 6 February 2003.

<sup>32</sup> HC Deb 24 February 2003 c29

<sup>33</sup> HC Deb 24 February 2003 c30

Will the Secretary of State confirm that the Government's existing emissions trading system is incompatible with the European Union scheme, and that the EU scheme itself is not comprehensive?<sup>34</sup>

Patricia Hewitt replied:

As for the commitments of other countries, today, my right hon. Friend the Prime Minister announced that he and the Swedish Prime Minister have written to the Greek Prime Minister as President of the European Union to urge all our European partners to sign up to the target of 60 per cent. reductions by 2050.

The hon. Gentleman complained about the climate change levy, but that levy and the climate change agreements made under it, which deliver an 80 per cent. discount on the levy, are proving to be an extremely effective incentive for much greater energy efficiency and cleaner electricity within our industry, just as we thought that they would be.<sup>35</sup>

Tim Yeo commented that he thought the **renewables** target was unlikely to be reached:

I welcome the overdue signs of realism in Ministers' minds in relation to renewable energy. Will the Secretary of State admit that when the White Paper describes the target of 10 per cent. of Britain's energy being supplied from renewable sources by 2010 as "very challenging", what it really means is that the chances of meeting it are remote? Will she confirm that that target can be met only at huge cost to both consumers and taxpayers, giving the lie to the Government's claim that they are concerned about affordable energy and fuel poverty?

Does the Secretary of State recognise that onshore and offshore wind, the two sources identified in the White Paper as the largest contributors of renewable energy in 2010, are not reliable sources, in the sense that there is no guarantee that the wind will blow when electricity demand peaks?<sup>36</sup>

Patricia Hewitt replied:

Yes, it is a challenging target for 2010, and I mean precisely that. We put in place the renewables obligation only last year, so it is not surprising that it has not had much effect recently. We know very well, and we say in the White Paper, that we need to do far more year on year to ensure that we get the renewables electricity that we need, but the renewables obligation will build up to an enormous level of support for the renewables industry. It will be backed by the capital grants programme that I have just announced over the next four years and it will be reinforced from 2005 by the emissions trading scheme.<sup>37</sup>

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<sup>34</sup> HC Deb 24 February 2003 c30

<sup>35</sup> HC Deb 24 February 2003 c31-2

<sup>36</sup> HC Deb 24 February 2003 c30

<sup>37</sup> HC Deb 24 February 2003 c32

Mr Yeo also drew attention to a perceived lack of new policy on **Combined Heat and Power (CHP)**:

The Government are failing to meet their existing CHP targets, no new CHP arrangement is being constructed, and all the White Paper offers is

"review existing guidance . . . continue to emphasise the benefits of CHP . . . work with Ofgem to keep these developments under review"

—anything, in other words, except tangible action to promote CHP.<sup>38</sup>

Patricia Hewitt reassured him that the country is already half way to achieving the 2010 target, and the measures in the White Paper will enable the remainder of the target to be met.

Tim Yeo criticised an apparent lack of decision on **nuclear power**:

Will the Secretary of State explain why the Government have ducked any decision on nuclear power? Does that mean they believe that existing nuclear power stations, which provide more than a fifth of current energy supplies, do not need to be replaced? What more do the Government need to know about nuclear technology or public attitudes before making up their mind?

Given that the lead time for planning, approving and building nuclear power stations is very long indeed, does the Secretary of State agree that by requiring both the fullest public consultation and the publication of yet another White Paper before any decision can be made, the Government are effectively trying to kill off Britain's nuclear industry? Does she agree that in doing so she has made Britain even more dependent on imported gas? Are the Government content to make Britain's electricity depend on gas supplies from countries such as Russia and Algeria? Does the Secretary of State believe that in the event of a future energy crisis, Britain—at the western end of a gas pipeline that passes alongside Russia's biggest gas customer, Germany—could rely on that source of supply? Does she agree that, at the very least, the situation would require the construction of huge new gas storage facilities? Where will those be, and who will pay for them?<sup>39</sup>

Patricia Hewitt explained that the Government are attempting to place priority on renewables and energy efficiency but do not rule out new nuclear build if it fails to deliver:

Vincent Cable, the **Liberal Democrat** trade and industry spokesman, commented on several issues during the debate following the publication of the White Paper. He

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<sup>38</sup> HC Deb 24 February 2003 c30

<sup>39</sup> HC Deb 24 February 2003 cc30-1

welcomed the emphasis on **energy efficiency and conservation** but questioned the Government's commitment to them since he had heard:

the Chancellor of the Exchequer is going to cut the warm front budget—the main practical instrument through which funding for energy conservation is delivered—by 15 per cent. from April? Why have the Government not come forward with proposals to replace those in the excellent private Member's Bill that was tabled by the hon. Member for Brighton, Kemptown (Dr. Turner) but sabotaged in the previous parliamentary Session? <sup>40</sup>

Patricia Hewitt replied that no decision has been made on the next stage of funding.

The Bill in question is the *Home Energy Conservation (No 2) Bill*, Bill 174 2001-02, a Private Member's Bill which included energy conservation and fuel poverty measures, but which fell.

Vincent Cable questioned whether the 'new' money announced for **renewables** was additional:

Secondly, I welcome the emphasis on renewables, but can the Secretary of State confirm that—as I believe is correct—of the £1 billion of funding that she is discussing, not one penny is additional money? All of it constitutes funding already committed to support for renewable power, and the only funding outside that budget that will be made available is an additional £60 million. That contrasts with the hundreds of millions of pounds that her Department is throwing at the failed energy company British Energy. <sup>41</sup>

Patricia Hewitt assured him that there was new funding and there would be more in future:

I can confirm that there is indeed new funding of £60 million, which comes from the non-fossil fuel obligation, and a further allocation of £38 million that was part of last year's spending review settlement. That was allocated generally for energy, but I have now allocated it specifically to capital grants for the renewables programme. I stress to the hon. Gentleman that support for renewables does not, of course, come only from the taxpayer. It will come, in even more sizeable form, from the renewables obligation and from the carbon trading system. <sup>42</sup>

On **CHP** Vincent Cable said:

Thirdly, on CHP, I welcome the Prime Minister's lending his authority to the White Paper this morning, but I wonder whether the Secretary of State

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<sup>40</sup> HC Deb 24 February 2003 cc33

<sup>41</sup> HC Deb 24 February 2003 c33

<sup>42</sup> HC Deb 24 February 2003 c34

remembers that four years ago, the Prime Minister launched the Whitehall CHP project—a project that now runs for only four hours a day. In the light of the Conservative spokesman's comments, what concrete action is the Secretary of State taking to deal with the immediate problems associated with CHP, given that output has fallen by 17 per cent. in the past year, and that three quarters of all capacity is currently under-utilised?<sup>43</sup>

Patricia Hewitt replied that action is being taken on CHP:

The hon. Gentleman also mentioned CHP. We all know that it is difficult at the moment to make the economics of CHP work, with gas prices high and electricity prices low. That price situation will not exist for ever and, indeed, we spell out in the White Paper how we see electricity and other energy prices rising in the future, especially under the impact of the carbon emissions trading scheme. We are also taking action with the regulator, Ofgem, to ensure that the regulatory framework is properly suited to the needs of CHP and more generally distributed small-scale renewable sources. We are also proposing to put a statutory duty on the regulator to assess all regulatory proposals on their environmental impact. That will help to ensure that we get the regulatory climate right and obtain the investment that is needed in new distribution and storage infrastructure<sup>44</sup>

Vincent Cable criticised the Government's perceived procrastination on **nuclear power**:

I congratulate the Secretary of State on standing up to the pressure that she was undoubtedly under to commit herself to new nuclear power in the White Paper. That is to be commended, but given that, in addition to the well-known security and environmental difficulties, the economics of new nuclear power are hopelessly unattractive, why do the Government feel that waiting another few years before producing the definitive view on this issue will add any new information whatever? Does she not accept that further procrastination both blights investment by the nuclear power industry, and makes it much more difficult for new investment to take place in renewables and other sources?<sup>45</sup>

Patricia Hewitt replied to him and Tim Yeo about this issue:

I know that the Liberal Democrats would like to rule out nuclear power forever, and preferably close it all down today—although that may not be the hon. Gentleman's personal view. The Tories would like us to commit to an entire new fleet of nuclear power stations today. Both are wrong. We have taken the responsible course that will meet this country's energy security needs and deliver our environmental targets<sup>46</sup>

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<sup>43</sup> HC Deb 24 February 2003 c33

<sup>44</sup> HC Deb 24 February 2003 c34

<sup>45</sup> HC Deb 24 February 2003 c33

<sup>46</sup> HC Deb 24 February 2003 c34

Finally Vincent Cable dismissed problems with **energy imports** and focused attention on **infrastructure problems**:

Finally, I also welcome the very sane and balanced way in which the White Paper deals with energy imports, particularly gas. However, does the Secretary of State not acknowledge that the main threat to this country comes not from dastardly foreigners such as the Norwegians, but from the serious problem that is building up in the industry of large-scale underinvestment in infrastructure such as storage, terminals for liquefied natural gas, and pipelines? When are the Government going to address this very serious and imminent problem?<sup>47</sup>

Vincent Cable also set out his response to the government's energy white paper on his website.

The white paper was an overdue response to an impressive analysis from the Performance and Innovation Unit of the Cabinet Office - which provided a holistic assessment of the state of the energy market, and offered the hope of a genuinely coherent energy policy for the future.

The sentiments of the white paper are welcome, and its long-term aims are laudable - but despite the fanfare, it's short of the detail of how the government's aspirations are going to be delivered.

In particular, despite their inclusion in the PIU report, there are no additional targets for the development of renewables and, despite the universal recognition of its importance, an absence of formal targets for increases in energy efficiency. Moreover, the funding picture for these aspects of the equation is unpromising too: New money for renewables under the white paper is limited to £60 million of the £1000 million headline figure announced by the secretary of state; and the WarmFront scheme has proved highly successful in promoting domestic energy efficiency, and yet its budget is to be cut.

The delay in the production of the white paper contributed to real market uncertainty. Taking the combined heat and power market as an example, there has been a reduction of some 17 per cent in capacity, and currently about 75 per cent of remaining capacity is idle. More generally, there has been a fall of over 50 per cent in the number of proposed renewables and CHP schemes reaching formal planning stage.

For the future, therefore, the real danger is that the absence of detail in the white paper on how the government proposes to deliver its aspirations is not just a disappointment - but rather that it will continue market uncertainty and damage.

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<sup>47</sup> HC Deb 24 February 2003 c33-4

For those who are suspicious of the potential of renewables, this uncertainty may prove to be a self-fulfilling prophecy.<sup>48</sup>

Mr Cable's comments on the failure of the White Paper to set targets along the lines recommended by the PIU report effectively echoes the aims of the Sustainable Energy Bill, with its clear focus on target setting as a mechanism to achieve a sustainable energy future.

## B. Interest groups

The *Financial Times* summarised criticism of the White Paper thus:

The government was accused of fudging key issues, particularly nuclear power. Even the environmental lobby, which welcomed the broad thrust of the new policies, expressed doubts about their practical implementation.(...)

Green groups were disappointed by the lack of a clear decision on nuclear,... . They were also muted in their response to the government's new green energy credentials.

Friends of the Earth said plans to expand renewable energy and increase energy efficiency "must be accompanied by clear timetables, targets and investments".

A sense of mild disappointment permeated many reactions. The Electricity Association called the white paper a "missed opportunity". The Confederation of British Industry warned that government might have set clear objectives, but "the route to achieving them is often built on faith".

The sense of targets founded on hope, rather than on concrete policies, was echoed by many groups set to benefit from an increase in green energy. The Renewables Power Association claimed the white paper contained "too little substance" to attract the investment needed to meet its aims.<sup>49</sup>

The **Chemical Industries Association** (CIA), an energy-intensive user, cautiously welcomed the White Paper:

The CIA supports a sustainable energy policy and welcomes the Government's continued commitment to liberalised and competitive markets, for example, in setting the proportions of each technology (gas, coal, nuclear, renewables etc.) that will be used to generate the UK's electricity. While the CIA supports measures to boost research into competitive renewable technologies, we welcome the rejection of a firm target of 20% renewable-generation by 2020, which would have encouraged excessive cost.

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<sup>48</sup> Vincent Cable : Energy Plan is laudable but lacks detail, 25 February 2003, available at <http://www.epolitix.com/webminster/vincent-cable>

<sup>49</sup> "Critics accuse ministers of fudging key issues", *Financial Times*, 25 February 2003.

As the detail of policy is developed, we will be looking for measures to provide industry with secure energy supplies at internationally competitive prices. In developing policy instruments to achieve carbon reduction targets, the Government must pay close attention to the effects on energy intensive sectors. In assessing the impact of making real progress on emissions by 2020, the White Paper considers the costs to the economy as a whole. However, for many chemical producers the proportion of the burden will be significantly higher. The Government must ensure that the UK remains broadly in step with its competitors and that industry is not burdened with excessive cost, which might drive it abroad, serving neither environmental nor economic sustainability.<sup>50</sup>

The views of the Energy Savings Trust, National Environmental Research Council, Institute of Directors, Woodland Trust, UK Offshore Operators Association, Country Land and Business Association, Countryside Alliance, Construction Products Association, Institute of Electrical Engineers and Ofgem, collated by ePolitix are also available online.<sup>51</sup>

**Friends of the Earth** broadly welcomed the White Paper proposals:

The acceptance that greenhouse gas emissions must be cut and that energy policy must deliver this is crucial. The decision to back renewables and increased energy efficiency rather than nuclear power is extremely welcome and represents a victory for common sense.<sup>52</sup>

Sir Bernard Ingham, secretary of the **Supporters of Nuclear Energy Group**, derided the White Paper as “incompetent, irrelevant and frankly dangerous. At a time when greenhouse emissions are rising in Britain, it proposes to continue to allow the nuclear industry, which emits no greenhouse gases, to run down.” He added “Wind power is not only seriously intermittent, it is also seriously expensive.”<sup>53</sup>

## VI The Bill

The Bill is available electronically,<sup>54</sup> accompanied by Explanatory Notes that cover it in detail. The Explanatory Notes were not available at the date of publication of the paper. The following is a brief overview of the contents of the Bill.

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<sup>50</sup> CIA Statement: Energy White Paper, 28 February 2003, available at [www.cia.org.uk](http://www.cia.org.uk)

<sup>51</sup> Forum Brief: Energy white paper, 25 February 2003, prepared by ePolitix, available at <http://www.epolitix.com/webminster/vincent-cable>

<sup>52</sup> FoE press notice, *Energy White Paper Briefing*, 21 February 2003, available at [http://www.foe.co.uk/resource/press\\_releases/energy\\_white\\_paper\\_briefin.html](http://www.foe.co.uk/resource/press_releases/energy_white_paper_briefin.html)

<sup>53</sup> *ibid*

<sup>54</sup> <http://pubs1.tso.parliament.uk/pa/pabills.htm>



The overall aim of the Bill is to develop and promote a sustainable energy policy. **Clause 1(1)** requires the Government to publish an annual report to Parliament on the steps it is taking to develop and promote this. The White Paper contains a Government commitment to publish such a report and the Bill gives it statutory force.

The report must contain measures the Government intends to take to move towards four main targets:

**Clause 1(1)(a)(i)** - the achievement of a target of 25% of electricity generated from renewable sources by 2020. The official Government target is 10% by 2010 which is considered to be ambitious because the present figure is about 3%. The PIU Report recommended the Government extends its target to 20% by 2020, and in the White Paper the Government sets this as an ‘aspirational target’. The 25% target has received backing from the Institute of Public Policy Research<sup>55</sup>, and the Government’s independent sustainable energy advisor, the Sustainable Development Commission.<sup>56</sup>

**Clause 1(1)(a)(ii)** - the achievement of a target of 10GWe<sup>57</sup> generated by Combined Heat and Power (CHP) by 2010, and a further 10 GWe by 2020. The current figure is about 5GWe. The first target was set by the Government in its Climate Change Programme in 2001, and was reiterated in the draft CHP Strategy and White Paper. The 2020 target reflects a desire by the CHP industry, which is experiencing problems (see appendix), for a strong Government commitment to the future of CHP to encourage investment in this energy efficient technology.

**Clauses 1(1)(a)(iii) & 1(1)(b)** - the achievement of a reduction in carbon dioxide emissions of 20% by 2010, and the introduction of policies that would reduce such emissions by 60% by 2050 based on 1990 levels.<sup>58</sup> These are respectively the Government’s domestic goal, and the recommendation of the Royal College on Environmental Pollution and White Paper aim.

The annual reports must also include an assessment of the role of a wide range of renewables and low-carbon technologies, and may include national, regional or local targets for them (**clause 1(2)**). The reports must also include an assessment of progress towards the energy certification and inspection requirements of the EU Directive about the energy performance of buildings (**clause 1(3)**), and list any achieved or planned new capacity and how it is to be accomplished by the specified renewable and low-carbon technologies (**clause 1(4)(a)&(b)**). The report should include information about the achievement of any national, regional or local objectives or targets set in relation to the Act (**clause 1(5)**).

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<sup>55</sup> The Generation Gap, Institute of Public Policy Research, 2003

<sup>56</sup> Agenda 2003: Where Next for Sustainable Development, Sustainable Development Commission, February 2003.

<sup>57</sup> 10 GWe is 10 gigawatt of electricity = 10,000 megawatts of electricity.

<sup>58</sup> Carbon dioxide emissions in 1990 were slightly above current levels.

**Clause 2(1)** requires the Government to take steps to achieve an improvement in domestic energy efficiency of at least 20% by 2010 based on 2002 levels. The PIU recommended this target and an additional one of a further 20% between 2010 and 2020. The former target is also backed by the Energy Savings Trust and the Sustainable Development Commission. Although energy efficiency was a corner-stone of the White Paper no targets were specified. The Bill lists a range of steps that may be included to help achieve the target (**clauses 2(1)(a) –(h)**).

Steps that are reasonably practicable must be taken to carry out measures specified in the energy conservation reports published under the *Home Energy Conservation Act 1995* (**Clause 2(2)**).

Targets for domestic energy efficiency in residential accommodation may be set up to 2010 (**Clause 2(3)**) and after that date (**Clause 2(6)**). Different targets may be set for different areas (**Clause 2(4)**), and measures must be put in place to achieve them (**Clause 2(5)**).

**Clause 3** amends the *Electricity Act 1989* to exempt CHP generators from the Renewables Obligation (RO). The RO obliges licensed electricity suppliers in England and Wales to supply a specified portion of their electricity from renewables. At present it is 3%. Suppliers who cannot meet this percentage must purchase RO Certificates (ROCs) to make up their shortfall.<sup>59</sup> While most CHP plant is designed to feed a particular industrial operation or site, if there is spare capacity the owner can become a licensed electricity supplier and sell it to the network. In this case he will be subject to the RO. Since CHP is not classed as renewable, the owner would have to buy RO Certificates to make up for his obligation, and the price of these is likely to rise in future. This places CHP in the same position as other generators such as combined cycle gas turbines and coal generating plant which are less energy efficient than CHP and emit far more carbon dioxide per unit of electricity generated. It is argued that exemption from the RO for CHP is justified because of its energy efficient status, and that the exemption would help redress the problems CHP faces (see appendix) and give a welcome boost to the technology. The CHP Association estimates that without the exemption the CHP sector will pay about £100 million to support other renewable technologies by 2010.

**Clause 4** amends the *Utilities Act 2000*, by placing a statutory duty on the regulatory body, the Gas and Electricity Markets Authority (GEMA), to have regard to the achievement of a sustainable energy policy when carrying out its duties. It includes the production of environmental impact assessments on significant new policies. This is an aim of the White Paper and is accepted by Callum McCarthy, the head of the Office of Gas and Electricity Markets, Ofgem, the operational arm of GEMA. Under the Bill

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<sup>59</sup> For explanation of ROC Trading Scheme see appendix, p 40

resources available to GEMA would be directed to schemes to promote sustainable energy (**Clause 5**).

**Clause 6** is designed to help eradicate fuel poverty. It requires local authorities in England and Wales to carry out their domestic energy conservation functions in a manner consistent with the Government's Fuel Poverty Strategy.

**Clause 7** allows for relevant expenditure by the Secretary of State to be paid out of public funds.

**Clause 8** sets out definitions and reflects the position re devolution. Energy policy is a reserved matter and applies to the whole UK, but energy efficiency is devolved and can apply only to England and Wales. Thus clauses 1, 3, 4 and 5 apply to England, Scotland, Wales and Northern Ireland, but clauses 2 and 7 apply to England and Wales only.

## **APPENDICES**

## Carbon dioxide emissions

The Kyoto Protocol of the UN Framework Convention on Climate Change (UNFCCC)<sup>60</sup> represented an acceptance that climate change was influenced by human activity. In 1998, the Intergovernmental Panel on Pollution Control (IPPC) was established to improve understanding of the risks of human behaviour on climate change.

The Royal Commission on Environmental Pollution (RCEP) indicated that a 60% cut in carbon dioxide emissions by 2050 would be necessary to stabilise atmospheric carbon dioxide at double the 1990 concentration, a target that would be given a statutory basis by the provisions of the Sustainable Energy Bill.

The Kyoto protocol commits the UK to reducing greenhouse gas emissions (Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous Oxide (N<sub>2</sub>O), Hydrofluorocarbons (HFCs), Perfluoro-carbons (PFCs), and Sulphur Hexafluoride (SF<sub>6</sub>)) by 8% below 1990 levels between 2008 and 2012 (though renegotiation within the EU bubble changed this commitment to a 12.5% reduction from 1990 levels). The Government also has a domestic goal to reduce emissions of CO<sub>2</sub> by 20% below 1990 levels by 2010.

A PQ sets out the measures the Government are taking to meet the pledge to reduce the national carbon dioxide emissions to 20% below 1990 levels by 2010.

**Mr. Meacher:** The UK Climate Change Programme (CCP), published in November 2000, sets out the policies and measures that the Government and the devolved administrations have introduced, or are planning to introduce, to reduce carbon dioxide emissions to move towards the domestic goal of a 20 per cent. reduction in the UK's emissions below 1990 levels by 2010.

Emissions reductions will come from a range of policies and measures, covering all sectors of the economy. Key policies introduced so far include the climate change levy package; the UK greenhouse gas emissions trading scheme; a target for the renewables obligation that 10 per cent. of sales from licensed electricity suppliers should be generated from renewable sources; the target to at least double the capacity of combined heat and power by 2010; European-level agreements with car manufacturers to improve the fuel efficiency of new cars; the 10-Year Plan for Transport; better energy efficiency in the residential sector; and, improving performance standards in the Building Regulations.<sup>61</sup>

On the basis of current policies, through the Climate Change Programme, CO<sub>2</sub> emissions might amount to 135 million tonnes of carbon (mtc) in 2020.

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<sup>60</sup> <http://www.unfccc.org/resource/cop3.html>

<sup>61</sup> HC Deb 24 February 2003 c266W

The Sustainable Development Commission<sup>62</sup> believes that the Government's target of cutting carbon dioxide emissions by 20% by 2010 will be missed by a wide margin, mainly because coal and household energy use will be higher than forecast, whilst the ten-year Transport Plan and the UK emissions trading scheme will not deliver the expected CO<sub>2</sub> savings.<sup>63</sup>

Although the Prime Minister endorsed the 60% by 2050 target when he appeared before the Liaison Select Committee on 21 January 2003, he was clear that achieving it was a complex, diplomatic issue:

“Actually what we need, according to all the scientific evidence, is a 60 per cent cut in emissions by the year 2050. There is no way on current policy we are going to get that. There is an issue to do with the US and their attitude towards climate change but there is a bigger issue which is whether we can make the right investment in the technologies that are going to deliver that quantum leap in cutting emissions, and that is something we are working with the Americans on. Yes, I agree, there is a disagreement over Kyoto”.<sup>64</sup>

Discussions under the Kyoto Protocol to tackle climate change beyond the period 2008-12 will start soon, and the Government has committed itself to demonstrating international leadership by aiming for cuts in carbon of 15-25 mtc beyond 2020 levels.

In terms of the long term objective of carbon dioxide by 2050 the Environmental Audit Committee concluded:

The costs to the consumer of meeting renewables targets is relatively limited. Moreover, the cost of meeting a long term 60 per cent carbon reduction target by 2050 is likely to be only 0.02 per cent of GDP per annum. This is equivalent to a reduction of 1 per cent in GDP over half a century—a very small price to pay for the environmental benefits it would bring.<sup>65</sup>

In its response the Government signals caution in looking at economic changes over such a long period, but notes that the cost of tackling climate change would be a small fraction of GDP, given expected growth in national wealth by that stage.<sup>66</sup>

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<sup>62</sup> UK Climate Change Programme: a policy audit, Sustainable Development Commission, February 2003, available at <http://www.sd-commission.gov.uk/pubs/ccp/eccm/index.htm>

<sup>63</sup> *ENDS Report* No 337, February 2003, p6-7.

<sup>64</sup> Available at <http://pubs1.tso.parliament.uk/pa/cm200203/cmselect/cmliaisn/uc334-i/uc33402.htm>

<sup>65</sup> Environmental Audit Committee, *A Sustainable Energy Strategy? Renewables and the PIU report*, 22 July 2002, HC 582 2001-02.

<sup>66</sup> Environmental Audit Committee, *A Sustainable Energy Strategy? Renewables and the PIU report. Government Response to the Committee's Fifth Report of Session 2001-02*, 10 March 2003, HC 471 2002-03.

## Energy mix

In terms of the energy mix, electricity generation by gas produces less CO<sub>2</sub> than coal; nuclear generation produces no CO<sub>2</sub> in the generating phase, although no industrial activity is completely free from CO<sub>2</sub> emissions if the whole life-cycle is analysed. This applies equally to renewables, most of which are largely CO<sub>2</sub> free during the generating phase.

## Transport

CO<sub>2</sub> emissions from electricity generation, which have been declining in recent years, due to technical efficiencies and a switch to less carbon intensive fuels such as gas, still account for nearly 30% of total UK emissions. Emissions from the domestic sector and transport are rising; the latter is responsible for at least 22% of CO<sub>2</sub> emissions in the UK.<sup>67</sup>

*Energy Paper 68*<sup>68</sup> notes that:

The UK is broadly on course to meet its Kyoto commitment for the period 2008-12. The domestic goal to reduce emissions of CO<sub>2</sub> alone by 20% is more challenging. (...)

Beyond around 2005 to 2010 growth from these [road and domestic] sectors, combined with reducing scope for reductions in emissions from generation, mean that overall CO<sub>2</sub> emissions for the UK resume an upward path. In 2020 CO<sub>2</sub> emissions are projected to be 4-7% above the level projected for 2010.

Even if all sources of electricity generation emitted no CO<sub>2</sub> the UK would not achieve the 60% reduction on CO<sub>2</sub> levels by 2050, as indicated by the Royal Commission on Environmental Pollution, without additional reductions in transport emissions.

Government action on transport includes the Powering Future Vehicles Strategy,<sup>69</sup> which sets targets and a framework for the UK's shift to low-carbon vehicles and fuels, through the promotion, development, introduction and take-up of new vehicle technologies and fuels. This includes a target of 10% of new car sales for cars to emit 100g/km CO<sub>2</sub> or less by 2012.<sup>70</sup> The Energy Saving Trust's TransportAction programme is also working to promote a more sustainable transport system in Britain.<sup>71</sup>

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<sup>67</sup> DTI, *Energy Trends (March 2002)*, p 39, table 1

<sup>68</sup> Energy Projections for the UK, *Energy Paper 68*, DTI 2001 (Summary) [http://www.dti.gov.uk/energy/inform/energy\\_projections/ep68\\_final.pdf](http://www.dti.gov.uk/energy/inform/energy_projections/ep68_final.pdf)

<sup>69</sup> <http://www.roads.dft.gov.uk/cv/power/>

<sup>70</sup> Powering Future Vehicles Strategy Regulatory Impact Assessment, Department of Transport 2002 <http://www.roads.dft.gov.uk/cv/power/ria.htm>

<sup>71</sup> <http://www.est.org.uk/est/est.html?est-news-item054.html>

The Powering Future Vehicles Strategy is complementary to Chapter Five of the Energy White Paper, which sets out how low carbon transport will contribute to carbon reductions.

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More information on Government incentives and schemes to encourage the take-up of cleaner fuels can be found in Library Research Paper 02/11 *Alternative Vehicle Fuels*, February 2002.



## Renewable energy

The Department of Trade and Industry defines renewable forms of energy as “those continuously available sources which do not rely on exhaustible fossil fuels” (e.g coal, oil and gas).<sup>72</sup> Godfrey Boyle gives further definitions and an overview of renewable energy resources in his text on the subject.<sup>73</sup> Ultimately, almost all of the earth’s renewable energy resources are the product of **solar energy**, either directly, or indirectly, through climatic movements of wind and waves arising from the warming of the earth, and the capture of the sun’s energy by plants by the process of photosynthesis, or **lunar energy**, affecting the motion of tides. The exception is **geothermal** energy, which is a product of the earth’s own hot core.

The main sources of renewable energy in the UK are the **sun** (captured as solar photovoltaics and solar heating), **wind** (both on and offshore), **water** (conventional hydro-electric energy, and the developing technologies of tidal stream and wave power) and **biomass** (including energy crops).

*New and Renewable Energy: Prospects for the 21<sup>st</sup> Century: Supporting analysis* lists the following as the principle renewable energy technologies in the UK:<sup>74</sup>

- Active solar
- Advanced fuel cell
- Agricultural and forestry wastes
- Energy crops (for example, coppice willow and miscanthus [elephant grass])
- Hydro power
- Landfill gas
- Municipal solid waste combustion
- Passive solar design
- Photovoltaic cells
- Tidal stream
- Wave power
- Wind power (onshore and offshore)
- Other technologies (i.e. those unlikely to be deployed at a significant scale within the UK without significant fundamental research and/or fundamental changes in approach).

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<sup>72</sup> DTI Energy Renewables homepage <http://www.dti.gov.uk/energy/renewables/index.shtml>

<sup>73</sup> Godfrey Boyle (ed), *Renewable Energy: Power for a Sustainable Future*, 1996 p27

<sup>74</sup> ETSU for the DTI March 1999

**Sources of renewable energy, 2001**

Landfill gas	27.0%
Sewage gas	5.4%
Domestic wood	6.6%
Industrial wood	8.5%
Straw combustion	4.8%
Waste combustion	21.5%
<u>Other biofuels</u>	<u>11.8%</u>
<i>Biofuels and waste</i>	85.6%
Hydro (large scale)	10.7%
Geothermal and active solar heating	0.4%
Wind	2.7%
<u>Small scale hydro</u>	<u>0.6%</u>
<i>Other</i>	3.7%
<b>Total</b>	<b>100.0%</b> (3.1 million tonnes oil equivalent)

Source: DTI *Energy in Brief* (December 2002)

The table above<sup>75</sup> shows that in 2001, biofuels and wastes accounted for almost 86% of the UK's renewable energy sources with most of the remainder (nearly 11%) coming from large-scale hydro electricity production.

Of the 3.1 million tonnes of oil equivalent (mtoe) of primary energy use accounted for by renewables, 2.4 million tonnes was used to generate electricity and 0.7 million tonnes to generate heat. Renewable energy use grew by 5% in 2001 and has doubled in the last 8 years.

Renewables accounted for 2.6% of electricity generated in the UK in 2001.<sup>76</sup> About 1.4 % came from hydro-electric sources, many of which are over 50 years old;<sup>77</sup> 0.2 % came from onshore wind and about one per cent from other sources such as landfill gas, the burning of municipal waste, sewage sludge digestion and energy crops. The capacity for electricity generation from renewable sources other than hydro is nearly eight times its level in 1990.<sup>78</sup>

The amount of electricity generated from renewable sources over the last 10 years was set out in a PQ:<sup>79</sup>

<sup>75</sup> Energy in Brief December 2002 [http://www.dti.gov.uk/energy/inform/energy\\_in\\_brief/ene\\_in\\_brief.pdf](http://www.dti.gov.uk/energy/inform/energy_in_brief/ene_in_brief.pdf)

<sup>76</sup> HC Deb 15 October 2002 c672W

<sup>77</sup> DTI *Energy Trends, June 2002*, p25

<sup>78</sup> DTI UK Energy Sector Indicators 2001  
[http://www.dti.gov.uk/energy/inform/energy\\_indicators/2001/ind02.zip](http://www.dti.gov.uk/energy/inform/energy_indicators/2001/ind02.zip)

<sup>79</sup> HC Deb 17 November 2002 c303-4W

## Electricity generated from renewable sources, UK, 1990-2001

	Hydro and other renewables				Biofuels and wastes						Total
	wind/wave	solar photo-voltaics	Small scale	Large scale	Landfill gas	Sewage sludge digestion	Municipal solid waste combustn.	Other bio-fuels	Wastes	Total bio-fuels/wastes	
1990	9	...	127	5,080	139	316	140	...	83	678	5,894
1991	9	...	142	4,482	208	328	151	1	88	776	5,409
1992	33	...	149	5,282	377	328	177	52	104	1,038	6,502
1993	217	...	159	4,143	447	378	251	122	165	1,363	5,883
1994	344	...	159	4,935	517	361	449	192	352	1,870	7,307
1995	392	...	166	4,672	562	410	471	199	412	2,053	7,283
1996	488	...	118	3,275	708	410	490	197	417	2,221	6,101
1997	667	...	164	4,005	918	408	585	199	483	2,593	7,428
1998	877	...	206	4,911	1,185	386	849	234	583	3,237	9,231
1999	850	1	207	5,128	1,703	410	856	460	558	3,987	10,174
2000	947	1	214	4,871	2,188	367	862	473	532	4,422	10,454
2001	967	2	210	3,845	2,507	363	948	770	488	5,076	10,099

Source: HC Deb 17 November 2002 c303-4w

Energy Paper 68, "*Energy Projections for the UK*",<sup>80</sup> estimates, percentages for 2005 of 2.3 or 2.4 per cent. of UK energy consumption being met from renewable sources, depending on the scenario, and for 2010 between 4.3 and 4.8 per cent. These figures reflect the projected increase in the amount of electricity generated from renewable sources, which is planned to reach 10 per cent. by 2010.<sup>81</sup>

### Renewable energy policy<sup>82</sup>

#### Renewables obligation<sup>83</sup>

The Government have set a target that, by 2010, 10 per cent of electricity sales by licensed suppliers will come from renewable sources eligible for the Renewables Obligation (RO), which came into force on 1 April 2002.<sup>84</sup> The RO obliges licensed electricity suppliers in England & Wales to supply a specified and growing proportion of their supplies from renewable energy,<sup>85</sup> subject to the price to customers being acceptable.

A supplier has a choice, either to buy electricity from a renewable generator and receive the necessary renewable obligation certificates (ROCs – see below), or purchase ROCs from other suppliers or pay Ofgem 3p/kWh for the unmet obligation. Renewable generators effectively receive a 3p/kWh premium over other sources of electricity.

<sup>80</sup> Energy Projections for the UK, *Energy Paper* 68, DTI 2001 [http://www.dti.gov.uk/energy/inform/energy\\_projections/ep68\\_final.pdf](http://www.dti.gov.uk/energy/inform/energy_projections/ep68_final.pdf)

<sup>81</sup> HC Deb 17 July 2002 c352W

<sup>82</sup> Further details of renewable energy policy can be found at [www.dti.gov.uk/energy/renewables/index.shtml](http://www.dti.gov.uk/energy/renewables/index.shtml)

<sup>83</sup> Details on the Renewables Obligation can be found at [http://www.dti.gov.uk/energy/renewables/policy\\_obligation/](http://www.dti.gov.uk/energy/renewables/policy_obligation/)

<sup>84</sup> *Renewables Obligation Order* SI 2002/914 <http://www.legislation.hmso.gov.uk/si/si2002/20020914.htm>

<sup>85</sup> 3% of total supply in the first compliance period (April 2002 to March 31<sup>st</sup> 2003) rising to 10.4% from 2010.



## Non Fossil Fuel Obligation

Prior to the introduction of the RO the government pursued the development of renewable energy through the Non Fossil Fuels Obligation (NFFO)<sup>92</sup> Orders for England and Wales and for Northern Ireland, and the Scottish Renewable Orders (SRO). The Digest of United Kingdom Energy Statistics 2000 explains that:<sup>93</sup>

The 1989 *Electricity Act* empowered the Secretary of State to make orders requiring the Regional Electricity Companies in England and Wales (the RECs) to secure specified amounts of electricity from renewable energy sources. Projects contracted under NFFO Orders in England and Wales were registered with the Non Fossil Purchasing Agency (NFPA).

The NFFO scheme was originally introduced to prepare the nuclear power industry for privatisation. This was funded from a fossil fuel levy on electricity sales in England and Wales as part of the price charged to customers in their electricity bills. The dominant nuclear component of this levy was often referred to as the nuclear levy, but the nuclear element was effectively phased out by March 1998, leaving the requirement to support renewable energy commitments only.

In the 1990s renewables were included under NFFO, to provide some support for renewable generators through competitive contracts. There were five rounds of NFFO bidding, the first in 1990, which provided a premium price (compared to electricity generated from fossil fuels such as coal) for the electricity produced. 933 projects were given approval with a combined capacity of 3639MW.<sup>94</sup>

### NFFO locational orders

Some renewable energy projects proposed under the NFFO 3, 4 and 5 Orders have failed to obtain planning permission due to local opposition,<sup>95</sup> meaning that only about one quarter of the contracted electricity has been delivered.<sup>96</sup> To help renewable energy projects that are under unable to develop their first choice of site to move to another location, NFFO locational flexibility Orders were announced in March 2001.<sup>97</sup> The

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<sup>92</sup> More details on NFFO are available at:

[www.dti.gov.uk/energy/renewables/policy\\_obligation/index.shtml](http://www.dti.gov.uk/energy/renewables/policy_obligation/index.shtml)

<sup>93</sup> <http://www.dti.gov.uk/epa/digest.htm>

<sup>94</sup> National Assembly of Wales Economic Development Committee EDC 05-02 draft report on renewables, March 2001

[http://www.wales.gov.uk/keypubassemecodev/content/energy/edc\\_05\\_02\\_p5-e.htm](http://www.wales.gov.uk/keypubassemecodev/content/energy/edc_05_02_p5-e.htm)

<sup>95</sup> 'Renewable energy hit by local planning delays' *Financial Times* 10 July 2001 p4

<sup>96</sup> Renewable energy, *postnote* 164, POST, October 2001 <http://www.parliament.uk/post/report.htm>

<sup>97</sup> Department of Trade and Industry Press Notice P/2001/176 'Hain grants freedom for green energy' 20 March 2001.

Orders<sup>98</sup> allow them to relocate without the developer losing the benefit of their NFFO contract. An independent survey suggested that around 100 projects could go ahead as a result of these new measures.

### **Aims of Government renewables policy**

The RO consultation documents state that the key aims of the government's policy on new and renewable energy are:<sup>99</sup>

- assisting the UK to meet national and international targets for the reduction of emissions including greenhouse gases;
- helping to provide secure, diverse, sustainable and competitive energy supplies;
- stimulating the development of new technologies necessary to provide the basis for continuing growth of the contribution from renewables into the longer term;
- assisting the UK renewables industry to become competitive in home and export markets and in doing so provide employment in a rapidly expanding sector;
- contributing to rural development.

The policies set out in Chapter Four of the Energy White Paper are further designed to help the UK exploit its renewables potential.

The Environmental Audit Committee (EAC) in its report on a Sustainable Energy Policy<sup>100</sup> noted that the following are drivers for this change to promote renewable forms of generation or are acting as constraints:

- *Climate change*: Tackling climate change and reducing emissions therefore necessarily involves a move away from the use of coal and gas towards an energy supply based on renewable and nonpolluting sources.
- *The falloff in nuclear power*: Over 20 per cent of the UK's supply of electricity is currently provided by nuclear (85 TWh).<sup>101</sup> Existing nuclear capacity will decline sharply over the next 20 years as power stations reach the end of their lives; and there are no plans to build more. There is therefore a need to replace a considerable portion of present generating capacity by 2020, and to ensure that

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<sup>98</sup> The *Electricity From Non-Fossil Fuel Sources (Locational Flexibility) Order SI 2001/3914*<sup>98</sup> came into force on 31 December 2001. The *Electricity from Non-Fossil Fuel Sources (Locational Flexibility) (Scotland) Order* Scottish SI 2002/92<sup>98</sup> was laid before the Scottish Parliament on 7 March and came into force on 31 March 2002. Arrangements under the equivalent of the NFFO arrangements in Northern Ireland (NI NFFO Orders) are not affected by this decision.

<sup>99</sup> *New and Renewable Energy: Prospects for the 21<sup>st</sup> Century: Conclusions in Response to the Public Consultation*, DTI, February 2000.

<sup>100</sup> Environmental Audit Committee, *A Sustainable Energy Strategy? Renewables and the PIU review*, 22 July 2002, HC 582 2001-02.

<sup>101</sup> Energy Digest 2001, table 5.1.

this is done in a way which does not conflict with the Government's climate change objectives.

- *The likely decline of coal:* Increasingly stringent environmental regulations are likely to force the closure of most existing coal plants in the next 15 years as they will no longer be economically competitive.<sup>102</sup> The incorporation of technologies, yet to be developed, for capturing and storing the carbon dioxide would add further costs. In the short term, however, coal is relatively cheap, and the last two years have seen an increase in the amount of electricity generated from this source.<sup>103</sup> Emissions have therefore increased.
- *The UK as an energy importer:* The UK is still just a net energy exporter, though in the last two winters it has had to import gas from Europe. This situation is due to change radically over the next twenty years as supplies of oil and gas from the North Sea run out. The DTI projections indicate that by 2020 the UK might become 70 per cent dependent on natural gas for electricity generation, up to 90 per cent of which might be imported.<sup>104</sup> This raises issues not only about security of supply and adequacy of infrastructure, but also about the likely longterm costs of imported energy. Renewable sources of energy could help reduce import dependence and cost volatility.
- *Fuel poverty:* In our 1999 report on Energy Efficiency, we called the issue of fuel poverty a national scandal.<sup>105</sup> Fuel poverty affects nearly 4 million households in the UK and is responsible for the disproportionately large number of "extra winter deaths" compared to other European states.<sup>106</sup> The issue of fuel poverty acts as a significant constraint on Government policy because of the desire to avoid energy price rises for domestic consumers.

The Government expects that the RO, along with radical improvements in energy efficiency, will help it to achieve a cleaner, low carbon energy mix and to meet its international obligations on climate change. If the target were met, the government estimates that 2.5 million tons of carbon emissions would be saved each year by 2010.<sup>107</sup>

### **Eligible renewable sources**

Eligible sources of renewable energy under the RO are defined as:

- Onshore and offshore wind

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<sup>102</sup> Trade and Industry Select Committee Second Report, *Security of Energy Supply*, HC 364 2001-02, paras 137-138.

<sup>103</sup> DTI, *Energy Trends (March 2002)*, p.33, 39.

<sup>104</sup> DTI, *Initial Contribution to the PIU review*, pp11-12, p25.

<sup>105</sup> Environmental Audit Committee, Eighth Report *Energy Efficiency*, HC 159 1998-99 para 46

<sup>106</sup> *PIU Energy Review*, Para 29 and Annex 4.

<sup>107</sup> Oral Evidence by Brian Wilson to Environmental Audit Select Committee 24 April 2002 on A Sustainable Energy Policy? Renewables and the PIU Review, HC 582-v 2001-02

- Photovoltaics
- Geothermal
- Biomass
- Energy from waste using advanced techniques, such as gasification and pyrolysis
- Landfill and sewage gas
- Existing hydro less than 20MW and all new hydro

During the RO consultation phase it was proposed that large-scale hydro and energy from waste incineration be excluded from the Renewables Obligation. This is because the Government proposed to focus support on the renewables that needed most support to become viable.

A 'new deal for hydro' was announced in July 2001.<sup>108</sup>

- The size of refurbished hydroelectric power stations to receive support from the renewables obligation will increase from 10 MW to 20 MW
- All newly built hydroelectric power stations will fall under the renewables obligation

It was also decided that electricity generated from biodegradable waste – wood and paper, plants and animal material - using pyrolysis and gasification would be eligible under the obligation, but the incineration of mixed waste would not.<sup>109</sup>

### **The Renewables Obligation Certificate (ROC) Trading Scheme**

The RO also sets out the rules for the Renewables Obligation Certificate (ROC) Trading Scheme, which allows the trading of certificates for each MWh of renewable electricity supplied. Ofgem, which administers the RO, will establish and maintain a Register of qualifying generators, and suppliers holding NFFO, RO and SRO contracts. There are restrictions on the number of ROCs a supplier can carry forward from one annual compliance period to another, which is assessed each October. If suppliers do not present sufficient ROCs to equal the amount of renewable energy they should supply, they have the option of 'buying out' their obligation at a rate of 3p/kWh (£30/MWh), linked to RPI.

All proceeds from buyout payments are to be recycled to suppliers in proportion to the number of ROCs they present. This may increase the value of ROCs and some industry sources have suggested that they may trade at £10 to £20 per MWh above the buyout price. This will provide an additional financial incentive to purchase renewable electricity, and thus stimulate investment in new generating capacity, and it may allow more marginal technologies to become more

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<sup>108</sup> Department of Trade and Industry Press Notice P/2001/388 'Wilson opens the floodgates to hydroelectric power' 20 July 2001.

<sup>109</sup> 3rd SC on Delegated Legislation 6 March 2002  
<http://www.legislation.hmso.gov.uk/si/si2002/20020914.htm>



commercially viable. DTI has estimated that overall, the RO will create extra demand for renewable energy worth over £1 billion by 2010.<sup>110</sup>

### **The Climate Change Levy (CCL) Renewables Scheme**

The Climate Change Levy (CCL) was introduced as part of the *Finance Act 2000* and came into effect on 1st April 2001. It is effectively a tax on the use of fossil fuel supplies on both business and public sectors. Although its principal aim is to reduce carbon dioxide emissions to assist the UK in meeting its Kyoto commitments on reducing greenhouse gases, it also serves to encourage non-domestic electricity users to become more energy efficient. The UK Government anticipates reductions of at least 2.5 million tonnes of carbon a year by 2010, as a result of the levy.

All UK businesses and public sector organisations are paying the levy, which is mandatory, via their energy bills. The levy is broadly revenue neutral; all businesses, regardless of energy intensity, will benefit from receipts being recycled through a 0.3 percentage point cut in employer's National Insurance Contributions, and enhanced capital allowances for energy saving investments and renewable sources of energy.

Renewables generation is exempt from the Climate Change Levy (CCL). This encourages commercial electricity users to pay a higher price for electricity certified as renewable, currently at a rate of 0.43p/kWh. It is hoped that this exemption and the RO at 3.0p/kWh will help to stimulate the development of the renewable energy market in the UK to the tune of around £1 billion a year. In order for electricity to be considered a renewable source of energy, it has to be generated in a prescribed manner and fulfil certain conditions. The renewable sources currently eligible for exemption are wind energy; hydro power (up to 10 megawatts); tidal power; wave energy; photovoltaics; photoconversion; geothermal hot dry rock; geothermal aquifers; landfill; biomass and energy crops. Some municipal wastes can also be exempt.<sup>111</sup>

### **Transmission Issues Working Group**

Achievement of the renewables target is dependent on the geographical distribution of generating capacity, but the infrastructure must be in place, and strengthened where necessary, to enable the electricity generated from renewable sources, particularly in remote regions of Great Britain, to be transmitted to centres of demand, mostly in the south.

The DTI established the Transmission Issues Working Group in March 2002 to look at the implications for the transmission network in GB of the Government's target for renewables.

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<sup>110</sup> Renewable energy, *postnote* 164, POST, October 2001 <http://www.parliament.uk/post/report.htm>

<sup>111</sup> See Clause 50 of the Finance Act 2000

In November 2001 the DTI announced proposals for the construction of offshore transmission cables to harness the United Kingdom's renewables potential.<sup>112</sup> The government commissioned an initial study to look at the development of an undersea electricity cable system linking the West of Scotland, the North-West of England, Northern Ireland, Western Wales, and possibly, the south-west of England.<sup>113</sup> This would provide the means for bringing renewable energy from offshore wind and coastal generating plant to the electricity market.<sup>114</sup>

The study, carried out by PB Power Ltd, endorsed the option of an offshore link either as a means of the bulk transfer of renewable energy or to a suitable point on the existing electricity transmission network.<sup>115</sup> However, the report revealed the costs of the undersea option to be prohibitively expensive. A further study was commissioned by the Group to explore land-based options and issues in regard to additional renewable generating capacity in England & Wales.<sup>116</sup> Whereas in Scotland new renewables generation is expected to take place largely onshore including the Islands, in England & Wales there is significant potential for renewable generation offshore. The Group has also considered the regulatory framework necessary to deliver the reinforcements identified in the two studies commissioned by the Group. The Report of the Group is being finalised and will be ready for publication in spring 2003.

### **Regional and community action**

On 28 February 2002 Brian Wilson, the Minister for Energy, launched the Community Renewables initiative to help local communities reduce the effects of climate change by devising renewable energy schemes in their area.<sup>117</sup>

At the regional level each of the Government Offices for the Regions (GORs) has been involved in assessing its region's potential for renewables development. A new report, the Regional Renewable Assessment Overview, setting out the potential for renewable energy in all regions of the UK, was published by Brian Wilson on 6 March 2002.<sup>118</sup>

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<sup>112</sup> Department of Trade and Industry Press Notice P 2001/626 'Wilson outlines vision for renewables interconnector', 12 November 2001.

<sup>113</sup> DTI New Review URN 02/51 February 2002 [www.dti.gov.uk/NewReview](http://www.dti.gov.uk/NewReview)

<sup>114</sup> DTI News Release P/2001/626 *Wilson outlines vision for renewables interconnector along the west coast of Britain*, 12 November 2001.

<sup>115</sup> HC Deb 18 March 2002 c87W

<sup>116</sup> DTI News Release P/2002/088 *Wilson announces new UK-Scotland link study* 13 February 2002

<sup>117</sup> DTI press notice P/2002/133, *Wilson: "Schools, hospitals, shops and housing developments can contribute to a greener UK"*, 28 February 2002

<sup>118</sup> *The Regional Renewable Assessment Overview*, Oxera Environmental & Arup Economics and Planning, 2002 [www.dti.gov.uk/energy/oxera\\_report.pdf](http://www.dti.gov.uk/energy/oxera_report.pdf)

## Planning policy

Planning Policy Guidance (PPG) Note 22 Renewable Energy<sup>119</sup> contains the current guidance on planning for renewable energy sources with an annex on onshore Wind Farms. PPG 20 deals with coastal planning issues but does not include offshore developments. The government signalled its intention to review PPG22 in June 2001.<sup>120</sup>

According to the Department for Transport Local Government and the Regions:

The revision of PPG 22 will follow the new approach set out in the Planning Green Paper and will concentrate on the important policy issues that need to be resolved at the national level, with the current technical annexes taking the form of separate guidance.<sup>121</sup>

Responsibility for Planning now lies with the Office of the Deputy Prime Minister. Planning reform is under way with the publication of the Planning Green Paper *Planning: Delivering Fundamental Change*, published in December 2001<sup>122</sup> and subsequent Planning and Compulsory Purchase Bill [Bill 47 2002-03]. The revision document for PPG22 has not yet been produced.

The Environmental Audit Committee saw planning issues as one of the main obstacles to increased deployment of renewables. It concluded:

If the DTI's regional renewable energy assessments are intended to influence planning, then they need to be incorporated in regional plans and Regional Development Agencies need to be held to targets. We also consider that the Office of the Deputy Prime Minister needs to incorporate in new guidance a presumption in favour of renewables.<sup>123</sup>

Along with the consultation draft of PPG 22, Chapter Nine of the Energy White Paper states that the Government will also issue separate guidance on best practice for promoting renewables through the planning system. It will also consult on a regional level approach to energy issues, including renewables, which it is expected will be incorporated into regional targets.

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<sup>119</sup> Planning Policy Guidance Note: Renewable Energy, PPG 22 DOE/WO 1993.  
<http://www.planning.odpm.gov.uk/ppg/ppg22/pdf/ppg22.pdf>

<sup>120</sup> HC Deb 27 June 2001 c102W

<sup>121</sup> *DTI New Review* 52, May 2002 <http://www.dti.gov.uk/NewReview/nr52.pdf>

<sup>122</sup> <http://www.planning.odpm.gov.uk/consult/greenpap/index.htm>

<sup>123</sup> Environmental Audit Committee, *A Sustainable Energy Strategy? Renewables and the PIU review*, 22 July 2002, HC 582 2001-02.

## The Renewables Directive

The EU Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market (Directive 2001/77/EC)<sup>124</sup> came into force on 27 October 2001. Member States have until 27 October 2003 to bring into force the laws, regulations and administrative provisions necessary to comply with the Directive. The overall EU target is for 22% of electricity from renewable sources by 2010.

The Directive imposes on the government requirements that match some of the provisions of the Sustainable Energy Bill, notably the requirement to set a target for the generation of electricity from renewable sources, and to report on progress on achieving the target.

The DTI notes that:<sup>125</sup>

The central provision of the Directive is Article 3, which requires Member States to take appropriate steps to encourage the greater consumption of electricity from renewables in conformity with indicative targets set out in the Annex to the 11 Directive. The target for UK is 10% electricity by 2010, which is compatible with the domestically adopted target.<sup>126</sup>

Other Articles of the Directive are aimed at encouraging or facilitating the penetration of renewables in the electricity market. Article 5 requires Member States to introduce a system of “guarantees of origin” for electricity from renewables.

Article 6 requires Member States to evaluate the administrative, planning etc. procedures as they affect renewables and publish a report within 2 years. Article 7 provides that the operators of the transmission and distribution grids guarantee the transmission and distribution of, and give priority access to, electricity produced from renewable energy sources, and includes provision for non-discriminatory charging policies.

The table below shows that, in comparison with the other EU member states, the UK lagged behind its competitors in the generation of electricity from renewable sources in 2000. Even if the UK achieves its target of generating 10% of electricity by renewable sources in 2010, it will still be well behind most other EU countries.

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<sup>124</sup> OJ L 283, 27.10.01 The full text of the directive is available at [http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l\\_283/l\\_28320011027en00330040.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l_283/l_28320011027en00330040.pdf)

<sup>125</sup> Transmission losses in a GB market: a DTI consultation paper, DTI, January 2003.

<sup>126</sup> The UK has made the report required by Art 3(2) on its target and the measures it is taking. This can be found at [www.dti.gov.uk/energy/renewables/policy\\_obligation/n000051x.pdf](http://www.dti.gov.uk/energy/renewables/policy_obligation/n000051x.pdf)

## Production of Electricity from Renewable Sources (2000) and targets for 2010

	Share in gross production of electricity					Target share of renewables by 2010
	Hydro*	Wind	Biomass	Geo-thermal	Total	
Austria	67.3%	0.1%	2.6%	0.0%	70.0%	78.1%^
Belgium	0.5%	0.0%	1.1%	0.0%	1.6%	6.0%
Denmark	0.1%	12.3%	4.8%	0.0%	17.2%	29.0%
Finland	20.9%	0.1%	12.2%	0.0%	33.3%	31.5%^
France	12.5%	0.0%	0.6%	0.0%	13.1%	21.0%
Germany	4.1%	1.6%	1.1%	0.0%	6.8%	12.5%
Greece	6.9%	0.8%	0.0%	0.0%	7.7%	20.1%
Ireland	3.5%	1.0%	0.4%	0.0%	4.9%	13.2%
Italy	16.0%	0.2%	0.7%	1.7%	18.6%	25.0%
Luxembourg	10.2%	2.3%	4.8%	0.0%	17.3%	5.7%^
Netherlands	0.2%	0.9%	3.6%	0.0%	4.7%	9.0%
Portugal	25.9%	0.4%	3.5%	0.2%	30.0%	39%^
Spain	13.1%	2.1%	1.0%	0.0%	16.2%	29.4%
Sweden	54.1%	0.3%	2.7%	0.0%	57.1%	60.0%
UK	1.4%	0.3%	1.2%	0.0%	2.8%	10.0%
<b>EU</b>	<b>12.4%</b>	<b>0.9%</b>	<b>1.5%</b>	<b>0.2%</b>	<b>14.9%</b>	<b>22.0%</b>

\* does not include pumped storage

^ these targets involve further definitions, see EU Directive 2001/77/EC

Sources: Eurostat; European Commission Directive 2001/77/EC

Concluding that Britain has the greatest potential for renewable energy of any country in Europe yet produces less than 3 per cent of its energy from renewables – “a tiny proportion which compares very unfavourably with almost all other European countries”, the Environmental Audit Committee noted that:

The overall EU target set out in the 2001 Renewables Directive is far more demanding than the UK indicative target —22 per cent by 2010 as against 10 per cent for the UK—reflecting the fact that many other EU countries are considerably more advanced than the UK in terms of the percentage of renewable energy generated.

The Government accepts that the EU target is more demanding than the current UK target, although it considers our target to be one of the most challenging in Europe, given the low baseline of renewables.

### Prospective renewables development

In a recent consultation document, the DTI expressed its optimism that the renewables policy adopted by the Government and the Scottish Executive was providing a clear

impetus for the stimulation of renewables, as seen in the number and scale of renewables planning applications.<sup>127</sup>

An unprecedented number of applications are currently under consideration. In Scotland, at the time of writing, there has recently been one large scale wind farm approved at Cairn Uish and there were applications under consideration for almost 930MW capacity of other renewables projects under Section 36 of the Electricity Act 1989, mainly for large-scale onshore wind farms –concentrated in the south of Scotland, largely in the Kintyre Peninsula and Moray Firth. In addition applications are awaited for a further 1050MW of capacity, also mainly onshore wind farm developments. Of the offshore wind farm developments for which the Crown Estates awarded initial site leases consent has now been given to three projects amounting to about 300MW of capacity. Applications for a number of other projects are in the pipeline. In total these developments could supply about 1.4GW of renewable energy. Onshore, one wind farm, to be based in Kent, of 78MW capacity is under consideration.

Information on planning consents being sought for offshore and land based wind farms was given in a PQ:<sup>128</sup>

**Mr. Wilson:** The following table lists the number of wind farm planning consents currently being sought. This list covers those applications which are the responsibility of central Government, and does not include smaller developments which fall under local planning authorities.

	<b>(a) Offshore wind farms</b>	<b>(b) Onshore wind farms</b>
England	8	1
Wales	0	0
Scotland	1	7
Northern Ireland	0	5

The applications for offshore wind farms in England are located at Kentish Flats (off Whitstable, Thames Estuary), Lynn (off Skegness, Lincolnshire), Inner Dowsing (off Ingoldmells, Lincolnshire), Cromer (off Mundesley, Norfolk), Gunfleet Sands (off Clacton-on-Sea, Essex), Barrow (off Walney Island, Cumbria), Burbo Bank (off Crosby, Merseyside) and Shell Flats (off Cleveleys, Lancashire).

There is also one application for an onshore wind farm in England and Wales, under section 36 of the Electricity Act 1989, under consideration at Little Cheyne Court, Romney Marsh, Kent. Proposals for wind farms in England and Wales with a capacity of 50 MW or below fall are to be determined by the local planning authority under the normal planning regime.

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<sup>127</sup> Transmission losses in a GB market: a DTI consultation paper, DTI January 2003.

<sup>128</sup> HC Deb 13 February 2003 c931-2W

Powers under section 36 of the Electricity Act 1989 as they apply to Scotland have been devolved to the Scottish Executive. The onshore wind farms under consideration in Scotland are located at the Windy Standard extension (Dumfries and Galloway); Whitelee (East Renfrewshire, South Lanarkshire and East Ayrshire); Paul's Hill (Moray); Black Law (North Lanarkshire, West Lothian and South Lanarkshire); Farr (Highland); Braes o'Doune (Stirling) and the Crystal Rig extension (Scottish Borders).

There is one offshore project under consideration by the Scottish Executive at Robin Rigg (Solway Firth).

The Department of Enterprise, Trade and Investment for Northern Ireland are currently dealing with applications for onshore wind farms at Bin Mountain (Strabane, County Tyrone), Omagh (in the townlands of Lough Hill, Castlecraig, Curraghmacall and Drummahon, County Tyrone), Fermanagh (in the townlands of Garrane, Mullaghfad, Corraleek and Corragunt, and Rosslea, County Fermanagh), Fermanagh (in the townlands of Callagheen and Garrison, County Fermanagh) and Fermanagh (in the townlands of Glenarn, Stranahone and Stranadarriff, Tappaghan Mountain and Lack, County Fermanagh).

Asked to estimate the contribution to be made by off-shore and land-based wind farm projects over the next ten years as a percentage of overall electricity generation the Minister reported:<sup>129</sup>

**Mr. Wilson:** The Government have not made estimates for the contribution that onshore and offshore wind farms will make to our overall electricity generation over the next 10 years. The Government's target for renewable energy is that, by 2010, 10 per cent. of electricity should be supplied from sources eligible under the Renewables Obligation. While we expect both onshore and offshore wind to make a substantial contribution to this target, no specific targets have been set in relation to the contribution of any particular form of renewable energy to the overall 10 per cent. target.

### **Renewables finance**

The Government provides a range of support to industry to encourage the use of renewable energy. Since February 2000 and the replacement of the Non-Fossil Fuel Obligation, the measures include the introduction of the Renewables Obligation; exemption of renewables from the Climate Change Levy; and protection of existing Non-Fossil Fuel Obligation (NFFO) contracts.

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<sup>129</sup> HC Deb 13 February 2003 c932W

Direct government funding worth £250 million between 2002/3 and 2005/6 has been allocated across a range of renewable technologies. Capital grants are available for offshore wind energy, energy crops, a photovoltaics demonstration programme and for other research and development.<sup>130</sup>

*Funding Renewables*, was produced by the DTI in May 2002,<sup>131</sup> giving an overview of the funding for each of the main renewable energy sources.<sup>132</sup>

On publication of the Energy White Paper the Government committed a further £60 million in capital grants for the three year period to 2006; this is in addition to £38 million for energy policy objectives in 2005/06 announced in the 2002 Comprehensive Spending Review.<sup>133</sup>

### **Meeting the 10 per cent. target**

When the Energy Minister, Brian Wilson appeared before the EAC in April 2002 he commented on the prospects for achieving the 10 per cent. renewables target:<sup>134</sup>

‘So with the Renewables Obligation in place, we think we now have the main building blocks available to achieve the 10 per cent target. I know that sometimes people say, "Set more ambitious targets. My own view is that you set attainable targets before you set more ambitious attainable targets". I think the 10 per cent is attainable, but it will be a tough target and we now have a 25 year long obligation which again I believe should give investors and industry the assurances that they need to make the commitments that are necessary. We estimate that 10 per cent of electricity from Renewables by 2010 will mean annual savings of around 2.5 million tons of carbon by 2010’.

By October 2002 he indicated that the government will be late in delivering its 5% renewables target by 2003.<sup>135</sup>

**Mr. Evans:** To ask the Secretary of State for Trade and Industry if the UK will meet the target of 5 per cent. of electricity to be generated by renewable sources by 2003. [73810]

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<sup>130</sup> Further information on renewable energy programmes can be found on the Library Intranet pages under Renewable Energy

<sup>131</sup> <http://systems.energy-efficiency.org/dynapub/files/21.downloads.pdf.pdf?saveTo=/21.pdf>

An online version of *Funding Renewables* can be viewed at:

<http://www.dti.gov.uk/renewable/funding/renewables.htm>

<sup>133</sup> DTI News Release P/2003/113, *Government unveils green future for energy*, 24 February 2003

<sup>134</sup> <http://www.parliament.the-stationery-office.co.uk/pa/cm200102/cmselect/cmenvaud/582/20424a03.htm>

<sup>135</sup> HC Deb 15 October 2002 c671-2W



**Mr. Wilson:** As I explained in introducing the Renewables Obligation Order 2002 on 6 March, (Third Standing Committee on Delegated Legislation, column 4), prospects of achieving a level of 5 per cent. by the end of 2003—a date proposed in a 1999 DTI consultation document—have been heavily dependent on the pace of new commissioning of projects awarded contracts under the Non Fossil Fuel Obligation (NFFO) and the comparable arrangements for Scotland. In practice, even with the Government's action to allow locational flexibility for NFFO contracts, the pace of new commissioning has been somewhat slower than had been hoped. As I said in March, the indications are that the target of a 5 per cent. contribution from renewables to electricity supplies will be delivered late.

The Renewables Obligation, which came into effect from 1 April 2002, introduces new arrangements to ensure the long-term expansion of renewable energy in the UK. The Obligation is set to run for twenty-five years, and will provide an incentive for renewable energy expected to rise to some £1 billion per year by 2010–11. It is backed by £260 million direct Government support for renewables over the next three years. The Obligation is set at increasing levels for successive years, rising from 3 per cent. for 2002–3 to 10.4 per cent. for 2010–11. The level of the Renewables Obligation is 4.9 per cent. for 2004–5 and 5.5 per cent. for 2005–6.

The Energy White Paper (Chapter Four) describes as ‘very challenging’ meeting in full the 10 per cent. target by 2010.

### **Environmental Audit Committee conclusions and Government response**

The EAC was clear that renewable energy resources provided a clear opportunity for the government to meet its climate change commitments.

With the decommissioning of nuclear power stations and of older coal and gas plant, it has been estimated that some 60 per cent of current generation capacity will need to be replaced in the next 25 years. (...)

There is little doubt that the UK, along with other developed nations, is likely to face far greater emission reduction targets for greenhouse gases after the current commitment period under the Kyoto agreement expires in 2012 (...)

The UK's theoretical potential for generating renewable energy is well in excess of its entire electricity consumption. (...)

We therefore see renewables, together with the need for radical improvements in energy efficiency, as being the primary tool to fulfil the UK's climate change commitments. The Government must provide commitment and leadership here, and should not allow itself to drift into a position in which nuclear appears to be the only alternative—as a result of a failure to maximise the potential which renewables have to offer

However, the EAC also concluded that the 2003 milestone would probably be missed, and therefore it was unlikely that the ten per cent target would be achieved on time.<sup>136</sup>

9. It is already certain that we shall miss the 2003 target— probably by as much as 2 per cent—as the Energy Minister confirmed in his evidence to us. On the present rate of progress we will achieve only just over 5 per cent against the 2010 target of 10 per cent (para 51).

10. Achieving the 10.4 per cent Renewable Obligation target by 2010 represents an even greater challenge. Eligible generation, which has only increased from 0.3 per cent to 1.5 per cent over the last 10 years, would need to increase from 1.5 per cent to 10.4 per cent in 8 years

Apart from planning issues, the Committee identified the New Electricity Trading Arrangements (NETA) and problems associated with embedded generation networks and Ofgem as barriers to progress.<sup>137</sup> The Committee recommended a new statutory remit under the *Utilities Act 2000* for Ofgem to promote sustainable development:

The Performance and Innovation Unit Review recommends a new DTI objective which, if adopted, will place overriding importance on environmental objectives. It is difficult to see how Ofgem can accommodate such an approach given its present statutory remit. Ofgem's duties under the *Utilities Act* should therefore be amended to incorporate as a primary objective the need to promote sustainable development

The Government considers it premature to amend Ofgem's objectives at this stage, although it has said it will introduce legislation to require Ofgem to publish Regulatory Impact Assessments (RIAs) and Environmental Impact Assessments (EIAs) for new policy areas.

The key conclusions and recommendations highlighted from the inquiry were:

26. We therefore believe that there is an urgent need for the Government to show leadership and:

- address the difficulties in gaining planning applications;
  - indicate tried and tested technologies which will deliver over the next decade;
- and
- address the conflicting priorities of market liberalisation and cheap electricity as against our Kyoto obligations (para 117).

27. There are, however, a number of other actions which the Government need to carry out as a matter of urgency, before the White Paper is issued.

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<sup>136</sup> <http://www.parliament.the-stationery-office.co.uk/pa/cm200102/cmselect/cmenvaud/582/58203.htm>

<sup>137</sup> Library Note SNSC:1394 *Electricity Trading IV Embedded generation* discusses these points in more detail

- The Government must ensure that Ofgem's terms of reference for the review of New Electricity Trading Arrangement in its first full year place primary importance on environmental impacts.
- The DTI should review options for incentivising the development of renewables under New Electricity Trading Arrangement, so that the playing field so far from being tilted against renewables as at present should favour them.
- The DTI should prepare legislation to amend the statutory duties of Ofgem in order to incorporate the promotion of sustainable development as a primary duty.
- The Office of the Deputy Prime Minister should revise planning guidance for renewables as a matter of urgency, and incorporate a presumption in favour of renewables (para 120).

28. In our view, a crosscutting unit for sustainable energy policy—as recommended by the Performance and Innovation Unit—is unlikely to be sufficient, and we recommend that the Government should set up a Sustainable Energy Policy Agency.

The Government's response to the Committee, and its policies in the Energy White Paper, signals its hopes to achieve outcomes in its four key areas, within the wider approach to sustainable development. It notes that there is no simple mechanism to do so, or for determining relative costs, and that there will be, from time to time, tension between these goals.

### **PIU 2020 target**

On 21 June 2001, the Prime Minister asked the Cabinet Office's Performance and Innovation Unit (now the Strategy Unit) to carry out a major review of strategic issues surrounding energy policy for Great Britain up to 2050. The Energy Review was published on 14 February 2002.<sup>138</sup> It contained recommendations about bringing environmental objectives to the heart of energy policy, but also stressed the importance of maintaining security of supply and keeping options open. This was taken to mean that the nuclear power option could not be ignored, particularly if the deployment of renewables failed to deliver the necessary greenhouse gas reductions by replacing nuclear capacity as stations are decommissioned.

One of the recommendations was for the UK to produce up to 20 per cent. of electricity from renewable sources by 2020, extending the ten per cent. target already set for 2010. The report gave a number of arguments for and against a larger target:

7.61 Should the targets be expanded beyond 2010? The arguments **against** a larger target are:

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<sup>138</sup> *The Energy Review*, Performance and Innovation Unit February 2002  
<http://www.piu.gov.uk/2002/energy/report/index.htm>

- the RO is only just coming into effect so it is too early to say what the costs of a new target would be;
- the UK would be unwise to make a firm commitment to a larger target for 2020 until it knows the extent of its international obligations;
- most renewables are currently an expensive low carbon option, so it would be better to meet any commitments we have by adopting lower cost options first; and
- existing approaches might conceivably establish options capable of meeting at least 20% of all the UK's electricity needs.

7.62 The arguments **for** a larger target are:

- a target is the obvious and clear means of announcing a long-term commitment;
- the industry needs greater assurance that demand for renewables will continue to grow after 2010 than is currently on offer: if this is not forthcoming the impetus of shorter term development to 2010 may falter;
- the UK Government needs to continue to support options which have a particular applicability in the UK environment, since nobody else will;
- it would allow deployment at a rate which enables learning to occur in order to reduce costs significantly and thereby fully establish a wider range of renewables options;
- it would act as a stimulus to R&D;
- it would reduce the cost of meeting the 2010 target; and
- the need to develop the infrastructure required to deploy these investments.

7.63 The balance of the argument favours making a firm commitment to a larger target for 2020 in the near future.

***Recommendation:***

- Any process of target-setting for almost 20 years ahead is inevitably ambitious, given the uncertainties about costs and other market and political developments. **In order to encourage a range of renewable options, and maximise the chances of rapid and long-term learning and cost reductions, DTI should immediately set a firm target of 20% of electricity to be supplied from renewables for 2020.** While this target is best presented in percentage terms, uncertainty about the level of electricity demand means that in practice the target should be set in physical terms. A further 39TWh is a reasonable target (equivalent, over the further ten years to 2020, to the RO up to 2010). This will turn out to be 20% of electricity supply if energy efficiency policies work to the extent that electricity demand in 2020 is mid-way between a business as usual future and the most environmentally sustainable of our scenarios. If energy efficiency programmes are as effective as hoped, this target might turn out to be more than 20% of electricity supply.

Environmental groups largely welcomed the recommendation, although Greenpeace thought the proposed target was too low<sup>139</sup> and were in favour of a higher target of 20-30% by 2010, as proposed in the original PIU Scoping Note in Renewable Energy.

Proposition: The UK could meet a significant proportion of electricity needs from renewable sources in the medium term – 20-30% by 2020 may be feasible. In the longer term, much larger proportions, 50% or more, appear possible.<sup>140</sup>

The recommendation would increase the costs of electricity for householders and businesses, and fears were expressed that this could push up to half a million more people into fuel poverty.<sup>141</sup> The energy analysts Oxera looked at the costs of investment in renewables and suggested that the total cost of meeting a 20% target of renewable in 2020 would be a 5%-6% addition to household electricity prices.<sup>142</sup>

Noting that the RO is due to be reviewed in 2006/07 the report was reluctant to endorse any particular mechanism for providing additional support to achieve the 2020 target; it recommended:

RO is due to be reviewed in 2006/7. By 2008, DTI should establish the renewable energy support mechanisms to ensure that the 2020 target of 20% is met.

The Environmental Audit Committee, in its report, felt that the PIU review:

fails to provide an assessment of current policy instruments, even though this was an aim of the initial energy work begun in January 2001. We are therefore concerned that the Performance and Innovation Unit review may not adequately reflect the scale of the challenge, and that there now needs to be a specific process for translating its recommendations into specific policy commitments, so that the White Paper forms an action plan.

On this point the Government's response notes that the Energy White Paper assessed all the economic policy instruments, and whilst recognising the challenge facing renewables, saw its policies as addressing threats to the 2010 target and 2010 'aspirational' target.

The Sustainable Energy Bill itself proposes a statutory basis for the PIU's recommendation that 25% of electricity should be supplied from renewables by 2020.

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<sup>139</sup> Energy plan puts onus on 'low carbon' economy, *Guardian* 15 February 2002; Greenpeace submission to Energy Review: <http://www.theenergyreview.com/docs/Greenpeace.pdf>

<sup>140</sup> PIU Energy Review. Renewable energy – further note, August 2001. <http://www.piu.gov.uk/2001/energy/energyscoperenewable.shtml>

<sup>141</sup> Renewable energy target could generate fuel poverty, *Financial Times* 15 February 2002 p3

<sup>142</sup> Figures were derived from the Oxera Working Paper on Renewable Energy Cost Modelling 2001

The Government has left open the option to increase the level of the renewables obligation after 2010 but the Energy White Paper shies away from setting a firm target now by stating that:

...our **aspiration** is by 2020 to double renewables' share of electricity from our 2010 target and we will pursue policies to achieve this.<sup>143</sup>

Speaking on The Westminster Hour about target setting, Brian Wilson said:<sup>144</sup>

"I am less interested in setting targets than in creating the conditions which will ensure that there will be an increasing share of the market taken by renewable energy.

"I think there is a real danger in this of target-setting becoming a substitution therapy for actually doing things.

"My far higher priority is to make sure that the necessary steps are taken about planning, about infrastructure, about developing technologies and ensuring the investment is there. All of these things are far more important than getting bogged down in specific targets."

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<sup>143</sup> Chapter Four para 4.11

<sup>144</sup> The Westminster Hour, BBC Radio Sunday 16 February 2002.

## Energy efficiency – commercial and domestic

The Performance and Innovation Unit (PIU) report to government following the Energy Review<sup>145</sup>, which was the precursor to the Energy Consultation, made key points including the recommendation that “the immediate priorities of energy policy are likely to be most cost-effectively served by promoting energy efficiency.” Energy efficiency can make a large contribution for very low, or negative, net costs and does not conflict with other policy objectives. A further key recommendation is that energy efficiency should be at the centre of low-carbon strategies. The report said that a step change and new targets for energy efficiency are needed, and that in the domestic sector the government should have a target of a 20% improvement in energy efficiency by 2010 and a further 20% between 2010 and 2020.

These targets would nearly double the present rate of improvement. The annual gains, after the cost of investment needed to achieve these savings, could be as much as 0.25% of GDP by 2020.

### Barriers to energy efficiency

The PIU report identified a number of barriers to investment in improved energy efficiency:

Many energy users have imperfect information about energy efficiency opportunities and distrust of information available from what they see as vested interests.

There is often better information on capital costs of investments than on their running costs, leading to adverse selection of inefficient goods.

Capital markets are incomplete for many borrowers, for example low income households may find it difficult to borrow, even for very cost effective projects.

Inadequate contractual relationships with builders and other traders result in sub-optimal design, and the risk that projects may not be implemented correctly.

Tenancy arrangements provide no incentives for either landlords or tenants to make cost-effective energy efficiency investment in rented properties.

Regulatory arrangements discourage potentially beneficial long-term contracts between licensed energy suppliers and domestic customers.

Some fiscal measures treat energy efficiency less favourably than energy supply.

The price of energy, in most cases, fails to take into account the environmental costs associated with its supply and use, i.e. there are externalities.<sup>146</sup>

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<sup>145</sup> The Energy Review, Cabinet Office, February 2002.

<sup>146</sup> The Energy Review, Cabinet Office, February 2002, Annex 5.

## Government measures

The Government has a range of measures in place to encourage energy efficiency. These were summarized in answer to a recent parliamentary question:

**Mr. Morley:** Since the publication of the UK's Climate Change Programme in November 2000, the following main actions have been taken to promote energy efficiency in the domestic, business and public sectors:

**The Climate Change Levy**, a levy on the business use of fuel, was introduced in April 2001. Receipts, forecast at £1 billion a year, are recycled back to business—including £50 million for business energy efficiency.

Climate Change Agreements<sup>147</sup> have been reached with 44 sectors of energy intensive industry. Participants in these agreements pay a reduced rate of Climate Change Levy (20 per cent. of the full levy) in return for meeting challenging energy efficiency targets over a 10-year period.

**The Carbon Trust** was launched in April 2001, and receives two-thirds of its annual budget from recycled receipts from the Climate Change Levy, it encourages and promotes the development of low carbon technologies to support the transition to a low carbon economy. It offers an interest free loan scheme for small and medium-sized businesses and provides funding for the development of low carbon technologies through the Low Carbon Innovation Programme.

**The Enhanced Capital Allowances Scheme**<sup>148</sup> enables businesses to claim 100 per cent. first year capital allowances on investments in a range of approved energy saving technologies.

**The UK Emissions Trading Scheme**<sup>149</sup> was launched in April 2002. Companies in Climate Change Agreements can trade within the scheme to help meet their targets. Participants entering directly into the scheme can trade to meet emission reduction targets delivering 1.1 MtC by 2006. Energy efficiency measures help participants to meet their targets.

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<sup>147</sup> This does not refer to the Kyoto Protocol but agreements made with commercial and industrial sectors that give rebates on the climate change levy in return for guaranteed reductions in emissions

<sup>148</sup> "Capital allowances enable businesses to write off their costs of capital assets against their taxable profits. Capital allowances on plant and machinery are generally given at 25 per cent a year on the reducing balance basis. 100 per cent first-year allowances enhance the tax relief by letting businesses set the whole of their expenditure on the designated equipment against their taxable profits of the period during which the investment is made." (source-Inland Revenue press notice, 15 July 2002 available at <http://www.gnn.gov.uk/gnn/national.nsf/IR/D23377EABCDC0D2280256BF7005CBD20?opendocument>)

<sup>149</sup> This scheme allows participants to take on emission reduction commitments. Participants in the scheme can gain credits if emission reductions beyond those commitments are made and the credits can be traded to other participants



New requirements have been introduced for **local authorities**. Authorities have to know their buildings' energy consumption and carbon emissions. From 2002–03 they are required to benchmark their energy use in operational property and street lighting, and will set local improvement targets from 2003–04.

**The Energy Efficiency Commitment** for 2002–05 (EEC) places a challenging but realistic obligation on electricity and gas suppliers to promote improvements in domestic energy efficiency. Suppliers will achieve individual EEC targets by encouraging and assisting consumers to take up energy efficiency measures. It is expected to save 0.4 million tonnes of carbon a year by 2005. It will also help those on lower incomes—who spend a larger proportion of their incomes on energy—by focussing at least 50 per cent. of energy savings on consumers in receipt of benefits or tax credits.

Since its launch in June 2000, the **new Home Energy Efficiency Scheme—which is now marketed as Warm Front**—has helped over 400,000 households through the installation of a range of insulation and heating measures. Warm Front is the Government's main programme for tackling fuel poverty, aimed at the most vulnerable groups in the private sector in England.

**The Community Energy Programme** is a £50 million grant programme operational from 2002–04 aiming to promote community heating in the UK, primarily through the use of CHP. It will install and refurbish community heating schemes, benefiting people on low incomes while contributing to the Climate Change Programme by reducing carbon emissions by an estimated 0.15 million tonnes of carbon a year.

**Part L of the Building Regulations** covering energy efficiency provisions was revised in October 2001 and the changes came into effect in 2002. These require work on new buildings and the refurbishment of the existing stock to conform to higher energy efficiency standards including those relating to building insulation, air-tightness, lighting, space heating, hot water, boiler performance and replacement glazing. It is estimated that the package of measures introduced in October will reduce carbon emissions from the domestic sector by 0.8 million tonnes per year by 2010.

The Treasury introduced in the 2002 Budget, a **VAT reduction on certain energy saving materials** installed under grant schemes.

The Government have provided funding for the **Energy Saving Trust (EST)** to help individual households, local authorities and others improve domestic energy efficiency. Since 2000, EST has created the Practical Help advisory service, expanded its local authority support programme providing dedicated staff to 23 areas across the UK, introduced a new grant scheme for innovative projects and expanded its network of Energy Efficiency Advice Centres providing households with advice and support. EST has developed the Energy Efficiency Recommended (EER) labelling scheme (with energy efficiency manufacturers,

retailers and installers) to provide easy identification of energy efficient products. EST has also developed EEI—the network of accredited installers in the insulation and heating industries.<sup>150</sup>

### Domestic energy efficiency

The Government supports domestic energy efficiency through the New Home Energy Efficiency Scheme (formerly the Home Energy Efficiency Scheme or HEES) and the Energy Efficiency Commitment (EEC).<sup>151</sup>

Following a transition period, New HEES and New HEES Plus, currently marketed as Warm Front Team, is now focused on the owner occupied and private rented sector. Originally, under the previous HEES scheme, a significant proportion of grants went to local authority tenants. Government research found that there was a higher proportion of fuel poor households aged 60 or over in private sector housing than in social sector housing.<sup>152</sup>

The following table uses data from the 1998 English House Condition Energy Follow-Up Survey (EFUS) to show the estimated number of fuel poor households aged 60 or more in social and private sector housing.

Million	<i>Number of fuel poor households aged 60 or more in social sector housing</i>	<i>Number of fuel poor households aged 60 or more in private sector housing</i>
Using definition (a)	0.5	1.4
Using definition (b)	0.8	1.5

Under the accepted definitions of fuel poverty:

(a) A household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10 per cent. of its income on all household fuel use.

(b) A household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10 per cent. of its income (excluding housing benefit and income support for mortgage interest) on all household fuel use

It was felt that the scheme should be targeted at the most vulnerable groups and those least likely to escape fuel poverty.

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<sup>150</sup> HC Deb 27 January 2003 cc549-51W

<sup>151</sup> Library Standard Note SNSC-00579 *The New Home Energy Efficiency Scheme (now Warm Front Team)* sets out the scope of the New HEES scheme.

<sup>152</sup> HC Deb 19 November 2001 c66W

All fuel poor households in the social housing sector will be assisted by separate housing programmes designed to bring all such properties up to a decent standard by 2010.

Under the *Home Energy Conservation Act 1995* local authorities are directly responsible for improving the energy efficiency of their own housing stock; local authorities must also prepare a report identifying measures to improve significantly the energy efficiency of all residential accommodation in their area and report on progress in implementing measures.<sup>153</sup>

The aim under the Act was a 30% improvement in domestic energy efficiency over a ten year period. Figures for the first six years show that an improvement of only 8% has been achieved during the first six years and the 30% target is unlikely to be met:

**Gregory Barker:** To ask the Secretary of State for Environment, Food and Rural Affairs what improvement in energy efficiency in domestic properties by 2010 she expects to result from local authorities' activities under the Home Energy Conservation Act 1995; what the predictions were in the UK Climate Change Strategy; and if she will make a statement on how the discrepancies will be addressed.

**Mr. Morley:** Circular 2/96 indicated that the Secretary of State expected energy conservation authorities' reports to show a strategy for making at least substantial progress towards a 30 per cent. improvement over a 10-year period. Improvement in the first six years is just over 8 per cent. It is therefore clear that authorities are not going to make the improvements they originally hoped for. Decisions about the future role of local authorities in local energy efficiency are expected to be covered in the Energy White Paper, which the Government aims to publish around the turn of the year.<sup>154</sup>

### Energy efficiency advice

A leading source of energy efficiency advice in local areas is on offer through the Energy Saving Trust. Customers can receive free, impartial advice on all aspects of energy use in the home by contacting their local Energy Efficiency Advice Centre (EEAC) on 0800 512 012. There are 52 Centres around the UK.

Services include a DIY home energy check questionnaire. When completed, this leads to a free evaluation of the energy efficiency of the home with a guide to which products will gain the maximum savings when installed.

The Energy Saving Trust website has much information and links on energy efficiency, including advice on energy efficient products through an Energy Efficiency Recommended database.

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<sup>153</sup> T Sefton, Targeting fuel poverty in England: is the government getting warm? *Fiscal Studies* 23(3) pp369-99

<sup>154</sup> HC Deb 5 November 2002 c218W

See: <http://www.saveenergy.co.uk/index.cfm?page=01080000>

### **Measures in the Energy White Paper**

Although improvements in energy efficiency is one of the central features of the White Paper, no firm targets for energy efficiency were included in it. The Government intends to improve energy efficiency by building on current initiatives. It will:

- consult on an expansion of the energy efficiency commitment to run from 2005 until at least 2008, at possibly twice its current level of activity. And ... work with energy suppliers and OFGEM to create an effective market in energy services;
- bring forward to 2005 the revision of building regulations, with higher standards for efficiency both in new buildings and in refurbishments;
- work with our European partners to agree higher standards for consumer and industrial appliances; and
- set an example within Government - improving energy efficiency in ... (Government) buildings and procurement.<sup>155</sup>

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<sup>155</sup> DTI press notice P/2003/114, *Energy White Paper Statement by the Secretary of State*, 24 February 2003.

## Energy Efficient Buildings

### Energy generation systems

Paragraph (2)(e) of Clause 1 of the Sustainable Energy Bill aims to place on a statutory footing a number of requirements to assess the role of energy generation systems that can be integrated into buildings, including but not restricted to photovoltaics, heat pumps, micro wind power and domestic micro combined heat and power systems.

### Solar heating

Solar heating systems can be divided into **active** and **passive** types. Active systems convert solar radiation into heat that can be used. In a passive system the building is designed to maximise the solar energy that falls on it. Passive systems remain expensive and will have limited application in the short term until more housing stock is replaced, but are worth considering at the design stage of new buildings.

Active domestic systems comprise water heating and space heating. However they are likely to be of limited application in the UK because we do not enjoy the same sunny conditions as some other countries and viable systems are determined by climatic conditions. In the UK there is a high proportion of diffuse sunlight and prolonged periods with little radiation. Systems not requiring direct sunlight that produce low-temperature heating are most suitable, such as heated swimming pools.

Solar space heating can be used in individual houses but is uncommon simply because large areas of collectors (20-40 m<sup>2</sup>) are required to provide sufficient heat in winter. It is possible to store heat collected during the summer and use it in winter (inter-seasonal systems) but this is only feasible in large systems such as solar district heating systems and these often require a supplementary heating source. Very large arrays of collectors are necessary for such schemes, and the cost of these and the other infrastructure make their installation expensive.

In terms of incentives for the installation of water heating solar panels, the market is considered to be mature in this area, and the range of incentives is generally limited. Until 2003 there have been no centrally funded grants, but VAT is charged at the reduced rate of 5% for the professional installation of systems.<sup>156</sup> Some electricity supply companies offer grants to customers to cover the costs of installation of water heating panels.

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<sup>156</sup> HM Customs and Excise press notice CE6 "Good news for all householders - VAT slashed on energy", 21 March 2000

In May 2002 a PQ indicated that support for solar water heating may be forthcoming under the Community and Household Scheme, now known as the Clear Skies Initiative.

Consideration is being given to whether support for solar water heating systems, in addition to other small- scale renewables, could be included in the £10 million Community and Household Scheme (CHS), which is currently being designed.<sup>157</sup>

### **Inter-seasonal technology**

Inter-seasonal technology attempts to store solar energy from the summer months for use in winter heating. In low latitude countries and tropical areas, where there is less call for heating, sunlight is constant for most of the year and it is easier to design and build energy efficient houses. In the higher latitudes the weak winter sun and relatively short daylight hours mean that there is rarely sufficient sunlight to meet buildings' energy demands. To develop a self-sufficient solar house requires use of both 'passive' and 'inter-seasonal' technologies. Passive designs aim to reduce the energy demand of the building through advanced insulation, while 'inter-seasonal' technology attempts to store solar energy from summer months for use in winter heating.

Government policy on support in this area was spelt out in May 2002:

Little work has been done in the UK on interseasonal storage. While heat may be 'free' and the technology itself quite simple, the cost of the necessary equipment and infrastructure is the barrier to wider exploitation. We will, however, be keeping a watching brief on seasonal heat storage developments<sup>158</sup>

### **Solar electricity (photovoltaics)**

Active solar systems also include the generation of electricity from solar energy (photovoltaics – PV) and may be used in buildings in the form of roofing or cladding. Again, they are likely to be of limited application in the UK because of climatic conditions.

As part of the Government's ongoing review of renewable energy, ETSU (formerly the Energy Technology Support Unit) compiled in 1999 supporting analysis for the DTI. This contains information about active solar schemes including domestic schemes, with economic analysis.<sup>159</sup>

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<sup>157</sup> HC Deb 22 May 2002 c400W

<sup>158</sup> HC Deb 26 May 2002 c796W

<sup>159</sup> *New and Renewable Energy: Prospects in the UK for the 21st Century: Supporting Analysis*, ETSU for DTI, March 1999, pp 27-36

Government support for solar photovoltaics comes in the form of grants, initially to support **Large Scale and Domestic Solar PV Systems Field Trials** and latterly, grants to support a **Major Photovoltaics Demonstration Programme (MPDP)**. A target has been set for 3,000 domestic roofs and 140 non-domestic (public and commercial) roofs to receive solar panels over the next three years, for which £20 million has been allocated. Library Note SNSC:01827 *Solar power grants* explains in more detail the background to the schemes and how to apply for grants.

### Clear Skies Initiative

The PIU report, 'Renewable Energy in the UK—Building for the Future'<sup>160</sup> set out its recommendations for the allocation of an additional £100 million that would be made available to support certain renewable technologies, announced by the Prime Minister in March 2001. The following funding was recommended:

- £10m dedicated to support innovative PV schemes (see above)
- £10m for PV, solar hot water, biomass heat and other heat technologies that can be utilised directly in homes, communities and businesses

The £10 million has been allocated to develop the Clear Skies Initiative,<sup>161</sup> supported by the DTI and the Building Research Establishment (BRE), 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 £5,000 whilst community organisations can receive up to £100,000 for grants and feasibility studies.

Community groups can receive advice through the Community Renewables Initiative<sup>162</sup> or Renewable Energy Advice Centres. Clear Skies supports projects in England, Wales and Northern Ireland. Homeowners and community groups in Scotland can apply for support under the Scottish Community Renewables Initiative.<sup>163</sup>

The technologies supported under the scheme are:

- Solar Water Heating  
Households – fixed £500; Community 50% or £10,000 - whichever is smaller
- Wind
- Hydro
- Ground Source Heat Pumps

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<sup>160</sup> Renewable Energy in the UK—Building for the Future', PIU, Cabinet Office 2001

<http://www.cabinet-office.gov.uk/innovation/2001/resource/attachments/renewanalytpap1nov.pdf>

<sup>161</sup> <http://www.clear-skies.org/default.htm> (Formerly the Community and Household Scheme)

<sup>162</sup> <http://www.countryside.gov.uk/communityrenewables/>

<sup>163</sup> <http://www.est.org.uk/scri/>

- Automated Wood Pellet Stoves
- Wood fuel boilers

Grants are issued only when approved products are installed by an accredited installer.

Grants for photovoltaics are excluded under the scheme to avoid duplication with the MPDP.<sup>164</sup>

### **Capital allowances**

Enhanced capital allowances (ECAs) for investments in energy saving technologies were introduced in April 2001. Further energy-saving technologies were announced in Budget 2002.<sup>165</sup> Businesses may now claim 100 per cent enhanced capital allowances on their spending on designated energy-saving technologies, such as boilers (including efficient oil-fired condensing boilers), pipe insulation, thermal screens, Combined Heat and Power, lighting, motors, variable speed drives, equipment, heat pumps, radiant and warm air heaters, solar heaters, energy efficient refrigeration and compressor equipment, for leasing, letting or hiring.

The Carbon Trust took over the management of the Enhanced Capital Allowance (ECA) scheme on behalf of the Department for Environment, Food & Rural Affairs with effect from 5 August 2002.<sup>166</sup>

### **Community Energy Programme**

The two-year Community Energy programme is jointly managed by the Energy Saving Trust and the Carbon Trust. The programme provides support for the installation, extension or refurbishment of community heating schemes. It applies to England, Wales, Scotland and Northern Ireland. The programme was announced by John Prescott on 26 April 2001<sup>167</sup> and a first round of bidding for projects was announced on 24 January 2002.<sup>168</sup> A second round of bidding was opened in August 2002, when eight successful first round bids were unveiled.<sup>169</sup> Ten second round projects were announced on 6 February 2003.<sup>170</sup>

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<sup>164</sup> HC Deb 18 December 2002 c827-8W

<sup>165</sup> Budget 2002 HC 592 2001/02. April 2002

<http://www.official-documents.co.uk/document/deps/hc/hc592/hc592.html>

<sup>166</sup> [www.eca.gov.uk](http://www.eca.gov.uk)

<sup>167</sup> DTLR News release 2001/0237, *Prescott announces community energy programme*, 26 April 2001 [http://www.press.dtlr.gov.uk/pns/DisplayPN.cgi?pn\\_id=2001\\_0237](http://www.press.dtlr.gov.uk/pns/DisplayPN.cgi?pn_id=2001_0237)

<sup>168</sup> DEFRA News Release 32/01, *Michael Meacher launches Pathfinder Bidding round for community energy programme*, 24 January 2002, <http://www.defra.gov.uk/news/2002/020124a.htm>

<sup>169</sup> <http://www.energy-efficiency.gov.uk/index.cfm>

<sup>170</sup> <http://www.actionenergy.org.uk/ActionEnergy/Press+centre/FIVE+million+reasons+to+apply+for+Community+Energy+grants.htm>



The Community Energy grant is funded by DEFRA from the Capital Modernisation Fund. A total of £50 million has been allocated from the Fund for the period 2002-2004. Of this, a dedicated £2million fund has been set aside for development funding. The Community Energy programme aims to stimulate carbon savings of 0.5 MtC per annum by 2010.

### **Energy efficiency in Buildings**

Paragraph (3)(a) of Clause 1 of the Sustainable Energy Bill places on a statutory footing the assessment of the role of energy certification schemes for new and existing buildings and inspection schemes for boilers and heating and cooling systems. This is a requirement under the new EU Directive on Energy Performance of Buildings.

### **EU Directive on Energy Performance in Buildings**

The final text of the new European Directive, 02/91/EEC,<sup>171</sup> on the energy performance of buildings was agreed in December 2002. It covers homes alongside businesses and the public sector. The provisions are set in the context of European efforts to save energy, combat climate change, and protect natural resources. Under the new law Member States will have to establish methods to calculate the energy performance of buildings, which must take account of the positive effects of electricity from cogeneration (combined heat and power) and of district or block heating/cooling systems. Feasibility studies for using cogeneration or district heating will have to be carried out for new buildings with more than 1,000 m<sup>2</sup> useful floor area before construction starts; reasons for not using either option must be made publicly available.<sup>172</sup> Older buildings over 1,000 m<sup>2</sup> will have to be renovated to be brought up to acceptable standards.

Member States will also have to set national minimum standards for the energy performance of buildings and create certification and inspection systems to promote energy savings. All buildings when sold or let and all existing public service buildings over 1,000 m<sup>2</sup> will be required to have certificates or energy labels by 2008 and have them on public view. Home owners will be required to have an energy audit on their home to show to potential buyers before they can sell the property, giving advice on how the property can be improved. Regular efficiency tests of boilers and air conditioning systems in the public sector will be required. Trained and accredited assessors will be required to perform the tests. EU States will have until January 2006 to incorporate the Directive's requirements into national legislation.

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<sup>171</sup> OJ L 1/65, 16.12.02, [http://europa.eu.int/eur-ex/en/dat/2003/l\\_001/l\\_00120030104en00650071.pdf](http://europa.eu.int/eur-ex/en/dat/2003/l_001/l_00120030104en00650071.pdf)

<sup>172</sup> "Why we should embrace this EU Directive", *New Statesman*, 18 June 2001

The European Commission in its Green Paper “Towards a European Strategy for Energy Supply”<sup>173</sup> highlighted the importance of savings in the building and transport sectors in reducing greenhouse gas emissions, and addressing the dependence on external energy sources to meet its needs. It noted that the domestic and service<sup>174</sup> sectors were the largest overall users of energy, mainly for heating, air conditioning, lighting and equipment and that there was the potential for large savings, of the order of 22% of present consumption by 2010 from the so called ‘building envelope’ and its installations.<sup>175</sup> The Commission noted that measures that could bring about the required savings include, for the building structure, better insulation; replacement of old boilers with more efficient models; more efficient components and controls for lighting and air conditioning systems; and use of environmentally friendly energy generation installations.

The Directive was brought forward with the aim of introducing common methodologies, energy performance standards and certification schemes for new and existing buildings, and regular inspections of boilers and air conditioning systems.

Andrew Warren, the Director of the Association for the Conservation of Energy (one of the sponsors of the Sustainable Energy Bill) advises the European Alliance of Companies for Energy Efficiency in Buildings (EuroACE), a lobbying group of companies involved in energy efficiency measures. He notes that not all EU member states will be as well placed as the UK to implement the Directive, which already has methodologies for assessing the energy rating of new housing through the Standard Assessment Procedure. As yet there is no satisfactory measure for commercial buildings that can compare shops, hotels or offices on a like for like basis.

He argues that businesses are capable of delivering far greater efficiencies than the European Climate Change Programme envisaged the Directive could deliver by for 2010, namely 450 million tonnes of carbon (mtc), providing that agreement can be reached on methodologies.<sup>176</sup> Such efficiencies leading to a cut in carbon dioxide emissions of 12.5 per cent would enable some states to more easily reach their Kyoto targets by 2010.<sup>177</sup>

The European Insulation Manufacturers Association (EURIMA) commissioned a report that states that good thermal insulation of buildings permits savings of up to 24% in

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<sup>173</sup> Towards a European Strategy for the security of energy supply Green Paper  
[http://europa.eu.int/comm/energy\\_transport/doc-principal/pubfinal\\_en.pdf](http://europa.eu.int/comm/energy_transport/doc-principal/pubfinal_en.pdf)

<sup>174</sup> Includes offices, schools, hospitals, wholesale and retail trade, hotels, restaurants, leisure facilities but not industrial buildings

<sup>175</sup> Heating, ventilation and cooling systems

<sup>176</sup> Directive should be greatest step change in energy in buildings, *Energy in Buildings & Industry* July/August 2002

<sup>177</sup> An assessment of EU member states’ climate change programmes and the likely contribution to these from buildings related measures can be seen at:  
<http://www.styrax.org/demons/EuroACE/doclib/Documents/1035454617.2>

heating costs.<sup>178</sup> The annual savings in terms of CO2 emissions could be as much as 353 million tonnes.

### **Standard Assessment Procedure (SAP)**

The Standard Assessment Procedure (**SAP**) is the Government's approved procedure for calculating an **energy rating**. It is designed to evaluate energy ratings for buildings irrespective of its size, location and characteristics or the lifestyle of its occupants. The SAP energy rating is a measure of the heating and hot water yearly cost for a building, stated in a scale of 1 (extremely poor) to 120 (extremely good) with a score of 80 or more considered to represent an energy efficient home. The average (not new) home has a rating of 40-50. Most new homes achieve ratings of 80-100.

In 1995 the Building Regulations changed to include a requirement for a SAP rating on every new home. Further changes to the Regulations in 2000 included a new requirement for builders to post a notice in every finished dwelling receiving building control approval from 1 January 2001 stating its SAP energy rating.<sup>179</sup> Research by National Energy Services (NES) and de Montfort University reveals that over 95% of house builders are failing to comply with the new requirement.<sup>180</sup> The Office of the Deputy Prime Minister is conducting talks with the construction industry to ensure the law is acted upon.<sup>181</sup>

Another method for calculating building energy ratings is the **Carbon Index method**. This is a measure of the carbon emitted to the atmosphere from the heating and hot water fuel per square metre of floor area in a year, on a log scale of 0-10. Compliance can be achieved by achieving a Carbon Index of 8 or higher.

### **Sellers' packs<sup>182</sup>**

The idea of an energy assessment for potential home buyers is not a new concept in the UK. After a pilot study in Bristol the government aimed to make them a statutory requirement as part of a home seller's pack. Legislation to introduce sellers' packs was introduced in the Homes Bill on 13 December 2000, but was unable to complete its

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<sup>178</sup> [http://www.eurima.org/public/downloads/brochure\\_ecofys\\_final.pdf](http://www.eurima.org/public/downloads/brochure_ecofys_final.pdf)

<sup>179</sup> DTLR News Release 2000/0641, *Government introduces Energy Labelling for all new homes*, 13 October 2000

<sup>180</sup> National Energy Foundation News release, *Consumers left in the dark when it comes to buying energy efficient new homes*, 27 January 2003 <http://www.natenergy.org.uk/news-013.htm>

<sup>181</sup> HL Deb 12 March 2003 c1312

<sup>182</sup> Library Note SN/SP/2097 covers issues raised in debates on the Homes Bill 2000/01, available on the Library Intranet.

passage before Parliament was dissolved for the General Election. It was reintroduced as part of the draft Housing Bill in November 2002.<sup>183</sup>

### **Heating and cooling**

Clause 2 (c) and (d) of the Bill includes steps to achieve an improvement in domestic energy efficiency through progressively raising the efficiency of boilers and promoting improved heating controls.

Lord Hunt of Chesterton asked a Starred Question in the House of Lords on sustainable use of energy for heating and air conditioning:<sup>184</sup>

Given that heating and cooling buildings consume approximately half of all the energy used in the UK, what targets the government have for making changes in building regulations to ensure that future designs will use less energy and become more sustainable.

In a wide ranging reply, Lord Rooker noted:

My Lords, in October 2001 we made significant improvements to the energy provisions in the building regulations, which took effect in April 2002. The changes affect both heating and cooling demand. An announcement about further changes will be made in the forthcoming energy White Paper. As well as targeting the construction of new buildings, we are applying the regulations to more work on the existing stock.

Chapter three of the Energy White Paper examines the role that energy efficiency can play in making energy savings. In the domestic setting and through higher building standards, progressive raising of efficiency standards is advocated.

Within the parliamentary estate measures are underway to introduce more energy efficient equipment.<sup>185</sup>

**The Chairman of Committees:** Energy consumption for 2001–02 was 53.5 million kW hr. The current works to modernise the main boiler and chiller plant in the Palace of Westminster will bring significant improvements in plant efficiency. When the commissioning data are available from the new equipment, targets for future consumption can be set.

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<sup>183</sup> Office of the Deputy Prime Minister News Release, *Seller's packs will modernise home selling and buying process*, 28 November 2002. <http://www.odpm.gov.uk/news/0211/0134.htm>

<sup>184</sup> HL Deb 20 February 2003 c1266

<sup>185</sup> HL Deb 17 February 2003 c161WA

## **Energy Efficiency Best Practice Programme**

Established in 1989 the Government's Energy Efficiency Best Practice Programme (EEBPP)<sup>186</sup> has been the principal mechanism for promoting best practice in commercial buildings. It targets designers, clients and occupiers, financial institutions and the construction industry with tailored advice and support, including site specific design advice, seminars, briefings and help for small businesses.

Responsibility for the Energy Efficiency Best Practice Programme transferred to the Carbon Trust in April 2002 to coincide with the introduction of the Climate Change Levy, a measure to encourage greater energy efficiency in commercial buildings. It has been rebranded and relaunched as Action Energy.<sup>187</sup>

The Energy Savings Trust focuses attention on encouraging very small businesses, the domestic sector and road transport to become more energy conscious and efficient.<sup>188</sup>

## **Manufacture and transport of construction materials**

Paragraph 3(b) of Clause 1 of the Sustainable Energy Bill aims to limit energy use in the manufacture and transportation of building materials and in the construction of buildings.

According to a report by the Buildings Research Establishment<sup>189</sup> the construction industry is the largest consumer of resources, especially land and energy, of all UK industries. It states that 10 % of UK carbon dioxide emissions and at least 3% of UK energy consumption are attributable to the manufacture and transport of construction materials, whilst energy use in building accounts for 49% of the UK's delivered energy consumption. Some energy savings are possible through better recycling of construction wastes.

## **Building Regulations**

Clause 2 (1) (f) of the bill encourages the appropriate authority to take responsible steps to improve standards of new build and refurbishment through revisions to the building regulations.

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<sup>186</sup> <http://www.energy-efficiency.gov.uk/index.cfm>

<sup>187</sup> <http://www.actionenergy.org.uk/ActionEnergy/default.htm>

<sup>188</sup> <http://www.est.org.uk/>

<sup>189</sup> Sustainable Construction – developing an industry agenda – the Data, CR258/99 Building Research Establishment 2000

## Energy efficiency

The Building Regulations apply to England and Wales and cover the erection of new buildings, extensions and some refurbishment work. Energy conservation is addressed through technical requirements in the Regulations that are underpinned by approved technical guidance in the form of Approved Documents (ADs). The technical guidance about energy efficiency and thermal insulation can be found in ADs L1 and L2.

Following a consultation exercise the *Building (Amendment) Regulations* SI 2001/3335 were published in October 2001 and came into force in April 2002.<sup>190</sup> Ways of meeting the new regulations were published as ADs L1 (dwellings) and L2 (other buildings) on 31 October 2001.<sup>191,192</sup> Announcing the new regulations, the Housing Minister for Local Government said:

The guidance in the new Approved Documents raises the performance standards for building insulation, introduces new ones for air tightness and solar shading, widens the standards for heating to include boiler performance, widens the lighting standards to include luminaires and display lights, and introduces new ones for air conditioning systems including their controls. To back these physical measures up there are new requirements for testing and commissioning that will help to make designers' intended performance capabilities a reality, and the provision of users' manuals and log books so that occupiers can obtain all of the potential benefits.

To back up the guidance in these Approved Documents we have also published today 'Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings'. This document was prepared in collaboration with industry and provides construction details which are a way of showing compliance with the new standards for thermal insulation and airtightness.

Part L now also addresses summer performance as well as insulation against winter cold and heating and hot water systems. There are new building fabric provisions aimed at limiting solar overheating, and new air conditioning and mechanical ventilation measures aiming to ensure that, when specified, they can perform efficiently.

These new provisions are not restricted to new buildings. Around a half of the carbon benefits mentioned above will come from the application of the new requirements for work in existing buildings. For dwellings, we have introduced provisions that apply whenever new windows and glazed doors, boilers and hot water vessels are to be replaced. For buildings other than dwellings the same

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<sup>190</sup> The ADs are available on the DLTR website at [www.safety.dtlr.gov.uk/bregs/brads.htm](http://www.safety.dtlr.gov.uk/bregs/brads.htm)

<sup>191</sup> *Approved Document L1-Conservation of Fuel and Power in Dwellings*, 2002 Edition ISBN 011 7536091

<sup>192</sup> *Approved Document L2- Conservation of Fuel and Power in Buildings other than Dwellings*, 2002 Edition, ISBN 011 7536105

provisions apply for windows and all the building systems addressed by Part L, such as heating, ventilation, air conditioning and lighting, are also included. These provisions are qualified however, in that reasonable provision depends on the circumstances in the particular case. Sympathetic treatment of historic buildings is necessary for instance to enable conservation and restoration and new guidance in both the Approved Documents will help to establish what reasonable provision is in these special cases.<sup>193,194</sup>

The government has promised in the Energy White Paper the next major revision of the building regulations, which they hope to bring into effect by 2005.<sup>195</sup>

## Glazing

The PIU's energy review emphasised the role that energy efficiency measures could make in cutting home and non-domestic heating bills and making a substantial contribution to reducing carbon dioxide emissions.<sup>196</sup> Under Part L of the building regulations, there are new requirements on the replacement window and glazing industry to fit new or replacement windows with improved U-values, that will cut down the heat lost through the window and keep in heat from solar gain.<sup>197</sup>

## Self-certification schemes under the Building Regulations

Four new self-certification schemes<sup>198</sup> have been introduced under the Building Regulations.<sup>199</sup> The regulations<sup>200</sup>, which do not set any technical standards, were laid before Parliament on 5 March 2002. Amongst the schemes which came into force on 1 April 2002, are:

**FENSA** (Fenestration Self-Assessment Scheme). People wishing to replace their windows will need to get building control approval either from their local authority or through the new self-certification scheme. The scheme applies to windows and frames - but not to broken windows.

The Heating Equipment and Testing Approvals Scheme (**HETAS** Ltd) for the installation of solid fuel heating producing appliances, such as a wood burning stove.

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<sup>193</sup> DTLR press notice 463, *New regulations could cut home heating bills by a quarter*, 31 October 2001

<sup>194</sup> HC Deb 31 October 2001cc 679-81W

<sup>195</sup> Energy White Paper para 3.16

<sup>196</sup> The Energy Review. A Performance and Innovation Unit Report. Annex Five. February 2002.  
<http://www.piu.gov.uk/2002/energy/report/index.htm>

<sup>197</sup> Library Note SNSC:1675 sets out the position in greater detail.

<sup>198</sup> DTLR Press Notice 082 'Go-ahead for self-certification schemes under building regs' 5 March 2002

<sup>199</sup> *Building Regulations* SI 2000/2531

<sup>200</sup> *Building (Amendment) Regulations* SI 2002/440

The Oil Firing Technical Association for the Petroleum Industry (**OFTEC**) for oil fired heating appliances, fittings and oil storage tanks.

The scheme operators will be responsible for maintaining the standards necessary for their members to self-certify their work. The Department of Trade and Industry will monitor the extent to which standards have been maintained and improved as a result of the self-certification initiative.<sup>201</sup>

### **VAT on energy saving materials**

In Budget 2000 the Chancellor of the Exchequer cut, from 17.5 per cent to 5 per cent, the rate of VAT that applies to the professional installation of all insulation, draught stripping, hot water and central heating system controls in people's homes and to the installation of solar panels.<sup>202</sup>

The reduced rate does not apply to the purchase of materials for DIY purposes. A recent PQ explains why the reduced rate cannot be extended:

**John Healey:** European Court of Justice case 416/85 concerned the scope of the UK's zero rates. The Court held that zero-rating could only be justified for clearly defined social reasons and for the benefit of the final consumer.

The long-standing formal agreements with our European partners make entirely separate provision for reduced rates (of no lower than 5 per cent.) and allow relief for the 'supply, construction, renovation and alteration of housing provided as part of a social policy'. Under this provision, the UK has been able to introduce a reduced rate for installations of certain energy-saving materials in homes. Our current policy is to restrict the relief to the installation of materials whose primary purpose is to save energy, and the European Court case has no bearing on this limitation.

As I explained in my answer of 22 January, we are not able to introduce a reduced rate of VAT for energy-efficient or energy-saving materials sold direct to the public. This is not because of the European Court case, but rather that the reduced rate provision makes clear that goods and materials can only have a reduced rate when they are supplied as part of an overall service.<sup>203</sup>

The European Union will review reduced rates of VAT during 2003.

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<sup>201</sup> HC Deb 30 April 2002 c678W

<sup>202</sup> HM Customs and Excise Budget News Release C&E 6, *Good news for all householders – VAT slashed on energy saving*, 21 March 2000

<sup>203</sup> HC Deb 25 February 2003 c388W





## Combined Heat and Power

Combined Heat and Power (CHP) is a form of electricity generation in which both the electricity and associated heat generated as a by-product are used, making it a very efficient form of generation. CHP is particularly efficient if the generator is operated primarily to match the requirement for heat, and the electricity generated is used on site or fed to the electricity network. The effective efficiency of CHP can be 80% or higher.

Traditionally CHP has been used on large scale industrial sites, but smaller plants, including micro-CHP<sup>204</sup> suitable for individual dwellings, will be available soon.

The efficient operation of CHP plant minimises carbon dioxide emissions per unit of energy production. As such CHP is an important element in the Government's strategy for reducing greenhouse gas emissions, and can play a significant part in achieving the UK's Kyoto targets as well as the domestic target of reducing carbon dioxide emissions by 20 per cent on 1990 levels by 2010.

As noted by the PIU report<sup>205</sup> it is a low, but not zero, cost option for carbon abatement, and is eligible to benefit from policies that put a price on carbon. It is a well developed technology that does not need financial support in the way that, for example, renewable energy does. The PIU pointed out that for it to develop, market and institutional barriers should be removed.

Since 2001 CHP plants have faced financial difficulty, partly because the system of pricing for electricity under the New Electricity Trading Arrangements (NETA)<sup>206</sup> is less favourable to CHP generators than some other forms of electricity generation which have a more predictable output, but also because wholesale gas prices have risen while the price achieved for electricity has fallen, and it is not economically viable to use expensive gas to generate cheaper electricity. Small CHP generators may also face difficulty and have to pay high costs connecting to local electricity networks.

### Draft CHP strategy and target

On 15 May 2002, after a long delay, the Government published a consultation on its draft CHP strategy.<sup>207</sup> The consultation period ended on 7 August 2002 and a summary of

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<sup>204</sup> A generic term for appliances that provide heating and generate up to 5 kilowatt of electricity. They use a range of fuels and technologies.

<sup>205</sup> The Energy Review, Cabinet Office, February 2002.

<sup>206</sup> Essentially, NETA is a new wholesale electricity market, comprising physical and derivatives trading between generators and suppliers of electricity in England and Wales. One of the underlying aims of NETA was to bring about a more competitive, free-trade market to bring downward pressure on the bulk price of electricity, and thus benefit consumers. See also Library Note SN/SC/1392, Electricity Trading II- Implications of NETA

<sup>207</sup> DEFRA, The Government's Strategy for Combined Heat and Power to 2010-Public Consultation Draft, May 2002. Available at <http://www.defra.gov.uk/environment/consult/chpstrat/index.htm>

responses has been published.<sup>208</sup> These have fed into the Energy White Paper. The draft strategy reiterated the Government's commitment to a target of at least 10 GWe<sup>209</sup> of installed 'Good Quality CHP' by 2010. It is approximately half of that at present.

'Good Quality CHP' refers to CHP generation that is sufficiently energy efficient in operation. The CHP Quality Assurance programme (CHPQA) launched in May 2000 determines that quality by providing a practical determinate method for assessing all types and sizes of CHP scheme.

The strategy includes a range of measures. The implementation of most of these has already been announced and the chief of them is exemption from the Climate Change Levy (CCL) which was in the Budget 2001. This exemption is estimated to be worth benefits of £15m annually rising to £25m by 2010.<sup>210</sup> state aid approval for the exemption of CHP electricity from the CCL has now been given.<sup>211</sup>

Other measures include:

Climate Change Agreements<sup>212</sup> with energy-intensive industry sectors which anticipate the use of CHP;

The emissions trading scheme<sup>213</sup>;

Eligibility for enhanced capital allowances<sup>214</sup> to stimulate investment;

Business rates<sup>215</sup> exception for CHP power generation plant and machinery;

Changes to the licensing regime, benefiting smaller generators;

A reduction in VAT on certain grant-funded micro-CHP installations;

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<sup>208</sup> Available at <http://www.defra.gov.uk/environment/consult/chpstrat/index.htm>

<sup>209</sup> 10 gigawatts of electricity (GWe) equals 10,000 megawatts of electricity (MWe).

<sup>210</sup> *Utilities Journal*, July 2002, pp36-7

<sup>211</sup> HC Deb 20 March 2003 c1073

<sup>212</sup> This does not refer to the Kyoto Protocol but agreements made with commercial and industrial sectors that give rebates on the climate change levy in return for guaranteed reductions in emissions.

<sup>213</sup> This scheme allows participants to take on emission reduction commitments. Participants in the scheme can gain credits if emission reductions beyond those commitments are made and the credits can be traded to other participants.

<sup>214</sup> Capital allowances enable businesses to write off their costs of capital assets against their taxable profits. Capital allowances on plant and machinery are generally given at 25 per cent a year on the reducing balance basis. 100 per cent first-year allowances enhance the tax relief by letting businesses set the whole of their expenditure on the designated equipment against their taxable profits of the period during which the investment is made. Source: IR press notice, *Tax Reliefs for Further Energy Saving Investments Expanding the Enhanced Capital Allowances Scheme*, 15 July 2002.

<sup>215</sup> The rates that a business pays to the local authority.

The launch of the £50m Community Energy programme to encourage CHP in community heating schemes; and

Promotion and support by the Carbon Trust, in non-domestic markets, and the Energy Saving Trust, in domestic markets, of energy efficiency and low-carbon technologies, including CHP.<sup>216</sup>

### **Measures to encourage CHP**

Since 2000, the Government has introduced a wide range of measures, including market incentives, guidance and information, financial assistance and legislative action to support the growth of CHP capacity. The measures include those in the consultation detailed above plus the establishment of the CHP Club, which is the main promotional route for CHP ([www.chpclub.com](http://www.chpclub.com)). The full range of measures is set out on the Department for Environment, Food and Rural Affairs (DEFRA) website.<sup>217</sup>

The Energy White Paper contained the following further range of measures to support CHP:

Requirement for significant evidence that power station consent applicants have considered all economically viable options for CHP and community heating.

Emphasise the benefits of CHP and community heating whenever planning or sustainable development guidance is introduced or reviewed.

Work with Ofgem to ensure a level playing field under NETA for smaller generators, including CHP.

Set targets for use of CHP in the Government Estate.

Explore incentivising CHP within any expansion of the domestic Energy Efficiency Commitment from 2005.

Support field trials designed to evaluate the benefits of micro-CHP.

Invite the Energy Saving Trust and the Carbon Trust to review their current and future programmes to ensure they reinforce delivery of our CHP target.

Work on a framework for pilot projects under the UK Emissions Trading Scheme for which CHP projects may be eligible.<sup>218</sup>

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<sup>216</sup> *ibid*

<sup>217</sup> <http://www.defra.gov.uk/environment/energy/chp/>

<sup>218</sup> HC Deb 27 February 2003 c673W

## The European position

European Community legislation is also being formulated on CHP, or cogeneration as it is known in this context. A draft EEC Directive, 112381/02 of 29 July 2002<sup>219</sup>, sets out a framework for the promotion of cogeneration within the European Union. The initial aim of this is to reduce energy demand as a means to reduce both dependence on external energy supplies and the emission of carbon. The final aim, following the completion of the internal market, is to achieve a level playing field for the promotion of cogeneration across Member States. The details are contained in an explanatory memorandum that sets out the content of the eleven articles.<sup>220</sup>

The UK government has not yet finalised its opinion on the measure which will depend upon clarification of a number of issues, the outcome of the Regulatory Impact Assessment, and responses to a consultation that the UK plans to launch on the proposals. However, it appears that the measure as drafted is likely to demote rather than promote CHP in the UK for three reasons. Firstly, the requirement for the issue of certificates of origin for electricity produced will place an extra burden of compliance on some operators. Secondly, if, as suggested, support is not given to plants with a capacity in excess of 50 MWe, many installations will become uneconomic. Thirdly, the proposed definition of electricity from cogeneration is likely to require additional metering at many installations costing many thousands of pounds per installation.

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<sup>219</sup> Or COM (02) 415

<sup>220</sup> From *Explanatory Memorandum on European Community Legislation*, EMEC 1(5/02)

## Fuel poverty

A household is in fuel poverty if it needs to spend more than 10% of its income on all household fuel use, including maintaining a satisfactory heating regime. This compares with the average proportion of income spent on fuel by all households of about 3.5%.<sup>221</sup> An adequate standard of warmth is generally defined as 21°C in the living room and 18°C in other occupied rooms.<sup>222</sup>

Fuel poverty is caused by a number of factors including the energy efficiency of the home, fuel costs and household income. Other factors may be important such as the size of the property, and the number of people living in it. Lack of warmth can damage people's health, and particular risks apply to older people, children and those who are disabled or have a long-term illness. Thus, fuel poverty imposes wider costs on the community.

In the calculation of fuel poverty there are two methods of assessing income which either includes or excludes Housing Benefit and Income Support for Mortgage Interest. Clearly, the numbers in fuel poverty are greater if this income is excluded.

Fuel poverty is a devolved issue and there are slight differences in the definitions that apply to each country within the UK, but work is underway on their convergence.

Under the *Warm Homes and Energy Conservation Act 2000* in England and Wales and the *Housing (Scotland) Act 2001* in Scotland the Government has a legal obligation to end fuel poverty, as far as is reasonably practicable, by a specified target date.

The Government's Fuel Poverty Strategy<sup>223</sup>, published in November 2001, sets out policies for ending fuel poverty in vulnerable households in England by the target date of 2010. These are older households, families with children and householders who are disabled or have a long-term illness.<sup>224</sup> Once progress has been made on this priority group, fuel poverty in other households will be tackled. It is expected that the Strategy will evolve in the light of experience, and the Government intend to consult shortly on a clarification statement to it.<sup>225</sup> A number of issues remain to be tackled. These include definitions, targets, co-ordination between initiatives that deliver energy efficiency improvements, extension of the gas network and other technologies, hard to heat homes, under-occupation, and shortage of gas engineers.

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<sup>221</sup> DTI press notice P/2003/131, *Warmer homes for millions*, 4 March 2003.

<sup>222</sup> World Health Organisation recommendations

<sup>223</sup> UK Fuel Poverty Strategy, DTI, 21 November 2001.

<sup>224</sup> For further details see RP 01/105, *The Home Energy Conservation Bill*, Bill 11 of 2001-02.

<sup>225</sup> HC Deb 21 June 2002 cc 605-6W

The Fuel Poverty Advisory Group, which was set up to report on progress of delivery and advise on the Strategy, published its first annual report on 4 March 2003.<sup>226</sup> Its content was summarised in two press notices.<sup>227-228</sup> The report indicates that the number of households in fuel poverty<sup>229</sup> in the UK has fallen by over 40% or about 2.5 million since 1996. At that time there were 5.5 million households so classified, compared with about 3 million at present. Within that total, the number of *vulnerable* households in fuel poverty in England has also fallen from about 3 million in 1996 to about 1.4 million in 2001. It is predicted in the Energy White Paper that on current forecasts of economic growth about 1 million more households could be taken out of fuel poverty by 2010.

### Specific targets

As already mentioned, fuel poverty is a devolved issue and each country within the UK has specific interim targets:

**England** - By 2004, to have assisted 800,000 vulnerable households through the Home Energy Efficiency Scheme (HEES) now marketed as the Warm Front Team (WFT) and to reduce the number of non-decent social sector homes by one third (though not all of these will be occupied by fuel poor households).

**Scotland** - By 2006, to ensure that all pensioner households and tenants in the social rented sector live in a centrally heated and well insulated home.

**Wales** - By March 2004, to have assisted 38,000 households likely to be in fuel poverty through the Home Energy Efficiency Scheme for Wales.

**Northern Ireland** - By 2006, to have assisted at least 40,000 households in fuel poverty through the new Warm Homes Scheme and partnership programmes.<sup>230</sup>

### Measures to tackle fuel poverty

A range of measures have been implemented to address fuel poverty. These include:

\_ programmes to improve the energy efficiency of fuel poor households. These include the separate home energy efficiency schemes within each country as well as efforts through local authorities and registered social landlords.

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<sup>226</sup> Fuel Poverty Advisory Group First Annual Report, DTI, 4 March 2003.

<sup>227</sup> DTI press notice P/2003/131, *Wqrmer homes for millions*, 4 March 2003.

<sup>228</sup> DTI press notice, *Fuel Poverty Advisory Group- first annual report*, 4 March 2003.

<sup>229</sup> Using the definition including Housing Benefit and Income Support for Mortgage Interest.

<sup>230</sup> UK Fuel Poverty Strategy, DTI, 21 November 2001, p3-4

- \_ continuing action to maintain the downward pressure on fuel bills, ensuring fair treatment for the less well off, and supporting the development of energy industry initiatives to combat fuel poverty.
  
- \_ continuing action to tackle poverty and social exclusion recognising that these are multi-dimensional problems.
  
- \_ Warm Zones - an area based approach to eliminating fuel poverty by maximising co-ordination now up and running
  
- \_ gas engineers shortage - steps taken to tackle this shortage using new training schemes etc
- \_ gas network extension - working group set up to look at this issue has now reported to Ministers with recommendations
  
- \_ pilot schemes on renewable energy sources and micro CHP - are about to be set up to explore how these technologies can be used to help the fuel poor, particularly in areas without access to mains gas<sup>231</sup>

## **The Energy White Paper**

The PIU report concentrated on the impact its proposals would have upon the numbers of households in fuel poverty. It concludes that with energy efficiency programmes and the likely rise in incomes, fuel poverty should be substantially diminished by 2010. It states that the Government should stage the introduction of policies that increase costs and monitor their impact, to minimise the effects on the fuel poor.

In the Energy White Paper the Government reaffirmed its commitments and policies on fuel poverty, and introduced a further aim that, as far as reasonably practicable, no household in Britain should be living in fuel poverty by 2016-18. The range in dates reflects the different positions in different parts of the UK.

The target date in England and Scotland is November 2016. In Scotland there is an interim target of achieving by 2006 a 30% reduction of people in fuel poverty as identified in the 2002 Scottish Housing Condition Survey. In their consultation document the Welsh Assembly Government has proposed a target date of 2018. In Northern Ireland there is no target date yet.

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<sup>231</sup> UK Fuel Poverty Strategy, DTI, 21 November 2001, p4