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Renewable Energy: Practicalities and Energy Efficiency: Government Responses

REPORT

1. Our report on Renewable Energy: Practicalities was published in July 2004. Our report on Energy Efficiency was published a year later, in July 2005. The object of this brief follow-up is to publish the Government responses to both our reports on the energy policy.

2. The initial Government response to Renewable Energy: Practicalities was received in January. Although it took six months to prepare, its quality was wholly unsatisfactory. We therefore invited the then Energy Minister, Mike O’Brien MP, to a private meeting, so that we could discuss our concerns. This meeting took place on 21 March, and after a fruitful exchange of views the Minister agreed to instruct officials to prepare a revised response. After a delay caused by the General Election, the revised response was issued in June, shortly before the report was debated in the House on 23 June.

3. The revised response (which is reprinted in the evidence below) was a marked improvement on its predecessor. While important areas of disagreement remain, it is a thoughtful and detailed explanation of the Government’s position. It is unfortunate that it took almost a year in the preparation.

4. The Government’s response to Energy Efficiency took just three months to prepare—over the new time limit of two months agreed by the Government in July, but nevertheless a welcome improvement on past performance. This response too, though long and detailed, is disappointing in quality.

5. We have received two further responses on Energy Efficiency: one from Ofgem, which echoes the Government’s arguments on energy pricing; and one from the Chairman of Committees on behalf of the House of Lords administration. These responses are also reprinted in the evidence below.

6. The refrain running through our report was that the Government needed to show stronger leadership, simplifying the delivery of policy, and giving individuals, businesses and others the means and the confidence to take responsibility for monitoring and reducing their own energy use. The Government response on this fundamental point is inadequate.

7. To take one example, we recommended that the Government consider the model of the Swedish Local Investment Programme, a simple unified programme which offered funding to local projects which support a wide range of environmental objectives. The Government’s response states:

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3 HL Deb, cols. 1787-1836.
“The UK Government funds a number of delivery programmes which deliver the same climate and energy outcomes as the Swedish model, however the key policy areas (energy efficiency, energy supply, renewable energy and transport) are delivered by different Government departments therefore responsibility for these programmes is also distributed across these departments.”

The fact that responsibility for delivering related policy areas is divided among different Government departments does not, in our view, justify the Government in resigning themselves to fragmented and confusing policy delivery.

8. However, the lack of movement demonstrated in the Government’s responses to our two reports is not particularly surprising, given the uncertainties regarding future energy policy. The latest review of the Climate Change Programme is due to report shortly. In addition, the Government have announced the terms of the latest Energy Review, which will report in Summer 2006. The Review is likely to include consideration of new nuclear build, in addition to those low-carbon strategies already in place.

9. In light of the Review we have decided to publish the Government responses without further comment. However, we propose in early 2006 to invite the Energy Minister, who is leading the Energy Review, to give evidence to the Committee. This will give us an opportunity both to review progress on renewable energy and energy efficiency, and to look in the round at the policies that will allow the United Kingdom simultaneously to reduce carbon emissions and to achieve long-term security of energy supplies.
INTRODUCTION

1. The Government welcomes this report on the practicalities of meeting the Government’s targets for renewables. It is a valuable, timely and authoritative contribution to the renewables debate. The Government has looked again at our response and, where possible, addressed the Committee’s concerns. I hope the Committee will recognise that we have listened, and that our revised response reflects a serious attempt by the Government in meeting the Committee’s concerns.

2. This response has been prepared jointly by DTI, Defra and MoD in consultation with other Government Departments. The Committee drew a number of key conclusions in its report, in addition to a significant number of recommendations. We have tried to address many of these wider conclusions in the context of our responses to individual recommendations. We have also grouped a number of the recommendations together where appropriate.

Promoting renewable energy

3. We welcome the Committee’s conclusion that the Government is right to be encouraging the development of renewable energy. Renewable energy has an important role to play in enhancing our long-term energy supplies and reducing our carbon emissions.

4. The Committee voiced its concern about the ability to achieve the 2010 target for renewables. The target is undoubtedly ambitious but we believe it is possible if key barriers are addressed. The joint DTI/Carbon Trust Renewables Innovation Review report concluded that the 2010 renewable electricity target could largely be met provided the barriers to wind’s deployment were addressed. The recent NAO report published in February 2005 concluded that “our [NAO’s] consultants, using a similar model to that underlying some of the evidence submitted by the Department to the Committee, but with updated assumptions on the potential barriers to progress, have estimated 9.9 per cent by 2010, very close to the [Government’s renewables] target”. Following the introduction of the Renewables Obligation, there has been a significant change in the number of renewables projects that have been built (for example, we estimate that more than 500MW of wind capacity will be installed in 2005, double that for 2004—its a record year). The trend is more pronounced looking at the number of projects that have been consented and are entering the formal planning process.

5. The Government agrees with the Committee that the key obstacles to achievement of our renewable targets are around investment, planning issues, grid capacity and effective public communication. However, strategies have been put in place to address these issues. The DTI has created a dedicated 2010 target team led at Director level, which is responsible for championing renewables and for ensuring that key barriers to renewable deployment are addressed. The team works closely with others in DTI, across government departments and the wider public sector as well as with external stakeholders including industry players, the Renewables Advisory Board, statutory consultees and non-governmental organisations. The 2010 target team has responsibility for delivering the 2010 target and overcoming the major barriers to reaching the target of grid; planning issues, communications, finance and investment as well as looking after business development activities. Each barrier has a project team leader and a project plan which details the barriers, and their sub-sets, and activity underway to remove the barriers. Examples of recent successes include:

Planning

— The final conclusions and recommendations of the Eskdalemuir study have been accepted by MoD in full, and Defence Estates are contacting developers to remove any associated holding objections. This should enable objections to more than 1GW of potential renewable projects to be lifted.
Communication

As part of our wider communications activities a series councillor/planner events held. The events follow a “workshop” format and work through a renewable energy planning case study. They aim to provide planners and councillors with the information they need to make an informed decision on planning applications.

Offshore wind

Meetings have been held with Round 1 and 2 developers to push forward on build schedules for Round 1, and to understand and develop a work plan to overcome obstacles to Round 2, including development of the offshore grid regulatory regime.

Finance and Investment

A 2005 Investor Attitude Survey is underway to assess progress in the last year, and to identify areas of focus and engagement with the investment community, whose involvement in the sector is vital in order to meet the 2010 target.

Should the Committee require further information on this process, the Government is happy to provide it.

6. We share the Committee’s views about the importance of R&D funding for renewables. It is of vital importance in reducing the costs of those technologies that are closest to the market, in aiding the deployment of renewables on the ground and in facilitating access to, and management of, the grid, and in bringing forward those renewable technologies which may have a significant role to play beyond 2010 in terms of reducing carbon dioxide emissions and diversifying our energy supplies (and thereby enhancing energy security).

7. In addition to the support provided by the Renewables Obligation and following the Spending Review 2004 (SR04), the DTI will spend around £500 million between 2002 and 2008 on research and development and demonstration projects for renewable and low carbon technologies. This includes £20 million per annum, which will be allocated by DTI through the Technology Strategy Programme towards research and development into sustainable energy technologies including renewables. The Research Councils also contribute additional funds—currently £12.85 million pa. The Committee will also have noted the announcement on the Marine Renewables Deployment Fund, worth up to £50 million, which will help to bridge the gap between R&D and the commercial deployment of wave and tidal electricity generation devices.

8. The Committee looked at biomass in some detail. While acknowledging the potential of biomass, the Committee raised concerns about the regulatory environment and lack of financial encouragement to biomass. We are working closely with key stakeholders on issues surrounding energy generation from biomass, including agricultural and forestry residues and energy crops. Targeted financial support has been made available for biomass developments and energy crops in addition to that available under the Renewables Obligation. But more can still be done. To help the Government and the biomass industry optimise the contribution of biomass energy to renewable energy targets and to sustainable farming and forestry and rural economy objectives, Sir Ben Gill has agreed to lead a one-year biomass study. This is due to report in the autumn.

Security of supply

9. In the context of its report on renewable energy practicalities, the Committee also took the opportunity to raise wider security of supply issues. And it is clear that this is an issue on which the Committee has strong views.

10. The Government agrees with the Committee that the maintenance of secure energy supplies should be a fundamental goal of energy policy. The Government is content to re-affirm its commitment, set out in the Energy White Paper, that all reasonable demands for electricity in both the short and long term should be satisfied. The Committee will recognise that the Secretary of State for Trade and Industry and the Office of Gas and Electricity Markets have statutory responsibility to ensure security of supply.

11. The Committee will also appreciate the role that a competitive and liberalised energy market can play in delivering the Government’s key objectives. Government has introduced specific and targeted fiscal and market based mechanisms (including the Renewables Obligation) to provide industry with the right incentives to innovate, develop and deliver the Government’s wider environmental and specific renewable targets.
Responsibility for energy policy

12. The Government also notes the Committee’s concern about the division of responsibilities between government departments. Energy policy inevitably impacts on the work of a number of departments and we have put in place reliable and effective co-ordination arrangements at Ministerial and official level. The Government hopes that the Committee will welcome the recent appointment of a Minister of State (Malcolm Wicks MP) with sole responsibility for energy issues and a particular focus on sustainability.

Key Conclusions and Recommendations on the Energy Policy Framework

13. We applaud the Government’s emphasis on the importance of the cost of renewables. However, we are concerned that no figure has been put on what will be deemed “acceptable to the consumer”, or how acceptability will be measured. (para 10.4)

14. The Renewables Obligation is the Government’s primary support mechanism for renewables. The cost of the Obligation is met by consumers. We therefore consulted carefully on cost of the Obligation, which is determined by a combination of the “buy out” price and obligation level, when firstly we created the Obligation and then subsequently extended the level of the obligation to 15.4 per cent in 2015–16. Our assessment is that each percentage of the obligation level will add approximately 0.5 per cent to consumer bills.

15. We recommend that the Government reconsider their energy policy goals, with a view to setting a “bottom line”. We believe that the fundamental goal of energy policy, as was formerly acknowledged by the Government, should be the maintenance of secure, and hence diverse, energy supplies. In achieving this goal regard must be had to the United Kingdom’s environmental commitments and to the need, in the interests of consumers, to promote competitive energy markets. We look forward to a fuller explanation of the Government’s position on these issues. (para 10.5)

16. The Government shares the Committee’s view that a fundamental goal of energy policy should be the maintenance of reliable energy supplies. The Committee will recognise that the Secretary of State, together with the Director General of Electricity Supply, has statutory responsibility under the Electricity Act 1989, to ensure that all reasonable demands for electricity are satisfied. A similar obligation applies in relation to gas supplies. These responsibilities were debated at length in both Houses during the passage of the Energy Bill last year, and were supplemented with a new duty on the Secretary of State to publish, and lay before Parliament, an annual report on the availability of electricity and gas for meeting consumer demand. In the Energy White Paper we set out the need to balance the pursuit and achievement of our four goals of policy:

— To put ourselves on a path to cut the UK’s carbon dioxide emissions by around 60 per cent 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.

17. We continue to stand by these goals. We believe that they can be achieved together through mutually reinforcing action and policy instruments—they do not represent a hierarchy.

18. In the Energy White Paper we acknowledged that from time to time there would inevitably be tensions between the objectives. This included the recognition that reliable energy supplies are fundamental to the economy and to sustainable development, but also that climate change represented an environmental limit that should not be breached. However, we do not believe that these tensions are irreconcilable. We remain committed to achieving our long-term goals and we continually review progress against them. The Climate Change Programme review is an example: a comprehensive review of policies designed to meet our Kyoto target and UK goals to reduce CO2 emissions. In making decisions, we will need, of course, to consider not only the cost effectiveness of new options, but also their implications for each of the three other goals of energy policy, including security of supply.

19. We recommend that the Government review the allocation within Government of responsibility for energy policy, with a view to providing strong and coherent leadership. At the very least there should be a Minister of State, wholly committed to clear, energy focused aims and objectives, who can bring together responsibility for all aspects of energy policy, including security of supply, along with those currently the responsibility of Defra, such as energy efficiency and conservation. (para 10.6)

20. The Government has looked again at the issue and appointed a Minister of State (Malcolm Wicks MP) with sole responsibility for energy, with particular focus on sustainability. The details were announced during the recent Government reshuffle.
21. The Committee recognised that energy policy inevitably affects the work of many departments regardless of how policy responsibilities are allocated within Government. DTI and Defra work closely together, not only on issues like CHP and energy efficiency policy, but also on other environmental aspects of energy policy. To ensure effective co-ordination, the Government has introduced the Sustainable Energy Policy Network (SEPN), which brings together government departments, the Devolved Administrations and other bodies such as Ofgem and the Carbon Trust, to make sure that energy policy is fully joined-up across government. A Ministerial committee heads the network jointly chaired by the Secretaries of State for Trade and Industry and for Environment, Food and Rural Affairs.

22. The SEPN is proving its worth. It has fostered engagement in delivering the goals and specific commitments of the White Paper in Whitehall and the regions. It provides a focus for individual projects and is now moving into a new phase of policy development, for example with the Climate Change Programme Review and the feasibility study into a Renewable Transport Fuel Obligation. In addition, there is the Chief Scientific Adviser’s High Level Energy Group, which works to improve coordination between policy officials and public sector funders of energy R&D.

Eligibility Criteria for Renewables

23. The treatment of coalmine methane is anomalous. While the exemption of coalmine methane from the Climate Change Levy is welcome, it is unlikely to stimulate the industry sufficiently. We therefore recommend that the Government review the eligibility under the Renewables Obligation of electricity generated from coalmine methane. (para 10.7)

24. The Government does not accept the Committee’s recommendation. Coal Mine Methane (CMM) is derived from fossil fuels. We therefore do not regard it as appropriate to classify CMM as a renewable energy source (nor would this be compatible with the European Renewable Energy Directive). Allowing Coal Mine Methane to qualify for the Renewables Obligation (RO) would therefore be contrary to the main objective of the RO, which is to stimulate the development of renewable technologies.

25. Nevertheless, the Government recognises the benefits of tapping CMM emissions from abandoned coalmines and putting them to good use. For this reason the Government has exempted CMM-generated electricity from the Climate Change Levy.

26. The DTI is also developing a scheme, in conjunction with the Coal Authority, to encourage the mitigation of CMM emissions from abandoned mines. The Coal Authority is currently drawing up proposals for implementation of this scheme in consultation with stakeholders and other interested parties.

27. Looking further ahead, Defra has commissioned a study to determine a baseline for methane emissions which could enable CMM to qualify for phase 2 of the EU Emissions Trading Scheme and hence for the industry to receive value for the emissions avoided through the use of CMM.

28. Separately, we note that under the Renewables Obligation Review we are looking at the case for extending eligibility to energy from waste projects (in addition to advanced conversion technologies such as anaerobic digestion and pyrolysis which are eligible) under the Renewables Obligation. This is one of the issues that we have raised through the preliminary consultation on the Renewables Obligation Review.

Technological Feasibility and Implementation: Wind

29. The Government’s projections show that the bulk of the new renewable generating capacity between now and 2010 is expected to be in the form of wind energy, both onshore and offshore. In practice there appears no alternative. The United Kingdom has a huge potential wind resource, and the technology for converting wind energy to electricity, at least onshore, is mature and reliable. (para 10.18)

30. The Committee is right to recognise that the UK has the most favourable wind profile, both on and offshore, in Western Europe. The Committee also recognises that wind energy, both offshore and onshore, currently offers the greatest scope for expansion, at least in the short term, in meeting our demanding renewables target.

31. The Government is urgently trying to address the key barriers that industry believes are hindering the deployment of wind energy. The work of the 2010 target team is therefore crucial in addressing issues like the upgrade of the transmission network.

32. A substantial expansion of both onshore and offshore wind is essential in order to achieve our targets. If we are able to address successfully the key barriers, it is clear that Round 2 of offshore wind farm programme offers the potential for a significant expansion of renewable energy. Projects like the London Array wind farm could potentially make a real, and significant, contribution to the Government’s 2010 renewables target.
33. However, it should be reiterated that the Government is keen for industry not just to focus solely on wind farms. We want to bring forward a wider range of renewable technologies in the years following 2010. But in the shorter term wind will make the major contribution to the 2010 target.

**Technological Feasibility and Practical Implementation: Biomass**

34. We note that large quantities of agricultural and forestry residues in the United Kingdom currently go to waste. Using this resource to generate electricity would have multiple benefits. We urge the Government, within their overall policy on renewables, to prioritise the exploitation of this resource. (para 10.11)

35. The Government shares the Committee’s view that agricultural and forestry residues could be a valuable resource for generating electricity, contributing both to reducing carbon emissions and sustainable farming and forestry. However, we do not agree that the use of this resource should be prioritised over other sources of biomass or other renewable technologies. This would be counter to our overarching policy on renewables and the technology neutral nature of the Renewables Obligation.

36. We note that within our current renewables policy framework, the Government already has a range of incentives to encourage the use of agricultural and forestry residues:

- Electricity generated from agricultural and forestry material, whether by combustion, pyrolysis, gasification, anaerobic digestion or co-firing with fossil fuels, is eligible for Renewable Obligation Certificates (ROCs) under the Renewables Obligation.
- Specific biomass projects using such residues are being supported by the DTI/Big Lottery Fund Bioenergy capital grants scheme.
- Defra and the Forestry Commission are also working in close collaboration to support the development of agricultural and forest residue supply chains. This extends to the development of support packages, such as the Bio-energy Infrastructure Scheme. Ongoing work by the Forestry Commission includes:
  - Estimating the quantity of harvesting residues for the current harvesting programmes and expected harvesting programmes up to 2020 and presenting the data on a Geographical Information System to facilitate planning and development of biomass projects. These assessments take account of the environmental requirements to leave residues on site.
  - The examination by Forest Research, an agency of the Forestry Commission, of small-scale systems for harvesting and extracting woodfuel that are particularly appropriate to farm woodlands.
  - Trials by Forest Research of in-forest drying of small round wood and random-length/random-diameter wood, typical of wood fuel that could be provided from conifer plantations.

37. We also await the findings of the current biomass study, which is being carried out by Sir Ben Gill, and will consider any recommendations it makes for further support in this area.

38. Energy crops have good potential as a fuel source. However, there is a limited resource (in terms of land area) in the United Kingdom, and if it is to be exploited effectively rapid progress both in plant breeding and cultivation techniques will be needed. We believe the Government’s current projections for the contribution of energy crops to our energy needs are over-optimistic, and recommend that the Government clarify the basis upon which they have been made. (para 10.12)

39. The Government agrees with the Committee’s view that energy crops have good potential as a fuel source.

40. The DTI/Carbon Trust Renewables Innovation Review is the most up to date piece of work on biomass/energy crops. The accompanying analysis included projections by E4tech on energy crops and further work done by LEK, which looked in more detail at the economics of energy crop production in the UK. The Review estimated that some 5–6 per cent of UK electricity demand in 2020 could be produced from biomass.

41. It was not envisaged that all of the 5–6 per cent would come from energy crops as we would expect contributions from other biomass sources such as straw. Energy crops are expected to provide 4.1 per cent (around 16TWh by 2020) representing a capacity of some 2GW (rather than the 2.5GW indicated in the Science and Technology Report). The 2GW equates to 175 hectares per MW, which given likely improvements in generation efficiency and yield is not, in our view, unreasonable.

42. Until this year the uptake of grant for the planting of energy crops has been low as there have been very few biomass power developments and uncertainty about the review of the Common Agriculture Policy (CAP). However, in the last few months, as potential end uses have become available, applications have increased significantly and the indications are that there is considerable interest in taking this forward to a greater extent
next year. Applications have been in respect of both dedicated biomass heat and electricity generation and for co-firing.

43. Defra Ministers have also agreed arrangements for extending funding for energy crop establishment after 2006 (when the current Energy Crops Scheme comes to an end). The recommendations of the Biomass Task Force will be taken into account when considering the options for energy crops support after 2006. Land availability is also an issue which will be considered by the Biomass Taskforce, and DTI and Defra will review the figures again with the taskforce and in the light of progress made to date and CAP reform.

44. The collapse of ARBRE suggests that attempts to develop new fuel sources at the same time as new generating technology energy may be over-ambitious. A more incremental approach to developing biomass technology is likely to yield better results, and we endorse the recommendation of the Royal Commission on Environmental Pollution, that “the focus should be on establishing the sector through the use of existing, proven technology whilst simultaneously developing new technologies and demonstration plants”. (para 10.13)

45. The Government agrees with the Committee that attempting to develop new fuel sources at the same time as new generating technology may carry additional risk. At the same time we believe it is important to foster the development of a range of biomass technologies.

46. In our response to the Royal Commission on Environmental Pollution we explained that our approach is not just focused on advanced technologies. For example, the majority of funding under the Bioenergy Capital Grants Scheme was allocated to conventional generation projects (of the 22 projects to which funding was allocated only three were using advanced conversion technologies).

47. The Government also notes the Committee’s wider conclusions in the report about the additional benefits that may arise from energy efficient biomass (CHP) projects, located close to reliable fuel sources, in terms of offering the most environmentally beneficial prospects for future development. We are currently undertaking careful analysis and consideration of the renewable heat and CHP market. This study will be published in due course. The Government will consider, based on findings relating to the amount of renewable heat that might come forward if barriers were removed, and the amount of carbon that could be saved, the various options for supporting renewable heat. This might include the option of a Renewable Heat Obligation. We will look carefully at the study to assess the various options for supporting renewable heat, including the option of a Renewable Heat Obligation. We are not currently making any assumptions that future support for (fossil-fuel derived) heat from CHP would be the same as support for renewable heat. We will also take the recommendations of the Biomass Taskforce into account when considering future support.

48. The Committee will also recognise that the Government committed itself, during the passage of the Energy Bill through Parliament in 2004, to look at the issue of how CHP is handled in the context of the Obligation. Details were published in the preliminary consultation document on the 2005–06 Review of the Renewables Obligation.

49. We recommend that the Government, in consultation with Ofgem, urgently review the regulatory framework applied to generators using waste biomass, with a view to removing or mitigating the impediments that are threatening an industry already operating at the margins of economic viability. (para 10.23)

50. The Government shares the Committee’s view that we need to consider and where possible address barriers or impediments to generation of electricity from waste biomass and accepts the recommendation. Sir Ben Gill’s study is looking at the barriers to biomass, including the regulatory barriers. Through the RO Review we are also looking at the case for extending ROC eligibility to projects using waste biomass.


52. We therefore urge the Government to introduce more specific, targeted measures to encourage energy crop development, including transitional support for farmers while crops reach maturity, and a requirement on generators to offer long-term contracts to farmers as a condition of RO eligibility. (para 10.26)

53. The Government rejects the Committee’s recommendation that generators should be required to offer long-term contracts to farmers as a condition of Renewables Obligation eligibility. The Renewables Obligation is a market-based mechanism and as such the contractual arrangements between the various parties are a matter for the companies themselves. However, we do agree on the need to ensure that development of energy crops is encouraged and enabled.

54. The Government has introduced a number of targeted measures to promote the development of energy crops. Defra’s Energy Crops Scheme offers grants to farmers to establish energy crops. The EU has also introduced a payment of €45 per hectare for crops grown for energy use on non-set-aside land. The reform of the Common Agriculture Policy has led to the introduction of a single farm payment from 1 January 2005. This has decoupled subsidies from specific crops and should encourage farmers to consider alternatives, such
as energy crops. As already mentioned, Defra Ministers have agreed arrangements for extending funding for energy crop establishment after 2006, when the current Energy Crops Scheme comes to an end.

55. The Committee also raised concerns about the deadline for co-firing. The changes to the co-firing rules relating to the inclusion of energy crops, including the extension to 2016, were introduced in April 2004 after public consultation and careful consideration of the issues. We expected that this would bring forward planting in 2005. While industry has clearly taken some time to respond, we do not accept that energy crop policy has been fatally undermined. Traditionally, Short Rotation Coppice (SRC) has been cut back in year one and harvested three years later in year four. This would indeed mean that crops would need to be planted in 2005 to be ready for 2009. However, practitioners report that where crops establish particularly well (perhaps 50 per cent of those planted) there is no need for cut back and they can be harvested after three years. We can add to these those crops which are already available and will be ready for harvest again in 2005. SRC is not the only available energy crop and miscanthus, which is harvested annually, is also being included in the co-firing portfolio. Other crops, such as cereals could also be used.

Co-firing is not the only route to stimulate energy crops. Other dedicated biomass projects, such as that launched by Sembcorp on Teeside, plan to recruit growers from 2006.

56. Transportation of biomass fuel represents a net addition to CO$_2$ emissions. We therefore believe that energy efficient (in other words, CHP) developments, located close to reliable fuel sources, offer the most environmentally beneficial prospects for future development. We recommend that the Government focus their efforts on establishing a regulatory regime that favours small-scale biomass development using locally sourced fuel. (para 10.27)

57. This is a complex issue. The DTI/Carbon Trust Renewables Innovation Review came to a similar view: that a way forward for energy from biomass may be to focus more on smaller, possibly regional, scale projects in the next few years where risks are more manageable, both for growers and plant developers, and take an incremental approach to addressing the various barriers currently facing developments in this sector. However, it did not rule out support for new, larger scale projects.

58. It is also important to strike a balance between scale and cost effectiveness. Whilst fuel transportation and storage costs may indeed be proportionately higher for large scale developments, economies of scale in building and, operation and maintenance may be lost with a small plant leading to higher costs per kWh of energy generated. The transport of fuel to a development would be a relevant consideration within a planning application and would be likely to form part of any environmental assessment.

59. Whilst the Government is working to encourage local production and development in the UK, WTO rules require us to operate fairly with regards to imports, whether those imports are from Canada or the Baltic. Perhaps the major challenge in establishing biomass projects is the building of reliable, robust and cost effective supply chains. Imported biomass may have a significant role to play in allowing initial biomass investments to be made on the basis of which local supply chains can then be developed.

**Technological Feasibility and Implementation: Solar**

60. We see little immediate prospect for commercial generation of electricity from solar energy in the UK. However, in domestic or small-scale, stand-alone applications, solar energy have the potential to make a useful contribution to overall renewable energy output. We urge the Government to explore ways to promote such uses. (para 10.28)

61. The Government accepts the Committee’s recommendation and is exploring ways to promote small-scale, stand-alone applications for solar energy.

62. The Government also agrees with the Committee that the main barriers to the uptake of photovoltaics in the UK are the high price and lack of awareness that they can be effective under UK conditions. We are seeking to tackle the former through targeted basic research, such as the two PV consortia under the Engineering and Physical Sciences Research Council’s SuperGen programme, and at a more applied level through the DTI’s Technology Support Programme with the DTI’s 40 Domestic and Large-Scale Field Trial projects and the Major PV Demonstration Programme. The UK is also a member of the International Energy Agency’s Photovoltaics Power Systems Implementing Agreement, which provides international experience on PV systems, their cost and reliability.

63. As the Committee rightly points out, in many cases small-scale, stand-alone applications are already commercially attractive, as despite the relatively high cost, they are cheaper than connecting to the electricity network. The Government is helping to publicise the benefits of PV in applications such as bus shelters, parking meters, traffic monitoring, remote telecommunications and navigational aids; applications that the Committee itself recognise offer potential. In the domestic housing area, the DTI has been supporting the
installation of off-grid PV systems since June 2003 under the Major PV Demonstration Programme. On 15 September 2004 DTI announced that schools, houses and commercial buildings would benefit from £8.5 million new funding to encourage more energy production from solar panels and small-scale renewables. This brings the total funding for solar projects under the Major PV Programme to £31 million and will enable a further three funding rounds to take place in 2005–06.

64. More recently the Government announced in May 2005 that a further 14 new solar photovoltaic energy projects across the UK would receive £1.35 million in funding. This brings the total amount awarded to medium and large-scale projects, since the Government established its scheme in 2002, to £18.8 million. These additional 14 projects bring the total number of projects that have been granted funding to 180, and on completion will generate 5815 kWp of electricity.

65. The Government is publicising the benefits of solar PV through a marketing programme run by the Energy Saving Trust. We plan to announce a new low carbon-building programme later in 2005. This would replace the existing Major PV Demonstration Programme and Clear Skies. The programme will take a more holistic approach to reducing carbon emissions, and consider both energy efficiency and renewable energy technologies. It will support the full range of renewable energy technologies including solar photovoltaics. This approach takes account of the Committee’s conclusions that it is more cost effective to devise solutions to reduce emissions on a building-by-building basis, addressing all relevant technologies under one scheme.

Technological Feasibility and Implementation: Marine

66. We are concerned that the Government appear to have dismissed large-scale tidal power. There are undoubtedly practical impediments. Construction would be expensive and time-consuming. There is therefore no prospect that the market will provide funding. On the other hand, the potential reward is huge—the large-scale production, using well-established and durable technologies, of reliable renewable electricity. We urge the Government either to publish the report they have commissioned on tidal lagoons, or a summary of that report, with a view to promoting greater public debate on the advantages and disadvantages of such schemes. (para 10.29)

67. The Government accepts the Committee’s recommendation, and undertakes to review the available information on a proposed tidal lagoon in Swansea Bay with a view to publication.

68. The Committee recognised that previous studies have revealed a number of practical barriers to large-scale tidal power schemes, notably that such schemes are very expensive and therefore could not be brought forward on a purely commercial basis in the private sector. However, contrary to the Committee’s view that we appear to have dismissed large-scale tidal power, the Energy White Paper recognised the potential of this type of scheme and the contribution it could make to emissions reduction targets in 2020 and beyond and so makes clear that we will continue to explore opportunities.

69. The assessors report referred to by the Committee was commissioned by the DTI to inform its thinking. Government seeks advice on a wide range of issues as part of its work and it is not always appropriate to disclose the advice on which a decision is made. The DTI has established protocols for technical assessments and the Committee will appreciate that such advice when sought needs to be provided in confidence and unconstrained in a way that it may not be if it were to be published in its entirety. However, we acknowledge the point made by the Committee that in this particular case there is a wider general interest.

Technological feasibility and implementation: Summary

70. While wind offers the greatest scope for development in the short term, we believe that in the medium and long term a more diverse portfolio of renewable energy sources will be needed. We therefore recommend that the DTI review the level of Government funding for energy research, and, in discussion with RCUK, push forward the establishment of the United Kingdom Energy Research Centre as a matter of urgency. It is essential that a focus be established rapidly for the United Kingdom energy research effort and that it is properly funded. (para 10.20)

71. The Government agrees with the Committee on the need to develop a diverse portfolio of renewable technologies in the medium to long-term. The Committee will also be pleased to note that the UK Energy Research Centre (UKERC) has now been established and is operational. Professor Jim Skea was appointed UKERC Research Director and John Loughead as Executive Director.

72. The UKERC research and co-ordination programme started in October 2004, with funds of £13 million over five years awarded under the cross Research Council programme “Towards a Sustainable Energy Economy”. It includes hub/headquarters at Imperial College London, the “Meeting Place” (a venue for intensive research and networking at Oxford) and involves 12 separate research institutions in the research
programme. Collaboration is expected to widen as the Centre fully develops. Further information is available at: http://www.ukerc.ac.uk.

73. UKERC was set up through an iterative process, to ensure that the UK academic community provides the best possible solution, and involved detailed assessment at various stages including international peer review. This took time but, now that it is underway, the UKERC will undertake whole systems energy research, draw together a National Energy Research Network, develop a Research Atlas and provide input into policy development.

74. The Science and Innovation Investment Framework 2004–14 was published in July 2004. This ten-year investment framework sets out the Government’s ambitions for UK science and innovation over the next decade. Sustainable energy will be an important element of this. The Office of Science & Technology will also review, on a rolling programme, the quality and effectiveness of Departmental Science and Innovation Plans and assess the extent to which these align to wider Government priorities, including those in support of sustainable energy and a sustainable environment.

**How much will it cost?**

75. *We recommend that the Government commission independent and authoritative research to provide comprehensive costs for generating technologies. It is essential that the Government’s energy policies be based on complete and accurate information, and that consumers have access to this information.* (para 10.30)

76. The Government rejects the Committee’s recommendation. The Government has looked into the cost of different generating technologies at some length, including in preparing the Energy White Paper, and concluded that there were a number of uncertainties that make it difficult to establish with any degree of certainty, notably the underlying cost of fossil fuels and how costs of new renewable technology will evolve.

77. The Government has looked, and will continue to look, at the evolving costs of different generation to inform its policies. Recent analysis includes the report by the Performance and Innovation Unit at the Cabinet Office, published in 2002, which provided analysis of costs from conventional fossil fuel technologies as well as nuclear and renewables technologies. The DTI published its own report on long-term low carbon options in 2002. The 2003 Energy White Paper used economic modelling to examine the costs of meeting a target for a 60 per cent reduction in carbon emissions by 2050. For the DTI/Carbon Trust Renewables Innovation Review, Oxford Economic Research Associates was commissioned to provide projections of generation costs for a wide range of renewables technologies for the period up to 2025. The DTI also commissions research to inform assumptions used by the DTI Energy Model to consider component costs for existing coal, new coal, CCGT, open cycle gas turbines, nuclear and thermal renewable plants. We are also looking in detail at lowest cost renewables technologies within the Renewables Obligation Review.

78. All of these analyses are published. The assumptions that underpin such studies necessarily change over time and can have a significant impact on overall generation costs, similarly with the process of technological evolution. We therefore continue to keep generation costs under review.

**Providing the Finance**

79. *The Government have announced a target of ten per cent of generation to be renewable by 2010 and have set the Renewables Obligation at 10.4 per cent in 2010–11. We find these positions inconsistent. The RO will in practice tend to act as a cap on renewable output, not a target. If the Government wish the RO to deliver its longstanding 10 per cent target for 2010, it should be set at a significantly higher level, although this would incur substantial extra costs for consumers.* (para 5.8)

80. The Committee is correct in recognising that the level of the Renewables Obligation is not the same as the Government’s target. The level of the Obligation is set at 10.4 per cent in 2010–11 and the Government’s target is 10 per cent in 2010.

81. However, we do not accept the Committee’s recommendation that an increase in the level of the Renewables Obligation for 2010–11 is necessary, or desirable, in order to enhance prospects for reaching the 10 per cent target. We consider that progress on barriers to the development of renewable energy, such as planning, the grid, and radar issues, will be more significant in relation to our ultimate performance. We consider that the recent NAO report, which suggests that if progress in these areas is made we can (as good as) hit the 10 per cent target, supports this position.

82. Moreover, decisions on investment in new renewables generating capacity will be affected by a range of factors including the cost of renewable technologies, the underlying price of electricity and, as the Committee has pointed out, the relationship between Obligation levels and levels of ROC eligible renewables generation.
In the case of the latter, the future profile of Obligation levels is likely to be at least as important to investment decisions as the relationship between actual generation and the Obligation level in any given year. The Government therefore believes that the decision to extend the profile of the Obligation to 15.4 per cent by 2015–16 has increased the prospects of meeting the 10 per cent target for renewables generation in 2010. We are considering further the relationship between Obligation levels and renewables targets within the Review of the Renewables Obligation.

83. We believe that the investment community’s perception of the risk inherent in renewables would be significantly eased if comparable cross-party consensus could be achieved at national level. (para 5.12) [Note: “comparable” refers to that achieved by Woking Borough Council]

84. The Government agrees with the Committee that consistent national policies are essential to gaining and retaining investor confidence. We are committed to the Renewables Obligation as a long-term mechanism to address a long-term issue, that of increasing the contribution of renewables to meet our energy policy goals. We cannot speak for other parties, but it is fair to say that there has been broad cross Party support for the Obligation from the outset.

85. Having gained three years of experience, the Renewables Obligation is proving popular with both the financial and developer sectors. A number of key players in the energy market have shown their confidence through their plans to invest in renewables (for example, Centrica’s plan to invest £750 million in renewables and RWE Innogy ION in attracting £400 million of City investment).

86. The Government published a preliminary consultation document on the Review of the Renewables Obligation on 21 March 2005. The preliminary consultation document made clear that any proposed changes would be assessed against a number of key criteria, including the impact on investor confidence. It also repeated the Government’s commitment that the 25-year life of the Obligation will not be reduced by this review.

87. If the Government are to stimulate investment in renewables, they need to take steps to produce greater long-term predictability in renewable electricity prices. We therefore recommend that the Government consider ways to supplement the existing RO, such as undertaking to set rolling targets, 10 years ahead, or the guarantee of a minimum price (below the level of the buy-out price) for the duration of the Obligation, in order to facilitate the release of capital to developers. (para 10.34)

and

88. The Renewables Obligation is unlikely to encourage the development of any project that cannot, for whatever reason, be rapidly implemented within the next year or so—the ROC guarantee does not extend far enough to make it a commercial proposition for longer term projects. We therefore recommend that the Government build into the RO transparent, targeted measures to encourage the development of transitional technologies such as offshore wind and biomass. Such support should be time-limited and on a decreasing scale, so avoiding the potential “cliff-edge” in ROC prices, while providing an incentive for these technologies to establish themselves on a commercial footing within a realistic time-scale. (para 10.35)

89. We note the Committee’s observations about the perceived risks of the RO reducing the level of benefit that goes to those generating renewable electricity and the impact this could have on investment decisions. Where appropriate we have taken action (and will continue to do so) to address these perceived risks and to communicate Government’s long-term commitment to the renewables obligation and its renewables target. For example, following the shortfall in the RO buy-out fund as a result of the failure of a number of suppliers, the Government took powers in the Energy Act to bring forward measures to secure the buy-out fund. A number of these measures are included in the Renewables Obligation Order 2005, which came into force on 1 April 2005. These measures are aimed at mitigating the impact of future shortfalls by restoring confidence in the working of the Obligation.

90. We also note the Committee’s recommendations about the need to supplement the RO, possibly through setting rolling targets ten years ahead, or the guarantee of a minimum price (below the level of the buy-out price) for the duration of the Obligation.

91. From 1 April 2005 the level of the Obligation was extended from 10.4 per cent in 2010 to 15.4 per cent by 2015–16. This change underlines Government’s commitment to the long-term development of renewables and provides additional long-term certainty for renewable project developers. The current RO Review will also consider whether it is necessary or desirable to take any further decisions regarding the Obligation level post 2015–16 and how this might be done in practice. A number of options were set out in the RO Review preliminary consultation document. However, given the steps that have already been taken to establish long-term and increasing future obligation levels we do not see the need to set a guaranteed minimum price for renewable electricity.
92. We recognise that some renewable technologies will not progress with the support of the RO alone. However, we do not accept the recommendation that additional measures should be included within the RO to give such technologies and projects additional support. We would not like to add additional complexity to the RO. We also believe that the approach suggested by the Committee could undermine long-term confidence in the RO by increasing perceptions of regulatory risk.

93. Our approach has instead been to provide additional support for emerging renewable technologies over and above the RO. For those renewable energy technologies which are currently further from the market the Government has provided or announced additional support of more than £500 million for the period 2002–08 in the form of capital grants and funds for research and development and demonstration projects.

94. We recommend that there should be a co-ordinated programme of capital grants to encourage the establishment of pre-commercial wave and tidal power demonstration projects. This should be supplemented by targeted, time-limited measures within the RO, to enhance the income streams and commercial viability of emerging technologies. (para 10.36)

95. The Government partially accepts the Committee’s recommendation. The Government agrees with the Committee that there should be a programme of grants to encourage the establishment of pre-commercial wave and tidal power demonstration projects. The Government announced on 2 August 2004 a new £50 million Marine Renewables Deployment Fund. The fund will support the continued development of the marine renewables sector in the UK and help realise the potential for marine renewables recognised by the Renewables Innovation Review. At the core of the proposals is a £42 million “Wave and Tidal Stream Energy Demonstration Scheme” which will support a number of pre-commercial demonstrations. The new scheme will work alongside the Renewables Obligation.

96. Whilst we accept the case for support for the wave and tidal stream sector, the Government’s position (as set out in the preliminary consultation document on the Review of the Renewables Obligation) remains that the Obligation is not the appropriate mechanism for providing additional financial support for longer-term technologies.

97. We note that the RO will not encourage the development of community-based, small-scale projects, and we believe that this is a serious gap in the Government’s policy framework in support of renewables. (para 10.37)

98. The Government shares the Committee’s desire to ensure that community-based and smaller scale projects are supported.

99. The Government is currently developing a microgeneration strategy. As part of this process, and as part of the RO Review, we are looking at what more can be done under the RO to support small-scale projects by facilitating their access to ROCs.

100. We are also keen to explore opportunities for communities to benefit from renewable projects, for example through community ownership. The Renewables Advisory Board (RAB) has recently completed a report into community benefit and renewables and we are currently considering its conclusions. The report will be published shortly.

**Transmission and Distribution Networks**

101. We believe that the Distributed Generation Co-ordinating Group is working effectively on removing the technical barriers to distributed generation. However, the lack of incentives to Distributed Network Operators to connect renewable and other embedded generators remains a concern. We recommend that the next Distribution Price Control Review should prioritise the provision of such incentives. (para 10.39)

102. The Government agrees with the Committee’s recommendation. The Committee will recognise that the price control arrangements introduced by Ofgem on 1 April 2005 provide new incentives for Distribution Network Operators (DNOs) to connect generation to their networks. In addition, the shallower connection charging methodology, which was introduced at the same time, will reduce the financial barriers to connection and provide DNOs with an ongoing income stream from connections. These incentives and revised charging arrangements will be monitored closely to ensure their effectiveness.

103. We agree with the Commons’ Environmental Audit Committee that NETA fundamentally remains “a system for very big players”. The changes introduced by Ofgem may ease the burden on distributed generators, but fall far short of effecting any fundamental reorientation of a regulatory framework that penalises distributed generation. If the Government wish to encourage distributed renewable generation, they must therefore fundamentally review their strategy. (para 10.40)

104. The Government rejects the Committee’s recommendation for a fundamental review of our strategy on distributed generation.
105. The Committee will recognise that distributed generation covers a wide range of generation schemes from 50 MW stations, connected at 33 kV or higher voltages, to domestic scale schemes capable only of minimal export. The Government understand that the great majority of existing distributed generators encounter no significant difficulty in trading through NETA. Most distributed generators are not Balancing and Settlement Code (BSC) Parties because they are under 100 MW and so are not exposed to NETA’s Balancing Mechanism. The imbalance settlement arrangements apply consistently to all BSC parties and so do not allow for different treatment of different Parties or different types of Party. The prices at which imbalance volumes are settled are calculated on a cost-reflective basis on the basis of the costs incurred by NGC as the System Operator in taking electricity balancing actions in response to imbalances between market participants’ contractual and metered positions.

106. The impact of imbalance settlement on parties depends upon the extent to which their contractual and physical positions differ. Therefore, if parties match their physical and contractual positions effectively, then their imbalance exposure can be managed accordingly. In this respect distributed generators are in the same position as transmission connected generators and all other BSC parties and so are not being unduly penalised as suggested. The imbalance settlement arrangements incentivise reliability and accuracy from market participants in order to reduce the overall costs of system operation, which are ultimately borne by consumers.

107. The imbalance settlement arrangements ensure that any electricity not covered by contracts is paid for, or charged at, an appropriate price. Indeed, the distributed generators may have some advantages (so called “embedded benefits”) that arise primarily because the output of the embedded generator is treated as negative demand and netted off the demand allocated to supplier(s) so that for charging purposes their demand is reduced. We are aware that operators of some of the smaller distributed generation schemes may be unfamiliar with the inevitable complexities of electricity trading arrangements. Ofgem is in regular contact with generators, and representatives of generation interests, and values the opportunity to discuss perceived problems.

108. Whilst the Government considers electricity trading arrangements to be working effectively to meet current needs, it is acknowledged that developing technology is likely to affect both the mix and the requirements of generation over time. Both the Government and Ofgem are committed to monitoring the operation of the electricity market to ensure that it continues fully to meet the needs of the electricity industry and its customers.

109. The introduction of BETTA (the British Electricity Trading and Transmission Arrangements) on 1 April 2005, which created a single wholesale electricity market in Great Britain, is expected to benefit smaller generators in a number of ways.

— It gives them access to a larger market in which to sell their output, and access to the transmission system in Scotland is now provided by a party (the GB System Operator) that is independent from generation and supply interests.

— There is now a single set of GB codes and documents, reducing complexity for parties wishing to access the GB market.

110. Ofgem is also specifically considering the issue of generation connected to the distribution system. In particular, they are reviewing the structure of distribution charges to ensure that the expected increase in generation connections to the distribution system is reflected in the charging structure, in order to ensure that charges are being made in a transparent manner that encourages economically efficient investment in the system, and that costs are charged to those parties that cause the cost. The 2005–10 distribution price control also introduced monetary incentives on Distribution Network Operators to connect distributed generation.

111. We recommend that the Government, as a necessary step towards encouraging the development of distributed, embedded generation, provide an alternative form of support for small-scale embedded generators to the RO. The most obvious, market-based solution would be to allow small generators to sell directly to local consumers. (para 10.41)

112. We also urge the Government to relax the limits on the sale of electricity to domestic consumers, via Private Wire Networks or the distribution network. We see no reason for limiting sales to 1.0 MW or 2.5 MW respectively, or why it is in the interests of competition and the consumers to restrict such sales at all, providing that any support such networks require from the grid or from distribution networks is realistically priced. (para 10.42)

113. The Government acknowledges that microgeneration has the potential to play a part in meeting Energy White Paper targets. That is why, as required by the Energy Act 2004, the Government is drawing up a strategy to promote microgeneration that will be published by April 2006. This strategy will consider a wide range of options for promoting microgeneration and will be the subject of a formal public consultation as well as significant informal consultation with key stakeholders.
114. In respect of sales by generators, Schedule 4, Class A of the Class Exemptions Order already permits generators to supply to consumers electricity that they have generated themselves, subject to the limits set out in the schedule.

115. There is no restriction on the provision of electricity to domestic customers via private networks or the distribution network, provided that those networks are licensed. It is open to networks to be licensed in their own right, and to discuss with Ofgem the scope for non-application of aspects of standard licence conditions.

116. The presumption under the Electricity Act 1989 is that electricity generation, distribution and supply should be licensed. The Act permits exemption from the licensing requirements where licensing would be unnecessarily onerous. In making such exemptions, the Government is concerned that both the safety and security of the total electricity system and the rights of customers, especially domestic customers, should be protected. Such protection is the primary purpose of the Act, and, therefore, the primary duty of the Secretary of State.

117. At present, the maximum number of customers on any one or any group of related networks without this full range of protection is around 3,500. If the Committee’s recommendation were implemented, there would potentially be tens of thousands of domestic customers on unlicensed distribution networks without regulatory protection and without access to the competitive market. We do not consider such lack of protection to be de minimis or appropriate, given the Secretary of State’s principal statutory objective in the Electricity Act 1989. The Government does not, therefore, believe that the limits set by the Electricity (Class Exemptions from the Requirement for a Licence) Order 2001 should be relaxed.

**Intermittency and Security of Supply**

118. There is no technical limitation within the foreseeable future on the amount of wind power that can be introduced onto the system. However, the “capacity credit” of wind power becomes proportionately smaller as more wind power is installed. Thus while the electricity network can support renewable penetration of up to ten per cent without difficulty, penetration much beyond ten per cent will become progressively more costly. We recommend that the Government sponsor research into other technologies or strategies that could mitigate these costs. (para 10.43)

119. The Government agrees with the Committee that there is a need to improve our understanding of the technical implications of high levels of wind generation connected to the electricity networks. We have established the joint Government/Industry Electricity System Issues Steering Group to oversee work by NGC and others on the dynamic performance of the system and issues of capacity and intermittency. The Group will submit an initial report to Ministers on its conclusions in the next few months.

120. Beyond 2010, analysis conducted jointly by NGT, ILEX and BWEA estimates that in the extreme scenario of 20 per cent of renewable generation coming from wind alone, the costs associated with intermittency would increase by approximately of 0.3p on every kWh sold equating to 1.6p/kWh on each unit of wind produced.

121. We accept that these costs need to be managed and new ways found to minimise them. The Government is already funding research into this through the DTI’s NRE programme and the EPSRC SuperGen programmes. As part of our capital grants programme an additional £4 million was allocated in 2002 to facilitate the demonstration of new control, storage and metering technologies.

122. With the introduction of increasing quantities of intermittent renewable power the provision of an adequate level of capacity margin will become increasingly critical to the reliability of power supplies. Indeed the level will have to rise to reflect the intermittency of wind and other renewable energy sources. Without anyone managing security of supply, and with a Regulator committed to market incentives alone, increasing volatility appears likely, with the possibility of shortages and resulting price shocks. (para 10.44)

123. The Government notes the Committee’s view. The Committee will recognise that no system can perfectly guarantee that supply levels will always to be ahead of any demand levels, whatever the circumstances. It is therefore impossible entirely to avoid the supply-demand balance becoming tight sometimes.

124. The Government believes that market participants are best placed to assess the probability of market tightness and therefore the resource-effectiveness of providing spare capacity to deal with it. However, if this mechanism is to work, then price signals must be allowed accurately to reflect the supply-demand situation, including temporary rises to reflect temporary supply-demand constraints, so as to ensure the appropriate response: demand-side restraint in the short term and additional supply in the medium to long term. Price spikes are therefore a necessary feature of a properly functioning market.
125. Economic analysis suggests that the average price to consumers over time will be less under a competitive system (likely to be characterised by pricing close to short-run marginal cost punctuated by price spikes), than under a managed system (likely to deliver pricing at or above long-run marginal costs).

126. However, the Committee will recognise that price spikes do not, as a rule, feed through to consumers. Domestic consumers are largely insulated from price spikes and larger consumers have options available to mitigate their impact, for example by buying ahead at fixed prices or by temporarily curtailing demand, thereby avoiding high prices and perhaps even taking the opportunity to sell already-bought energy back into the market. The Government is holding discussions with energy intensive users to develop ideas for adapting their gas purchasing practices to the changing nature of the gas market, and plans to hold a seminar in the summer.

127. We believe that the Regulator’s interpretation of its primary duty to protect the interests of customers is too limited and short-termist. We recommend that the Government ensure that Ofgem’s guidance underlines the importance of long-term planning for the provision of secure electricity supplies. (para 10.45)

128. The Government believes that the present arrangements, under which National Grid Transco is responsible for real-time energy balancing in electricity and both Ofgem and the Secretary of State for Trade and Industry have responsibilities for long-term security of supply, are appropriate and that they are working. We acknowledge that this is not necessarily what the Committee means by management—for example, the comment in the Report (although this was not specifically put forward as a recommendation) that the Government should specify a level for a capacity margin, or that there should be an obligation to supply placed on electricity generators. We do not believe that these would be appropriate:

Capacity margin

129. Capacity margin is overly simplistic and unsuitable for use as a tool for managing security of supply. Because the “right” level would depend in part on the type of plant (higher for wind, lower for modern CCGT), specification of a particular margin would also have to specify the generation mix and possibly also the location of plant.

130. Even if this could be got right, we need also to accept that no level of capacity provision can ever offer a perfect guarantee that there will never be interruptions in supply; and that optimal level for security is not the same thing as the maximum, given that additional security is not cost free.

131. An ideal level of security of supply would therefore balance costs of paying for additional security (eg investment in additional capacity) and benefits (reduced risk, quantified according to the value of avoiding interruption multiplied by the probability of its occurrence). However, such a calculation is impossible to perform accurately; for example, the costs and the impacts of interruption vary depending on which customer groups are impacted, when the interruption takes place, how much advance notice there is, and how frequent interruptions are in general. Many academic studies in the past have tried to overcome these limitations, but with widely differing and rarely compelling results.

132. In general, therefore, the Government believes that this balance of costs and benefits is best achieved through a market mechanism in which consumers (at least those in the wholesale market) can signal their willingness to pay for avoiding interruptions, and suppliers can signal their willingness to provide additional security, through the price mechanism. Users who place a greater value on security are often willing to install back-up equipment, which in turn improves security of supply for other customers.

133. It is also difficult to see how a specified capacity margin could be enforced in practice. Generators cannot be obliged to invest in capacity over and above what they consider necessary to meet demand. Government-funded provision would run a very high risk of displacing private investment at best and reducing investor confidence in the regulatory environment, and hence overall investment in capacity, at worst.

134. The alternative methods suggested in the report—greater electrical interconnection with the European mainland, and greater use of interruptible supply contracts—are of course available to market participants and will undoubtedly be used if the market thinks that they will provide cost-efficient ways of meeting demand. Again, however, Government provision would be likely to displace and discourage private sector investment.

Duty to supply on energy companies

135. We do not believe this is necessary; a commercial incentive to supply is at least as effective and more efficient than a duty to supply. It also creates far less administrative and enforcement cost for Government and regulator.
136. The effectiveness of the Government’s approach is already apparent in the form of market-led proposals to invest in major new electricity generating capacity and gas import infrastructure. We believe that this shows that the market is capable of looking ahead, anticipating future needs and providing to meet them.

**Ofgem’s view of its duties—capacity instruments**

137. The Government’s position on capacity instruments is set out in the White Paper:

6.42 A number of electricity markets elsewhere employ a form of capacity margin instrument (CMI) to seek to secure a fixed level of capacity margin, often to counteract the effect of price caps imposed elsewhere in their electricity markets. We have reviewed the case for such a measure here (ref: NERA studies “Security in Gas and Electricity Markets”, October 2002, and “Electricity Markets and Capacity Obligations”, December 2002).

6.43 We have concluded that the case has not been made for such an instrument in the UK market. The UK market already provides strong financial incentives for suppliers to contract for sufficient power. We also note that experience with CMIs in other countries has been mixed. Some have been subject to material alterations within short time periods, the very sort of regulatory risks that the instrument is supposed to offset. NERA also estimated that a CMI could increase costs to consumers by some £150 million per year.

**Holding Ofgem to account**

138. Ofgem is a Non-Ministerial Government Department that exercises its functions on behalf of the Crown. As an independent Regulator, it answers to Parliament, not the Government. Parliament can hold Ofgem to account and Ofgem senior officials regularly appear before select committees. Parliament granted Ofgem its powers in the Utilities Act 2000 and any revision of these duties would have to be made by Parliament.

139. Electricity and Gas licencees clearly have an interest in how Ofgem operates as they pay their costs. There is also the statutory consumer body, energywatch, who keep a close eye on how Ofgem exercises its duties. In addition to the existing judicial review procedures, the Energy Act 2004 introduced a new appeals procedure, which will give licencees a fast track route to challenge Ofgem code modification decisions.

140. Ofgem’s statutory principal objective is to protect the interests of consumers. In energy legislation, “consumers” means future as well as existing consumers. The interests of consumers are defined as quality of service and supply as well as price. Ofgem also has a duty to carry out its functions in a manner, which it considers is best calculated to secure a viable long-term energy supply. Ofgem also has to ensure that licence holders are able to finance their activities and this includes investment. The amount invested in the UK’s electricity system since privatisation demonstrates the commitment by industry and Ofgem to a resilient infrastructure.

141. Energy legislation allows the Secretary of State to issue guidance to Ofgem on social and environmental matters. The most recent advice was issued in early 2004 and seeks to support the implementation of the longer-term energy strategies set out in the Energy White Paper. The Government therefore expects Ofgem to take account of this Guidance in its corporate planning process.

142. The Energy Act 2004 inserted a new provision into section 3A of the Electricity Act 1989 requiring Ofgem to carry out the functions under Part 1 of the Electricity Act 1989 in the manner best calculated to contribute to the achievement of sustainable development. The Government is committed to a sustainable energy policy and we believe that Ofgem is well placed to deliver its responsibilities within this context, without compromising the principle of arm’s length regulation.

143. In principle, electricity storage has the potential to mitigate many of the effects of intermittency. It is regrettable that the United Kingdom has such limited storage capacity, and it is still more disappointing that there is so little research into new storage technologies. We urge the Government to promote research and provide incentives to encourage the commercialisation of promising technologies. (para 10.46)

144. The Government agrees with the Committee that electricity storage might have the potential to mitigate many of the effects of intermittency.

145. The DTI has therefore commissioned work on the role of storage in the mitigation of intermittency costs and recently held a workshop to discuss both need and the availability of technical options. Based of the outcome of these initiatives, the DTI will develop a strategy for storage in the UK.

146. As part of our capital grants programme an additional £4 million was allocated in 2002 to facilitate the demonstration of new control, storage and metering technologies.
147. EPSCR is also currently assessing a research programme to establish a consortium under the SuperGen proposal initiative, covering “Energy Storage”. An announcement of an award is expected in the summer.

148. **We therefore recommend that the Government commission a comprehensive study of the likely outputs of renewable and other efficient electricity generators, factoring in such issues as technological maturity, life-cycle emissions and cost, with a view to establishing the optimum distribution of such technologies, in order to enhance reliability and security of supply. The results should inform the developing energy policy, including such matters as the setting of regional targets for renewable generation. The distribution of renewables should not be left to chance.** (para 10.48)

149. The Government partially accepts the Committee’s recommendation. The Committee will recognise that the joint DTI/Carbon Trust Renewables Innovation Review, published at the end of 2003, provided a comprehensive assessment of the potential of renewable technologies in the medium and longer term. It looked at when particular renewables technologies might become viable and their potential capacity, as well as estimates of the cost of generation using a particular technology. It considered actual and potential support mechanisms for the technologies. The RO Review will also seek views on whether it is sensible to distinguish between different technologies in terms of levels of support under the RO (For example reducing support for lower cost technologies). We have commissioned Oxera and Enviros to analyse the economics of the lower cost technologies. The report can be found on the DTI website.

150. The publication of Planning Policy Statement 22 (PPS22) is a significant and positive step towards generating increased development of renewable energy resources. Regional targets for renewable electricity generation were agreed with the individual regions as part of a research project funded by DTI. The PPS states that these targets should be included within regional planning guidance (now RSS or regional spatial strategies), monitored by regional planning bodies and reviewed on a regular basis. It also suggests that, where appropriate, the regional targets may be disaggregated further into sub-regional targets. These measures, taken as a whole, will help to more clearly identify levels of development within a region and strengthen the relationship between national targets and planning applications received by a local planning authority.

151. The Committee was also of the view that “the distribution of renewables should not be left to chance”. This has potential implications for technological and geographic diversity.

152. **We share the Committee’s view that it is important to encourage a range of low carbon technologies, not just because of the carbon emission savings they will bring, but because of the wider security of supply benefits from diverse supplies.**

153. **This is why the Government is supporting technologies, in addition to the RO, with a package of support worth £500 million. This package of financial assistance for capital grants and R&D and demonstration projects aims to support new renewable technologies achieve commercial viability over the long-term. Funding that has already been allocated includes: £117 million in capital grants for round 1 offshore wind farms; approximately £66 million for biomass capital grants; £31 million for Solar; £12.5 million for the Clear Skies Programme; £50 million for the Marine Renewables Deployment Fund (£42 million of which is available under the Wave and Tidal Stream Energy Demonstration Scheme); around £19 million a year for industry-led R&D; about £23 million for research under the SuperGen programme.**

154. The Committee will also be aware that following the allocation of the Science Budget, announced in March 2005, Research Council expenditure on energy R&D is expected to rise from £40 million pa currently to £70 million pa by 2007–08. This will support research and skills across the broad range of energy technologies—helping to develop new renewable energy sources and energy efficiency, improve conventional generation and keeping the nuclear option open—as well as supporting development of distribution technologies and addressing non-technological drivers (regulatory, socio-economic, environmental).

155. **However, we do not believe that we should adopt a centralised and planned approach to deciding either the location of projects or the commercial “take up” of different renewable technologies. These are decisions that we believe can be most efficiently and effectively made by the market. It would not make sense to encourage the development of wind projects in areas with low and unreliable wind profiles simply to achieve geographical diversity. Rather we would expect that the market would respond to any increase in costs associated with managing high-levels of intermittent renewables by bringing forward non-intermittent projects.**

156. **However, as mentioned previously in this report, we have established a joint Government/Industry Electricity System Issues Steering Group to oversee work by NGC and others on the dynamic performance of the system and issues of capacity and intermittency at high levels of renewable penetration. However, we would stress that existing work by NGC suggests that the UK could readily cope with 10 per cent wind penetration with little or no need for additional stand-by generation.**
**Planning and Local Communities**

157. *We are not aware of any reliable evidence to suggest that low frequency or other noise from wind turbines has affected human health.* Nevertheless, in light of the obvious concern that may arise over this issue, we recommend that the Government commission independent research to examine the issue, with a view to providing full and authoritative information. (para 10.49)

158. The Government agrees with the Committee about the importance of providing authoritative information to the public, particularly where a number of “myths” have been created. We have therefore commissioned some further work to measure low frequency noise (LFN) in specific locations where complaints have been raised.

159. The study will compare the measured levels with existing guidance concerning LFN noise emissions and review the accepted scientific position that low frequency noise from wind farms is below the threshold of an individual’s detection and far below the threshold of impact to their health and safety. The findings of the study will be published and if further research is considered necessary then this can be commissioned.

160. *We do not believe that urging developers to engage in “active consultation and discussion” will in itself secure public support for renewables.* It is essential that local communities derive real benefits from the renewable generators on their doorstep. We recommend that the Government explore changes to the regulatory framework that would give local communities a direct stake in such developments. (para 10.52)

161. The Government agrees with the Committee on the importance of securing public support for renewables and that local communities derive real benefits from the renewable generators on their doorstep.

162. The DTI funded £10 million Clear Skies (www.clear-skies.org) initiative enables not for profit community organisations, including housing corporations, local authorities and schools to receive up to £100,000 for grants towards installing renewable technologies. Such projects give local communities a direct stake in renewables and can help secure public support. An extension of this initiative for a further year, and an additional £2.5 million, was announced last September. Nearly 5,000 projects have been offered grant support to date. This extra funding will help many more projects get off the drawing board and become a reality.

163. We recently announced that we would be supporting the Community Renewable Initiative for a further year, along with the Countryside Agency. This scheme has provided direct help to communities wishing to include renewable energy technologies in community projects. This includes a strong focus on engagement with the community.

164. The Planning Policy Statement 22 (PPS22) urges developers to engage in active consultation and discussion with local communities at an early stage in the planning process, and before any planning application is formally submitted. The companion guide to PPS22, published at the end of last year, provides evidence of good practice of developers and local communities working together on planning applications to ensure a positive outcome for all stakeholders. The planning system has to balance speed in decision making with propriety and fairness, and planning conditions and obligations (section 106 agreements) are part of that system. In recognition of some of the delays and difficulties experienced with the current system of planning obligations, the Government is working on a package of reforms aimed at increasing the speed, certainty, transparency and accountability of the system. A draft revised circular setting out some proposals for reform will be published later this year for consultation.

165. As mentioned earlier in this response, we also note that the Renewables Advisory Board has commissioned from the Centre for Sustainable Energy a report on the actual and potential impact of community benefits schemes on the deployment of renewables, especially wind, comparing practices here with those in Europe to identify what, if any, lessons can be learnt. This report is currently being discussed with RAB, DTI and ODPM and will be published in due course.

166. *We further recommend that the Government themselves initiate and promote full and public dialogue at both national and local levels on the advantages and problems of renewable energy.* (para 10.53)

167. The Government agrees with the Committee on the need to raise the profile and public understanding of renewable energy. The DTI has set up a team to concentrate on communicating the message about renewables and the “It’s Only Natural” communications campaign has been launched, which is aimed at raising awareness of renewable energy amongst planners and councillors, investors and wider public audiences. Further details are available from our website http://www.dti.gov.uk/renewables.

168. It is essential that Government should urgently take such steps as are necessary to resolve disagreements between Departments over the suitability of sites for wind farm development, and we so recommend. (para 10.54)
169. The Government agrees with the Committee that any issues of concern between Departments should be resolved as quickly as possible. The DTI’s newly created 2010 barriers team is taking work forward in this area and much has been achieved already working with Ministry of Defence over wind turbines and radar issues.

170. The pre-planning consultation process agreed by MoD with BWEA and DTI was put in place specifically to enable developers to consult MoD (free of charge) and CAA/NATS at the earliest opportunity—ie as soon as a potential development site is identified and before considerable expense is incurred on environmental impact assessments, grid connection studies, and planning reports.

171. MoD is ready and willing to work with developers and most certainly does not knowingly allow developers to commit nugatory expenditure. Quarterly wind energy seminars have been introduced: open to all landowners, wind farm developers etc. these provide an opportunity to learn about MoD concerns (radar, low flying etc) and ask any questions well before they submit a pre-planning consultation notice.

172. The MoD is acutely aware of the need to be as open as possible in addressing the concerns of developers and other stakeholders. To that end we are actively considering ways in which mapping, and other technology, can be used to provide information which will allow developers to take account of MoD interests and potential issues at as early a stage as possible.

173. It is widely known and accepted that wind turbines cause a number of problems for radar systems, which include the generation of “clutter”, the creation of false radar returns, the masking of genuine returns, and the formation of an area of radar “shadow” beyond the turbine. The MoD is happy to provide additional information if required.

174. MoD remains in close contact with DTI, BWEA, and a range of other stakeholders about offshore wind Rounds 1 and 2 (and wind energy issues in general). There is only one Round 1 site where MoD issues remain unresolved. Negotiations have been temporarily suspended at the developer’s request while issues have been discussed with another key stakeholder. We are, however, ready to resume discussions as and when the developer is ready to do so.

175. As regards Round 2 offshore wind projects we are actively addressing a small number of non-radar concerns with one site in each of the Greater Wash, Liverpool Bay, and the Thames Estuary. It is hoped that these will be resolved in the very near future. MoD, together with DTI, is also commissioning a feasibility study to try and identify the most efficient and cost-effective option for removing MoD’s current air defence radar concerns with six sites in the Greater Wash. We hope to report the findings of that study shortly.

176. The MoD is fully committed to working with all stakeholders, both within and outside Government, to achieve the Government’s renewable energy targets. We are in close contact with the MoD and have recently held meetings with the Cabinet Office and National Audit Office. We are also taking steps to improve contact with other Government departments including Defra and DfT.

177. The MoD will play a full and proactive part in work currently underway between the Cabinet Office, DTI, Defra, DfT and other stakeholders to take forward joint working on wind farm issues.

178. As mentioned earlier in the response, the DTI established a 2010 barriers team in July 2004. It is led at Director level and is responsible for successfully delivering the Government’s target of 10 per cent of UK electricity from renewable energy sources by 2010 through co-ordination, influencing and driving of activity to overcome the major barriers to reaching the target of grid; planning (including aviation); communications (with stakeholders including planners and councilors, the investment community and the general public). The team also has responsibility for renewables business development, to ensure that the UK benefits economically from the introduction of the RO, and the work of the Renewables Advisory Board.

Government Response to the House of Lords Science and Technology Committee Report Energy Efficiency Definitions and Measures

1. Energy efficiency has been drafted into the service of a wide range of policy objectives since the 1970s, but the way it has been understood and measured has been elusive and variable. We have been dismayed in the course of our inquiry by the inconsistency and muddle of much current thinking about energy efficiency. (Paragraph 2.7)

2. This muddle is not the sole responsibility of Government, but only Government can resolve it. However, the current attempt to present energy efficiency as “the most cost-effective way to meet all [four] energy policy goals” only adds to the confusion. At the very least, careful oversight will be needed to ensure that the targets set for energy efficiency are defined, that conflict between them is avoided, and that progress is measured. We urge the Government to bring greater clarity and intellectual rigour to its presentation of energy efficiency. (Paragraph 2.8)
This Government aims to secure progress against all four energy policy goals:

— To put ourselves on a path to cut the UK’s carbon dioxide emissions by some 60 per cent by about 2050, with real progress by 2020;
— To maintain the reliability of energy supplies;
— To promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve our productivity; and
— To ensure that every home is adequately and affordably heated.

For the last few years, in all the Government’s policy documents and statements, from the 2003 Energy White Paper, through last year’s Energy Efficiency Action Plan (Action Plan), Defra’s Five-Year Strategy and the UK Sustainable Development Strategy the Government has consistently and clearly stressed the importance of energy efficiency as a means of tackling carbon emissions as well as addressing fuel poverty, energy security and competitiveness. This Government agrees that interaction between these goals can be complex to describe, but ultimately the key objective is to deliver progress towards a sustainable low carbon economy.

The Energy White Paper and then the Action Plan made clear that improvements in energy efficiency can lead to improved security of supply, environmental benefits, social benefits and improved competitiveness. And it is this definition, rather than “energy efficiency” by itself, which should help remove some of the confusion as to how energy efficiency is indeed a means to achieving all four energy policy objectives.

The Committee are right to state that over the last 30 years the Government has tried to raise the level of energy efficiency for a number of motivating reasons—a desire to improve security of supply, improve health and comfort and to save money. It is also true that only comparatively recently, under the UN Climate Change Convention and the Kyoto Protocol, that countries—including the UK—have systematically tried to raise the level of energy efficiency activity as a means of reducing carbon emissions. The Government proposes that it is quite proper and normal that the underlying drivers for improving energy efficiency, on the back of emerging research and evidence about the reality of climate change, should change. Equally, the associated carbon benefits of an energy efficiency policy mechanism can be a secondary rather than a primary driver. Nonetheless these benefits remain important to the delivery of a sustainable low carbon economy and need to be recognised within the policy outputs.

The principle though is the same—to promote improvements in energy efficiency. But that is not to say that promoting energy efficiency can ever be a simple task. The Government has to influence every part of every sector of the whole economy, with complex interfaces with many other policy objectives, so it is inevitably going to require a complex suite of policy levers. And it should also be recognised that these changes take time to filter through.

Raising standards of living and the advent of new appliances means that consumers are finding new ways to use more energy. The fact that these factors offset increases in efficiency is a cause for concern, but does not in itself mean that energy efficiency policy failed or that it is not worth pursuing. Without the energy efficiency policy we have had in place and with out the efficiency improvements this has delivered, the increase in energy usage would have been even greater.

If through increasing efficiency of energy end use or reduction in service demand a consumer uses less energy than they would otherwise have done (this counterfactual element will always generate some uncertainty) then carbon emissions will be lower, demand on supply and distribution networks will be lower, and if that consumer is on a low income, then their tendency to Fuel Poverty will be lower.

Nonetheless, the Government takes on board the Committee’s recommendation for the need for greater clarity. The Government will use the revised Climate Change Programme to provide a clearer definition of its energy efficiency aims. This Government is committed to setting the right environment where Government, business, the public sector and individuals can work together to implement policies successfully and make the goal of a low carbon economy a reality.

MEASURING ENERGY EFFICIENCY

3. In September 2004 the Prime Minister identified climate change as “the world’s greatest environmental challenge”. We agree, and believe that the fundamental objective of policies in favour of energy efficiency at the present time must be the absolute reduction of carbon emissions. This objective must be reflected in the setting of targets for and the measurement of energy efficiency. While the targets in the White Paper have been expressed in terms of reductions in carbon equivalent emissions, the confusion of measures that is found elsewhere in Government policy statements undermines their credibility. We recommend that the Government henceforth adopt a more rigorous approach to the measurement of energy efficiency in terms of carbon. (Paragraph 2.17)
The Government is very clear about what it needs energy efficiency to achieve in carbon terms and has set itself a definition of what is meant by “improvement in energy efficiency”: “Specific energy consumption” is defined as the amount of energy required to deliver a unit of “energy service” (e.g. a hot shower—a specified amount of water heated to a given temperature); or a unit of output (e.g. a tonne of cement). Provided that that unit of service or output remains unchanged, any reduction in the required energy resulting from improvements in the techniques or technologies involved in the service provision (e.g. a better insulated hot water tank, a condensing boiler or an insulated wall) or production process (e.g. a more efficient kiln or cooker) can be closely related to the improvement in energy efficiency.

This is most easily expressed in percentage terms, e.g. as a percentage reduction in the specific energy consumption; we have taken this as a working definition for improvements in energy efficiency (in mathematical terms, the former is the ratio of the energy change to the initial energy; the latter to the final energy).

This definition ensures a close link to the strict technical definition and clarity about what it does and does not measure. In addition, the targets of several policies (e.g. the Energy Efficiency Commitment) are therefore set effectively in terms of improved energy efficiency—measured by the energy reduction delivered by technical measures when the service remains unchanged.

It must be stressed that energy efficiency is a means to an end. It does not necessarily lead to reductions in absolute carbon emissions. Improvements in energy efficiency are a step on the way to carbon reductions (for climate change), energy demand reductions (for security of supply) and energy cost savings (fuel poverty and competitiveness). We also recognise that changes in these variables depend on (direct) rebound effects, and changes in output or the energy service demanded.

The Action Plan details the range of legislation, programmes and incentives to deliver over 12 million tonnes of annual carbon savings by 2010. And as set out in the Action Plan, the Government is clear about what it is looking for from each policy measure—each main energy efficiency policy measure is projected to achieve a specific quantity of carbon savings. Improvements in energy efficiency are an important means to achieving several policy objectives, each of which has its own measure of success (lower carbon, less energy consumption, lower energy costs); therefore the Government rejects “absolute reduction of carbon” as a measure. The Government suggests that it remains perfectly reasonable and publicly understandable for policy measures to have more than one aim. The Government takes on board the Committee’s comment and recognises that for some policies the links to the final policy objectives could be more explicitly set out, both in policy and measurement terms.

Therefore, the Government will use the revised Climate Change Programme to set out, in terms that are clearly understandable and measurable, the contribution improving energy efficiency will make to the UK’s carbon reduction targets.

This Government remains committed to a successful implementation of our suite of energy efficiency measures. To underpin this, the Government has embarked on a comprehensive technical programme to develop energy efficiency improvement indicators.

Energy indicators for UK households have now been developed to illustrate how consumption and carbon emissions depend on the demand for the various services that require energy, and the efficiency with which these services are delivered. As an aid to tracking progress towards Climate Change Programme goals, the analysis underlying these indicators potentially provides links, both with policy measures—past, present and planned—and with projections of future energy demand and carbon emissions. The top level indicators of energy consumption, carbon emissions, efficiency and service demand are built on a simplified framework comprising:

- four energy services: space heating, hot water, lights and appliances and cooking; and
- the range of technologies that affect efficiency: housing construction standards, insulation, heating systems, glazing materials, lighting and appliance specifications, etc.

The paper, published on 21 July alongside the Sustainable Energy Policy Network second annual report, can be found here: www.dti.gov.uk/energy/environment/jwgee/jwgee.shtml.

Work on developing indicators for the commercial and industrial sectors is ongoing.
Establishing a Baseline

4. Levels of carbon emissions should be grounded in clear historical data, not hypothetical projections. Insofar as projections are necessary, the methodology on which they are based should be explicit, transparent and consistent. None of these requirements is being met at present. The “baseline” for the White Paper targets, which is derived from the projections contained in the 2001 Climate Change Programme (which itself took into account the impact of policies introduced by the Government after the signing of the Kyoto Protocol in 1990) is obscure. We recommend that the Government ground its targets more firmly in reality, making it clear how they are derived and expressing them in absolute year-on-year carbon equivalent emissions. (Paragraph 2.30)

The Government welcomes the Committee’s accurate and clear breakdown of the various statements on carbon emissions, and how they have been derived. The Government believe that the table and figures provide an excellent guide to the carbon baseline and projections, and accurately reflect the path the Government has set itself to achieve a transition to a low carbon economy—with a headline goal of a 60 per cent cut in UK CO₂ emissions by around 2050. The Government believes that this work, in conjunction with the substantial amount of projection data that has been published—including Energy Projections for the UK, Energy Paper 68, November 2000 and Updated Emissions Projections, November 2004,¹ provide a clear and transparent overview.

Projections are clearly required, taking account of existing policy measures, to consider the scale and nature of further measures that may be required if targets are to be met. Those projections are themselves—to a substantial degree—based in historical trends and estimated relationships.

This Government recognises the need for greater transparency and DTI have set up a projections advisory working group to address, amongst other things, this element of more effectively communicating information about our projections. This group includes representatives from the energy and energy-using industry and will as part of their remit, look to post the underlying methodologies and assumptions on the DTI website.

The Committee makes reference to the reduction in household sector target from 5 MtC to 4.2 MtC in the Energy Efficiency Action Plan. The 5 million tonne figure in the Energy White Paper was an indicative projection and the reduction in domestic carbon saving in the Action Plan was therefore not related to “technical issues around what the base line is”. The Government’s aim of 4.2 million tonnes of carbon will require the same demanding increase in activity for the energy efficiency industry and the same need for sustained consumer demand for energy efficient products and services.

The Government disagrees with the Committee’s assertion that “real savings cannot be relative”. The improvement in energy efficiency savings are counted on a “bottom-up” basis, ie numbers of installations multiplied by unit savings (with appropriate assumptions about direct rebound effects). Without policies, there are a background number of installations anyway, and it is possible to estimate the average annual level from historical statistics. With policies, that number is increased. The savings the Government counts are from only the additional installations. These are real, and also relative to the background level.

Energy Efficiency and Carbon

5. In order to be able to measure the contribution of energy efficiency to emissions targets, the Government should develop and publicise an explicit and transparent methodology for calculating the relationship between use of delivered energy and greenhouse gas emissions. We have commissioned research that provides one such methodology, which we believe provides the basis for developing a reliable tool for measuring the contribution of energy efficiency to reductions in greenhouse gas emissions. We draw it to the attention of Government. (Paragraph 2.43)

The Government recognises the usefulness of end user analysis of CO₂ emissions and routinely publishes sectoral emissions by end user as well as buy source. Current information can be found on: www.defra.gov.uk/environment/statistics/globatmos/gaemunece.htm.

Since 1999 the Government has also published advice to business on emission factors for use with energy data to estimate emission and emissions reductions. The current version can be found on: www.defra.gov.uk/environment/business/envrp/gas/index.htm.

The Government notes that use of delivered energy emission factors as described in Box 1 of the Committee’s report will not necessarily result in a correct estimate of the impact of energy efficiency measures on UK

¹ both of which can be found at www.dti.gov.uk/energy/sepn/uep.shtml.
emissions because the marginal response of upstream emissions may differ from the average allocation, particularly if (as with refineries) the installations respond to international markets and not only to UK consumption.

THE FUEL MIX

6. We welcome that fact that the United Kingdom remains on track to meet its Kyoto obligations. However, as the emissions data for 2003 show, there is no cause for complacency or self-congratulation—the Government have themselves conceded that the domestic targets contained in the Energy White Paper are unlikely now to be met. In fact the United Kingdom had already met its Kyoto obligations before the end of the 1990s, largely for structural reasons and because of changes in the fuel mix, whereas since 1999 carbon dioxide emissions have risen.

(Paragraph 2.49)

It has always been recognised that measures additional to those in the current UK Climate Change Programme might be necessary to achieve the Government’s national goal to reduce carbon dioxide emissions by 20 per cent below 1990 levels by 2010. The Energy White Paper also made clear that improvement in energy efficiency and increasing renewable technologies would not be sufficient to deliver the 2050 target, but that a third strand would be required, such as coal fired generation linked to carbon capture and storage.

It is not the case that the early progress towards our Kyoto target was simply due to structural change or fuel switching. In 2003, the reduction of all UK greenhouse gases emissions since 1990 against a Business as Usual baseline is estimated at about 60 MtC or 29 per cent. Of this, it is estimated that the restructuring of the energy supply sector in the mid-1990s, with fuel switching from coal to gas contributed only around 25 per cent. Other factors contributed the remainder: a fall in non-CO2 greenhouse gas emissions (30 per cent); greater energy efficiency, whether the result of Government policy or otherwise (30 per cent); and greater use of other low carbon fuels (higher nuclear output, more renewable energy and other fuel switching) contributed around 10 per cent.

Whilst we are on course to meet our Kyoto Protocol target (a 12.5 per cent reduction in greenhouse gas emissions below base year levels by 2008–12), we are under no illusion of the scale of challenge facing us. We need to make a significant effort to meet our 2010 carbon dioxide goal, particularly as carbon dioxide emissions have risen by 4.5 MtC, since 1997. The 2.2 per cent rise in emissions between 2002 and 2003 was linked to higher prices of gas relative to coal. We do not expect this to continue in the medium-term. Nonetheless, we are far from complacent.

This Government has reaffirmed in the 2005 manifesto its commitment to achieving a 20 per cent reduction in carbon dioxide emissions below 1990 levels by 2010 and a review of the UK Climate Change Programme was launched in September 2004 to look at how existing policies are performing and the range of policies that might be put in place to help reduce greenhouse gas emissions, to put us back on track towards our 2010 and longer term carbon dioxide goals. The revised programme will be published before the end of the year.

7. Energy efficiency could contribute significantly to future reductions in emissions, and in the remainder of this report we analyse ways in which this contribution can be maximised. However, we believe that in the long term there is no prospect of the Government’s climate change objectives being met unless there are also innovations in generating technology, fundamentally changing the carbon intensity of the primary fuel mix. We urge the Government to face up to this issue. (Paragraph 2.50)

The Government agrees with the Committee that, whilst energy efficiency will make a significant contribution to future emissions reductions, meeting the long term objective of reducing carbon emissions by 60 per cent by 2050 will also require major improvements in the carbon intensity of energy generation. The Government recognized, as an integral part of the Climate Change Programme and the Energy White Paper, the need for innovation in generating technology and this is why we have committed significant levels of investment to the development of a variety of low carbon options as well as improving the levels of funding given to support research in this area.

Wave and tidal power

Since 1999 around £25 million has been provided to support the development of wave and tidal stream energy full-scale prototypes. In August 2004, DTI announced the establishment of a new “Marine Renewables Deployment Fund”, worth up to £50 million that will support the first small farms of these devices (£42 million), with the remaining £8 million supporting R&D on their environmental impacts, and infrastructure (such as the European Marine Energy Centre wave and tidal stream test facilities in Orkney).
Biomass

The Government has already allocated around £100 million to bioenergy through a range of schemes. Most notably these funds have supported the Bioenergy Capital Grants Scheme (£66 million to a range of biomass heat, power and Combined Heat and Power (CHP) projects and the Energy Crops Scheme (£29 million). Sir Ben Gillis leading a Biomass Task Force which will seek in its one year study to identify barriers to the uptake of bioenergy and recommend measures to increase the contribution that bioenergy can make to help meet renewable energy targets and to boost farming, forestry and the rural economy. The Task Force is expected to submit a final report to Government in October. Further information is available at the following website: www.defra.gov.uk/farm/acu/energy/biomass-taskforce/index.htm.

Microgeneration

The Government’s vision for 2020, as set out in the Energy White Paper, is for much more diverse, local energy generation with fuller connection to the distribution network. We want to see more micro-CHP, micro-wind, micro-hydro, solar thermal and photovoltaic (PV), ground and air source heat pumps, fuel cells (and any other low carbon small-scale generating technology), supplying individual customers and buildings. The UK needs sustainable, secure, affordable heat and electricity to be delivered through competitive markets, and micro-genera

The Renewables Obligation

In addition to specific Government support across the low carbon spectrum, the Renewables Obligation will be providing the equivalent of around £1 billion support to the renewables industry on an annual basis.

Carbon Abatement, hydrogen and fuel cells

Given the seriousness of the threat of climate change we will need all the options available to us to reduce greenhouse gas emissions. In particular, all energy forecasts for both the UK and worldwide to 2050 show continuing or increasing reliance upon fossil fuels, with fossil fuel use increasing significantly in developing countries such as China and India. Consequently we agree that technologies to reduce the greenhouse gas emissions from fossil fuels are extremely important, and the largest reductions can be gained from development and deployment of carbon dioxide capture and storage technologies.

On 14 June this year the Government announced the publication of the Carbon Abatement Technology Strategy for Fossil Fuel use (this focuses on two areas: increasing the efficiency of power stations in order to reduce emissions, and carbon dioxide capture and storage) and the development of a Hydrogen Energy Strategic Framework for the UK. This included a funding package of £40 million for demonstration projects of Carbon Abatement, Hydrogen, and Fuel Cell technologies over the next three to four years.

Research and Development

Looking further into the future, the Government’s 10 year Science and Innovation Investment Framework makes £320 million available, over the period 2005–08, to businesses in the form of grants to support research and development in the new and emerging technologies critical to the growth of the UK economy. Under the April 2004 call, of the £80 million available to projects, approximately £9 million of fund supported 17 projects across a broad spectrum of energy technology issues. DTI also expect to allocate a further £16 million to emerging energy technologies in the November 2004 and April 2005 competitions of the Technology Programme. The Government also provide significant funding to the Carbon Trust for its RD&D programme. The Government are working with the Carbon Trust to take forward a new £20 million fund to accelerate research, development and deployment of energy efficiency—announced by the Chancellor his Pre-Budget report last November.

2 www.dti.gov.uk/consultations/consultation-1504.html
As highlighted by the Committee, Research Council funding for basic and strategic research in energy and related postgraduate training will increase from around £40 million pa currently to £70 million in 2007–08. This will help to address all aspects of the energy agenda including the development of sustainable energy technologies and potential new sources of energy, such as Fusion, as well as improvements to existing technologies, issues affecting networks and distribution, and safeguarding capability in nuclear engineering and associated areas.

**The Economics of Energy Efficiency**

**Energy efficiency and energy demand**

8. The Government’s proposition that improvements in energy efficiency can lead to significant reductions in energy demand and hence in greenhouse gas emissions remains the subject of debate among economists. The “Khazzoom-Brookes postulate”, while not proven, offers at least a plausible explanation of why in recent years improvements in “energy intensity” at the macroeconomic level have stubbornly refused to be translated into reductions in overall energy demand. The Government has so far failed to engage with this fundamental issue, appearing to rely instead on an analogy between micro- and macroeconomic effects. (Paragraph 3.11)

9. We welcome the UKERC project to investigate the “rebound effect” and the empirical basis for the “Khazzoom-Brookes postulate”, and recommend that the Government, in parallel with the establishment of a more robust measure for energy efficiency, take full account of the project’s progress and results in developing future policies in this area. (Paragraph 3.12)

This Government recognises that there is a need to assess the relative importance of direct rebound effects for different energy services in different contexts, and to synthesise the existing knowledge on the indirect and economy-wide effects. The Government recognizes that not all energy efficiency improvements are converted into energy reductions and carbon savings and are aware of the existing evidence. However, any rebound effect would have to be very strong to suggest that the Government should not be pursuing energy efficiency policy as it is.

With continuing controversy over the overall importance of the rebound effect the Government also welcomes the UK Energy Research Centre project “The Evidence for a Rebound Effect from Improved Energy Efficiency” which is looking to review existing literature on the rebound effect and to identify gaps in the analysis, and which is to be completed in January 2006. Following on from this, Defra and DTI plan to jointly commission work in 2006 on the macro-economic effects of energy efficiency in the UK.

The Committee acknowledges that there is very little academic evidence to support the Khazzoom-Brookes postulate at present. The Khazzoom-Brookes postulate suggests that energy efficiency improvements create changes at the macro-level that result in higher overall energy use. Whilst this may have been true during the industrial revolution when more efficient use of coal boosted the use of machinery, this is an extreme view in today’s economy. Energy efficiency improves productivity hence it boosts economic growth, yet in a mature economy other factors are likely to be more important drivers of growth, including use of IT, education, skills and technology change.

The Government believes that energy efficiency has a key role to play as one means of moving towards a low carbon economy and the Government will continue to work hard in implementing the energy efficiency policy and measures we have in place; and will continue to look for further ways to reinforce these.

**Cost effectiveness**

10. We recommend that the Government exercise caution in using the potentially misleading term “cost-effective” to describe investment in energy efficiency. They should seek to demonstrate realism as to what is economically achievable by means of private sector investment in energy efficiency. (Paragraph 3.18)

There are two separate applications of cost-benefit analysis: firstly to understand the impact of Government policies as they are developed, and secondly to analyse the barriers to decision makers in an attempt to understand real-world consumer behaviour. What is cost effective in national policy design terms is not necessarily cost effective to the decision maker on the ground—and cost-effectiveness is not intended to be a proxy to that.

The Government’s energy efficiency policies aim to remove the barriers that prevent the cost-effective potential for energy efficiency from being realized. This will improve the efficiency with which resources are used in the economy as well as helping the UK to achieve its environmental commitments.
The Energy Efficiency Standard of Performance (EESoP) scheme (1994–98), the first energy efficiency scheme for energy suppliers, was audited by the National Audit Office (NAO) in 1998. In their report, the NAO\(^3\) showed that the cost of achieving energy savings equated to an average cost of saving electricity of around 1.8p/unit. This was less than the average price of off-peak electricity by customers using an off-peak tariff (an average in the period to March 1998 of around 2.7p) which was the lowest price that domestic customers could pay, and much less than the average price paid for electricity used for other purposes.

Specific energy efficiency programmes, such as the Energy Efficiency Commitment, have indeed been proved to be cost effective—ie the cost of the measures over the lifetime of the programme will be more than recouped in the value of savings (or increased comfort). In other words, the total benefits of the measure are greater than the cost (discounted) over the lifetime of the measure. A typical payback time is about 3–4 years for cavity wall insulation (with a lifetime assumed to be 40 years) for example; some measures in industry can have even shorter payback times.

The Government agrees that estimates of the “cost-effective” potential for energy efficiency should include all relevant costs discounted at a rate that reflects the availability of alternative investment opportunities. The Government is, as part of the Climate Change Programme review, appraising the overall cost effectiveness of all the policies per tonne of carbon saved and by lifetime net present value, to 2010 and 2020.

As part of the Energy Efficiency Innovation Review, the Government commissioned studies into the barriers to energy efficiency to better understand where cost effectiveness is and is not a driver, and as a means of helping better inform our policy mix and mechanisms. Cost effectiveness does not appear to be a strong driver, except for the most intensive energy users, suggesting that levers other than simple subsidies or increases in energy price are likely to be most effective in changing consumer decisions. This is particularly true in the case of rented property, where the up-front costs are borne by the landlord and the benefits in terms of reduced energy bills are most commonly received by the tenant. Further detail of this work will be available when the Review is published. This is currently planned alongside the wider review of the UK Climate Change Programme.

11. We further recommend that the Government promote the application of the Green Book guidelines, encouraging decision-makers at all levels, including local authorities, housing associations, PFI projects and other private sector providers to the public sector, to consider lifetime costs in committing expenditure to long-term capital projects. (Paragraph 3.19)

The Government agrees, in principle, that it should lead the way through public sector procurement and that whole-life costing must be considered in making procurement decisions. Much has been accomplished over the last few years and more is being planned.

Government procurement policy, as set out in “HM Treasury Procurement Policy Guidelines, Government Accounting Chapter 22”, make clear that all public procurement of goods and services, including works, is to be based on value for money, having due regard for propriety and regularity. Value for money is defined as being the optimum balance of whole life cost and quality (or fitness for purpose) to achieve the user requirements.

There has been abundant guidance documentation drawing attention to the importance of whole-life costing in making procurement decisions. Examples of this include the updated Joint Note on Environmental Purchasing (OGC/Defra, 2003), Green Public Private Partnerships (ODPM/OGC/DfT/Defra, 2002) and prior to these the Green Guide for Buyers (Defra, 2000).

Buildings have the greatest impact on energy usage of any procurement decision. Thus steps taken in construction stages to ensure built-in savings are the easiest means of achieving long-term gains. As part of OGC’s Achieving Excellence in Construction project they have produced a guidance document titled “Achieving Sustainability in Construction Procurement”—firmly emphasising the importance of life-cycle costs in design and construction. Another guidance note—Procurement 07—specifically addresses whole-life costing. The Commission for Architecture and the Built Environment have also produced guidance on evaluating and delivery design quality in buildings beyond the public sector.

In Securing the Future—the 2005 UK Sustainable Development Strategy—it was explicitly stated that efficiency gains in economic, environmental and social terms would be aided by “the more widespread use of whole-life costing” in procurement. It was further proposed as a goal that by 2009 the UK should be recognised as amongst the leaders in sustainable procurement across EU states.

The Sustainable Procurement Task Force was set up to deliver the commitments of the 2005 UK Sustainable Development Strategy. It is mandated to produce an Action Plan by April 2006. This will set out how to, inter alia, make more efficient use of public resources and avoid adverse environmental impacts of public

\(^3\) “Office of Electricity Regulation: Improving Energy Efficiency Financed by a Charge on Customers”.
procurement. While recommendations of the Task Force cannot be pre-empted, methods of changing procurement behaviour other than through guidance notes are being examined as evidence. The task force is building on the work of other bodies active in this field, including the Sustainable Development Commission, the Sustainable Procurement Group and the Strategic Supply-Chain Group. Of particular interest has been the Environment Agency’s web-based tool for small-scale acquisitions and another similar tool adopted by the Welsh Development Agency.

Finally, Defra, OGC and OGCbuying.solutions have planned their second Sustainable Procurement Conference to take place on the 19 October 2005 at the Queen Elizabeth II Conference Centre. The Government believes that events such as this can directly influence procurement behaviour.

**Policy Coherence and Departmental Structure**

**Central government**

12. The Government asserts that the Strategic (sic) Energy Policy Network (SEPN) ensures effective co-ordination across Departments and agencies. The evidence we have heard does not bear this out. While there will inevitably be boundaries between different departmental responsibilities, the way these are currently set is a recipe for confusion. We therefore recommend once again that the Government bring together responsibility for those aspects of energy policy currently handled by Defra and the DTI under a single Energy Minister. We believe this to be a necessary first step if the wide range of policies and agencies in the energy field are to be rationalised and effectively co-ordinated. (Paragraph 4.15)

Tackling climate change means influencing every sector of the economy including the housing, health, education, and transport sectors, as well as the energy sector. It is not realistic to expect all of these sectors to be the responsibility of any one Department or Minister. The establishment in May 2005 of the Ministerial Committee on Energy and the Environment (EE)4 chaired by the Prime Minister reflects the importance this Government attaches to meeting our domestic and international targets and will secure a high level of commitment across Government to effective climate change mitigation policies.

Whilst there will always be departmental divisions which ever way responsibilities on climate change policies are split, it is clear that the Secretary of State for the Environment leads the UK’s work on reducing emissions of greenhouse gas emissions and the adaptation to the effects of climate change. However, the Government believes that it is important to secure a high level of commitment across Government, which the Sustainable Energy Policy Network (SEPN) enables us to do, rather than trying to bring more and more areas of policy within the direct control of any one Minister.

SEPN was originally set up to guide the implementation of the 2003 Energy White Paper5 but is now used to consider relevant issues beyond the White Paper such as the current review of the Climate Change Programme (CCP). SEPN is co-chaired by the Secretary of State for Environment and the Secretary of State for Trade and Industry and is attended by a range of Ministers from a wider range of departments than the EE Committee. These include the Department for Transport, Office of the Deputy Prime Minister, the Foreign & Commonwealth Office, Her Majesty’s Treasury, Ministry of Defence, the Office of Science and Technology and the devolved administrations ensuring that it is high on the agendas of all.

The Government has adopted the approach of seeking to ensure that action taken to address these goals is as mutually reinforcing as possible. The Government continually monitor these arrangements to ensure that they continue to fulfil their purpose, that co-ordination is effective and that all departments are playing their part in delivering the White Paper goals.

13. We believe that the existence of two agencies promoting energy efficiency risks overlap and confusion. We therefore recommend that the Carbon Trust and the Energy Saving Trust be merged. (Paragraph 4.16)

The Government undertakes regular reviews of the Trusts to evaluate their effectiveness and value for money. The current review of the Climate Change Programme is providing an in-depth review of how existing low carbon policies are performing and the range of policies that might be put in place in future. The Trusts’ activities are being evaluated alongside all other carbon abatement measures, as part of this process.

The Trusts’ remits and activities overlap very little. The Carbon Trust has a focus towards the business and public sectors while the Energy Saving Trust focuses on household energy use. These sectors have different needs and require different approaches. The Trusts work closely and effectively together on some areas where they have shared or interacting interests, for example in the public sector and at different stages of the market transformation and innovation process.

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4 Terms of reference for the EE Committee and its composition can be found at www.cabinetoffice.gov.uk/cabsec/cabcom/ee.htm
5 http://www.dti.gov.uk/energy/whitepaper/index.shtml
Local government

14. Local authorities are in many cases better placed than central Government to bring together local people and industry in developing innovative projects to promote sustainability and energy efficiency. However, there is no consistency of approach across local authorities, while the successes of authorities such as Leicester and Woking appear to have been if anything hindered rather than helped by central Government. We therefore recommend that the Government both make more effort to disseminate the existing “invest to save” rules, and explore new ways to promote dynamic local action in pursuit of its energy policy goals. In particular the Government should consider the model of the Swedish Local Investment Programme, as a highly effective means to kick-start local initiatives. (Paragraph 4.23)

The Local Investment programme, managed by the Swedish Ministry of the Environment, brings together all Sustainable Development funding streams into one pot which municipalities and the private sector can bid into.

While there is a significant focus on reducing the use of energy, improving energy efficiency and increasing the use of energy from renewable sources, the Swedish programme also provides funding for the reduction of waste, treatment of water and sewage, decontamination of polluted land and nature conservation and biological diversity.

The UK Government funds a number of delivery programmes which deliver the same climate and energy outcomes as the Swedish model, however the key policy areas (energy efficiency, energy supply, renewable energy and transport) are delivered by different Government departments therefore responsibility for these programmes is also distributed across these departments.

While the Government sets the regulatory framework to require and support energy efficiency measures we realise that central government is not always best placed to deliver some programmes on the ground. The Carbon and Energy Saving Trusts therefore have a role to play as our key delivery agents.

We recognise local authorities and regional bodies are pivotal in delivering change in their communities. Working alone or with other local and regional partners, they already have an important impact on the delivery of energy efficiency, renewable energy and other low carbon technologies. They also have a critically important role in galvanising action by local communities, businesses and other key local stakeholders, consistent with their role in providing community leadership.

We are also aware that there is very good practice in some areas. Local authorities are engaging with the private sector, through their local strategic partnerships and other mechanisms to bring about this change. It is for this reason that the Government established a Beacon Councils theme on sustainable energy: to promote innovative local approaches on generation and demand-side measures, to ensure that good practice is shared and to allow authorities to learn from each other and deliver high quality services to all.

Specific examples of the support available for local delivery through the Government, The Carbon Trust and the Energy Saving Trust include:

— Community Energy Programme (Defra). To date, £42 million has been committed to 61 energy saving schemes in the first nine rounds of the programme beyond 2004–05. We will continue the programme for at least the next three years, to 2008 with additional funding of £10 million.

— Community Renewables Initiative (Countryside Agency).

— Large Scale (PV) Demonstration Programme and Clear Skies—(DTI).

— EST’s Community Partnerships, including support for Local Authorities in meeting their responsibilities under the Home Energy Conservation Act, in the region of about £6 million.

— The EST’s Innovation programme was set up for Local Authorities, Housing Associations and their project partners to implement innovative, local, sustainable energy projects to deliver carbon savings from domestic housing and now also supports/funds the replication of successful schemes.

— Local Authority Financing Scheme (Carbon Trust)—In 2003–04 the Carbon Trust committed £4 million plus operating expenses over four years, matched by a similar amount by local authorities, to the pilot Local Authority Energy Financing Scheme, which directly addresses financial barriers to energy saving capital procurement in local authorities. The programme is establishing series of ‘invest to save’ funds for use in the local authority estate and schools.

— Local Authority Carbon Management Programme (Carbon Trust) will have worked with 40 local authorities within Local Authority Carbon Management, identifying an estimated 140 ktCO2e, equivalent to 10 per cent of their combined emissions.
The 2005–06 Invest to Save Budget provides support for energy projects that increase the extent of joint working between different parts of government; identify innovative ways of delivering public services; and reduce the cost of delivering the services and/or improve the quality and effectiveness of services delivered to the public by developing partnerships with the third and private sectors.

More widely the Climate Change Programme review has commissioned work to look at the scope for new or strengthened delivery programmes at local and regional levels, including our Energy White Paper commitment to carry out a review of the guidance issued to Energy Conservation Authorities.

The European Union

15. The European Union is already influential in the field of energy efficiency, and is likely to become still more influential in future. We look to the Government to ensure that the United Kingdom uses the opportunity presented by its forthcoming Presidency to promote best practice, negotiating effective, enforceable legislation where appropriate, and at the same time ensuring that the principles of subsidiarity and proportionality are respected. (Paragraph 4.26)

Through our Presidencies of the G8 and EU this year, we have put climate change at the top of the international agenda. The outcomes at Gleneagles were a huge step forward and delivered on the Prime Minister’s stated aims: a statement on the science; a package of practical actions to reduce greenhouse gas emissions; and a new Dialogue involving the G8 and the key emerging economies.

Significantly, the G8 communiqué outlined a package of actions around energy efficiency, cleaner power generation, R&D, financing cleaner energy and managing the impact of climate change. But probably the most significant outcome from the G8 communiqué was the commitment of the G8 countries to a continued dialogue. To include other countries with significant energy needs on climate change, clean energy and sustainable development. That dialogue will be kicked off with a conference in November in the UK, and will carry on through the Russian presidency next year, with the aim of reporting back during the Japanese presidency in 2008.

The Government has made advancing work on energy efficiency within the European Union a priority for our Presidency. We are seeking to make progress on the negotiation of the Energy End-Use Efficiency and Energy Services Directive with the aim of securing adoption later this year if a deal can be brokered between Council and Parliament at Second Reading. The Directive is intended to enhance the cost-effective improvement of energy end-use by removing market barriers and creating conditions for the development of markets for energy services and the delivery of other energy efficiency improvement measures. We will also be working closely with the Commission to facilitate the public debate on energy efficiency launched by the Commission in their Green Paper, Doing More With Less. In December 2005, at the Energy Council, we will be holding a policy debate on the Commission’s proposals with the aim of establishing Member States’ priorities for action, which will feed into the Commission’s Energy Efficiency Action Plan due 2006.

As part of our commitment to the European Commission’s energy efficiency workstream, we are hosting an international energy efficiency conference on 2–3 November 2005, in support of the UK Presidency of the G8 and EU, in order to further the UK’s energy efficiency agenda and to encourage sharing of best practice.

Behaviour

Incentives

16. We endorse the view of the Energy Saving Trust, that the Government should urgently review the fiscal incentives to energy efficiency. None of the proposals we have heard appears to be without difficulties, but we look forward to the results of the pilot scheme initiated by British Gas and Braintree Council, which should provide valuable information on the effectiveness of Council Tax rebates. (Paragraph 5.29)

The Government is prepared to consider a wide range of options that may help us meet the challenge of cutting carbon emissions from people’s homes, including the potential positive effect of tax incentives on consumer awareness and demand for better energy efficiency.

The Government accepts the importance of improving energy efficiency in the domestic sector, recognises the role that economic instruments can play and has introduced a range of measures to encourage greater domestic energy efficiency. When considering the use of fiscal measures for environmental purposes, it is necessary to take account of all economic, social and environmental objectives. The Government continues to look for effective ways, including the use of fiscal measures, to encourage an increase in energy efficiency in domestic properties. The Energy Efficiency Innovation Review has looked in detail at the barriers and incentives for
energy efficiency, including development of a new household consumer response model based on new market research. The findings of this work are currently being considered as part of the review of the Climate Change Programme.

The Government notes the Energy Saving Trust’s recommendations in their recent report “Changing climate, changing behaviour—Delivering household energy saving through fiscal incentives” on council tax rebate and their considerations of the costs and benefits, including the need to assess carefully the deadweight costs and the distributional impact. We are also closely monitoring the British Gas/Braintree District Council, council tax rebate scheme for home insulation.

17. We look forward to the results of the Carbon Trust’s review of the impact of the Enhanced Capital Allowances scheme, and, subject to the results of that review, recommend strengthening the financial incentives for small companies, and increasing use by the public sector of the Energy Technology List. This should include the extension of the requirement to use the List to Private Finance Initiative projects. (Paragraph 5.30)

The Government is taking forward a formal evaluation of the scheme for Enhanced Capital Allowances (ECA) for energy-saving technologies with the aim of reporting next year. The Government is keen that the ECA scheme is as effective as possible in encouraging the take-up of designated energy-saving technologies and will consider the results of the evaluation carefully.

The ECA scheme is only one of the ways that Government provides support to businesses to save energy and improve their energy efficiency. It is an integral part of the climate change levy programme that was introduced to help the UK reduce its carbon emissions. The ECA scheme works by providing up-front tax relief for spending on designated energy-saving technologies, which can provide a cash flow boost, which can benefit businesses of any size. The Government also set up the Carbon Trust, a not for profit private company principally funded from climate change levy revenues. One of the Carbon Trust’s initiatives is an interest-free loan scheme, which is specifically targeted on smaller businesses that wish to invest in the energy-saving technologies published in the Energy Technology List.

While the Government is keen to promote the energy-saving technologies on the Energy Technology list, it does not believe that it should be made a requirement for private finance initiative (PFI) projects. No company or public sector organisation is required to use the list. It must consider its own needs in investing technology, balancing issues such as the cost of the product, including any tax advantages, against reduced energy bills. Because PFI contractors typically design, build, finance and operate assets through long term contracts (typically 25–30 years), they are already incentivised to consider whole life costing and energy efficiency issues.

The Government has also published advice about how to take account of environmental considerations within PPP and PFI project teams.

18. We welcome the current energy services pilot scheme. If the results of the pilot are satisfactory we look forward to the extension of the energy services model nationally. (Paragraph 5.31)

The Government fully recognises that the Energy Services approach, in helping to overcome some of the major barriers to energy efficiency investment such as a lack of capital and high up-front costs, has potential advantages for both suppliers and consumers.

The Government has taken forward our support for the energy services approach through a number of avenues. The trial relaxation of the 28-day rule, which began in May 2004, represents a real move forward in our efforts to encourage an energy services approach. The two-year pilot is looking to test whether the 28-day rule can be waived, whilst maintaining adequate consumer protection. Energy service activity under the trial suspension of the 28-day rule has to date been limited, with suppliers focused on small pilots rather than larger schemes. However, supplier activity has led to some consumers thinking about improving the efficiency of the whole of their house. The Government looks forward to seeing a successful conclusion to the trial.

Outside of the energy services trial the Government are in close touch with energy suppliers, as they look to take forward their energy service schemes, including the British Gas led “Warm Fix", which offers a package of cavity wall insulation, low energy lighting and an energy efficiency audit, together with fixed gas and electricity prices for three years; and the npower “Your Energy Saver” which comprises an energy audit, discounted energy efficiency measures, a zero premium three-year fixed gas supply contract and an optional finance package.

In addition, the Energy Efficiency Commitment (EEC) is underpinning the Government’s support for energy services. Under the EEC suppliers can be awarded increased energy savings for carrying out an energy service scheme. The scheme will be accredited with an additional 50 per cent of the energy savings up to 10 per cent of each supplier’s overall target, if their activity includes:

— At least two measures, one of which must be insulation to the loft or walls, or an improvement to the primary heating system such as a boiler or CHP;
— An assessment of the premises;
— Relevant advice to the consumer; and
— The option for deferring the payments of the measures.

The Chancellor announced in Budget 2005 that the Treasury will host a summit later this year to explore how Government and the business community can encourage, and remove barriers to, the development of energy services markets in the UK. This will involve identifying market failures on the supply side and the demand side for energy services and considering the most appropriate tools for tackling these failures.

More broadly the EST has been working to stimulate energy services since its inception in the early 1990s. The Energy Services Support team in the EST offers a range of services that can help local authorities, housing associations and other not-for-profit organisations to design and implement energy services schemes. These include up to two days free consultancy; a range of free good practice material and case studies; and access to a telephone hotline for general help, support and signposting.

19. We further recommend that the Government and regulator review current energy pricing arrangements, which create a perverse incentive to consume more energy. In particular, we recommend that the Government explore the feasibility of introducing pricing arrangements based on the model of “lifeline tariffs”. (Paragraph 5.32)

The idea of lifeline tariffs, namely allocating a certain amount of electricity to each consumer, and any use in excess of that will face a much higher tariff, would, at the outset, seem to offer an option to improve energy efficiency. However, this proposal goes against Government policy of not intervening in energy markets and, through its potential to be complex to administer, may be a threat to security of supply.

The Government believes that environmental goals are best achieved through dedicated policy instruments (e.g. Renewables Obligation) as opposed to direct interventions in the market. Also agreeing levels of consumption, including possible exemptions and exceptions, as well as administering such a system, may lead to over-regulation of the market. Excessive regulation can impact negatively on investment decisions in the sector. Also, intervention can create uncertainty, which again has a negative impact on investment decisions. For the market to deliver security of supply and make long-term investment decisions, it needs regulatory certainty. The Energy White Paper 2003 notes that over-regulation was a main cause of the security of supply problems experienced by California.

Education

20. We recommend that the Government make earmarked funding available, possibly as part of the “Building Schools for the Future” programme, to finance innovative, energy-based school projects such as those in Leicester. (Paragraph 5.33)

DfES is undertaking a number of initiatives to encourage greater energy efficiency in schools, including the Energy Efficiency Certification Scheme run by the Energy Saving Trust. The Government are particularly keen to encourage a whole-school approach to energy management and use of renewables in schools. The Government know that energy use in schools is increasing year on year. However, it is currently not possible to predict the likely increases in energy demand in schools as a consequence of extended hours, ICT, new buildings, etc.

New schools are already built to good standards of energy efficiency. In addition, the new Part L2 of the Building Regulations to be published in October 2005 will require, under Requirement L2A.4, “Where technically, environmentally and economically feasible, new buildings shall incorporate renewable and/or decentralised energy supply systems.”

The benchmark level of renewable energy sources, given in Part L2 2005 that should be included in a new school is 10 per cent of the building carbon load. A lesser renewables element has to be compensated by enhanced energy efficiency measures to achieve the same overall carbon performance of the building.

DfES supports the use of whole-life costing in accordance with Treasury guidelines to determine the economic feasibility of incorporation of low-carbon design including the use of on-site renewables whether required under Part L2 or Planning Requirements.

Increased capital investment in all schools, as well as the massive investment being made through programmes such as Academies and Building Schools for the Future, offers a unique opportunity to ensure that all our new school buildings are energy efficient. Total government support for schools capital is £5.5 billion this year, rising to £6.3 billion in 2007–08.
There are quite a number of schools aiming to become carbon neutral using a combination of measures available to all schools, both new and existing. The measures include metering, monitoring and good-housekeeping, installation of cost-effective energy-efficiency measures, installation of on-site renewable-energy sources or combined heat and power and purchase of green-tariff electricity coming from remote renewable energy generation such as wind farms.

It should be recognised that carbon impacts arise from far more than energy usage. It is probable that travel, procurement and waste produce more significant carbon impacts in schools than energy. Hence a low-carbon strategy must focus on these issues too. A whole school carbon strategy is very different to a whole school energy strategy. In order to achieve carbon neutrality, new (or refurbished) schools will need to consider installing renewables and combined heat and power where applicable. They will also need to pay attention to wider issues such as travel planning and waste reduction.

Rather than “one-off” or ear-marked programmes the Government has increased funding for all school projects. This year the Government has made it a requirement for all major new build and refurbishment projects that a BREEAM (Building Research Establishment Environmental Assessment Method) Schools environmental assessment is carried out and we expect a minimum rating of very good to be achieved on all these projects. The BREEAM Schools environmental assessment method is weighted towards rewarding low carbon schools and will help schools consider these issues carefully in the round.

The review of the Clear Skies programme also presents opportunities to consider new ways of funding low-carbon initiatives in schools including the use of renewable energy systems. Equally the Government is looking to encourage the development of Energy Service Companies to supply and maintain sustainable energy systems in schools and the wider community.

21. There are currently too many possible sources for energy efficiency advice; the quality is inconsistent, and follow-up patchy. We welcome the efforts of the Energy Saving Trust and Energy Advice Providers Group to bring coherence to the field. (Paragraph 5.41)

22. However, we believe that local authorities, particularly if they are able to assume the more proactive role in promoting energy efficiency that we have already recommended, are likely to be best placed to provide impartial advice tailored to the needs of local consumers. We recommend that the new Sustainable Energy Network be developed in such a way as to promote best practice, while ensuring that the responsibility for delivering advice is devolved to local level. (Paragraph 5.42)

The Government agrees that local authorities are well placed to be involved in the provision of impartial advice. Historically, the Energy Efficiency Advice Centre (EEAC) network has worked closely with local authorities in the delivery of advice through either:

— Contracting out the provision of the EEAC service to local authorities where they can demonstrate the ability to be the best advice provider locally. Currently, approximately a third of the EEAC service providers are local authorities. This includes Leicester City Council whose service is referred to in the report.

— Delivering advice with the local authority utilised as a channel to consumers. In this way the EEAC provides the technical expertise and customer service while the local authority provides local credibility and cost effective access to consumers. This partnership approach can therefore enhance the impact of the advice.

Through this approach the Government involve and utilise the local authorities in appropriate ways relevant to their abilities and interest in providing advice.

Moving forward, the Sustainable Energy Network will continue this flexible approach. The Energy Saving Trust will manage the overall quality and consistency of the service provision, ensuring that there is a consistent “one stop shop” service for consumer advice on sustainable energy. The responsibility for determining how the advice is actually provided will be devolved to a local level, ensuring that the approach and the involvement of local bodies involved (including local authorities) is best suited to local conditions. Defra is currently providing financial support to the Energy Saving Trust for its pilot of the Sustainable Energy Network approach. The pilot will consider how interaction between a range of local and regional partners can best deliver local energy efficiency advice and support.

23. Wherever possible energy efficiency advice should be tied to firm data so as to produce specific recommendations for action. Energy supply companies are to an extent already offering such a service by means of energy surveys. The introduction of Energy Performance Certificates will offer an ideal opportunity for local authorities to target advice more effectively. (Paragraph 5.43)
The proposed amendment to part L of the Building Regulations will place a whole-building energy performance calculation at the heart of the design/compliance framework. This will enable designers and builders to explore a range of alternative strategies to achieving the overall performance standard. This will provide the tools needed to make informed and robust decisions about the most cost effective way of achieving the design goal. The guidance on cost-effective improvements that will accompany the preparation of an energy performance certificate will be another mechanism for generating targeted advice.

Performance Certificates will include a variety of information on the energy efficiency of the property including an energy rating and the fuel costs for heating and lighting the building. It is hoped that the certificates will help inform the choices of prospective tenants or buyers, and encourage owners or landlords to carry out energy efficiency work on their properties that will help cut residential emissions.

Information

24. We recommend that the Government, together with the regulator, not only press forward their review of the presentation of information on bills, but that they specifically explore innovative ways in which information can be presented so as to exert the greatest possible influence on behaviour. (Paragraph 5.46)

25. Since 2001 the Government has dragged its feet on smart and remote metering, and now appears to be resisting draft European legislation that would require more rapid development of the technology. We deplore this. In the long term, the surest way to achieve lasting reductions in energy use is to empower consumers—to provide them with the information that enables them to manage their energy use. We therefore urge the Government to take the lead in establishing a large-scale trial both of remote metering and of low-cost options for “smart” domestic display units, which could be rapidly developed and rolled out. (Paragraph 5.57)

As reflected in the Energy Efficiency Action Plan, metering and billing has been identified as a key means of addressing energy use in every sector. This has been further reinforced by the emerging conclusions of the Energy Efficiency Innovation Review. The Government believes that providing consumers with accurate and useful feedback on their energy consumption through metering and billing systems could prove a useful tool as part of a robust package of measures to help deliver carbon emissions savings. The availability of accurate information is an essential aspect of ensuring that all customers can assess where they can reduce energy consumption and as a check to see if the energy saving measures that they have introduced are having an impact on their bills. And at the most basic level, accurate and timely billing is a prerequisite for domestic customers and SMEs to budget accurately for their energy supply as part of their overall household and business expenses.

Earlier this year, Mike O’Brien MP (the then Energy Minister) wrote to all suppliers in the domestic market to stress the importance of their taking early action to improve the timeliness and accuracy of bills, in the light of the significant level of complaints—around 40,000—that Energywatch continued to receive in respect of billing practices. And as you have noted, metering and billing has since been developed into a key workstream of the Joint Working Group for Energy and the Environment.

As the Committee recognises, the regulator Ofgem has a key role to play. Ofgem’s letter to energy suppliers in December 2004 asking for their assessment of the metering and billing problem (in terms of the accuracy and frequency of metering information received) and which challenged the energy suppliers to indicate by February 2005 what they can do to improve the provision of accurate and timely information to consumers was a welcome first step. We also welcome Ofgem’s investigation into a “super complaint” about billing by consumer body, Energywatch and Ofgem’s resulting response in July. Several key measures were announced that industry must implement in a year to improve billing standards for all customers, or face regulatory action. We are encouraged by the Ofgem investigation which also highlighted that current investment plans of the industry will see hundreds of millions of pounds being spent on improving customer service and new billing systems.

The Government has not resisted the Energy End-Use Efficiency and Energy Services Directive. On the contrary, taking forward the Directive is one of the priorities for the United Kingdom’s Presidency of the European Union. We believe that the provisions of the Directive relating to metering and billing will act as an important driver for delivering significant improvements in the information available to consumers about their own energy consumption.

The Government awaits with interest the outcome of ongoing metering reviews, including the desk review of smart metering being undertaken by Sustainability First.

Whilst there is strong evidence from overseas that improved metering can lead to sustained reductions in energy consumption, there is little existing UK evidence. The current draft of the Directive will require the Government to install “actual time of use” metering where “technically possible, financially reasonable and
proportionate to the potential savings” and on natural replacement cycles. The Government agrees that, whilst there is nothing to prevent the introduction and use of “smart” meters, there is a need to undertake further work to ascertain where these conditions would apply. As part of this, the Government is considering the merits of a UK-based trial.

The Government will continue to work with Ofgem and the energy suppliers, including as part of our consideration of the effective adoption and implementation of the Energy End-Use Efficiency and Energy Services Directive, to fully explore all possibilities for the greater uptake of improved metering systems.

NEW BUILDINGS

Building regulations

26. It is disappointing that the standards of energy efficiency required by Part L of Building Regulations will, even after the latest review, not match the best standards in Europe. We have considerable sympathy with those who argue for a step-change in these standards. However it appears on balance that the construction industry in this country is not equipped, particularly in terms of skills, to cope with such a step change. The Government’s approach of regular reviews between now and 2020 therefore represents a pragmatic approach. However, it is essential that the Government set a clear direction for the next 15 years, and demonstrates its determination not to let a conservative industry hold back progress. (Paragraph 6.14)

The Government recognises the important role that Building Standards can play in improving energy efficiency. Indeed the emerging conclusions of the Energy Efficiency Innovation Review show that building regulations (along with minimum performance standards for products) are among the most cost-effective policies, and have consistently proven effective internationally.

Buildings standards are not low in the UK and as the Committee indicate, we have signalled our intention to review the Regulations every five years. The current UK standards are comparable with those of other European countries with similar climates, and the proposals to further raise standards in 2006 will improve on that situation, and will represent a significant improvement in performance of 40 per cent over the period 2002-06.

Building Regulations provide a baseline for standards—they provide a minimum standard, which all buildings much reach. The building industry tends to be conservative in its outlook because clients (including householders) tend to be conservative as well. So they are only selling what consumers demand. When we update building regulations we have to ensure they are proportional to the risk we are trying to reduce, enforceable, and readily understandable by the building industry. We do not want to over-regulate. Hence all new Regulations are subject to a rigorous Regulatory Impact Assessment. The performance standards must remain within the capabilities of ordinary builders working in ordinary circumstances. This does not prevent builders (or clients) specifying higher performance standards for themselves.

Most importantly, the current proposals will provide a firm framework on which performance standards can be raised in the future. As part of this process, it is intended that a Future Thinking Paper be published later this year.

The code for sustainable buildings

27. We strongly believe that the new Code for Sustainable Buildings should build upon the existing BREEAM and EcoHomes standards. There is no need to reinvent the wheel. BREEAM and EcoHomes are well established, and have been developed with the full input of the construction industry as well as the research expertise of the BRE. We doubt that any new Code would have similar authority or would command similar support. (Paragraph 6.20)

28. We note that ODPM, as part of its consultation on the revision of Part L, has published papers setting out aspirational standards for 2010. We welcome this initiative, and recommend that aspirational standards in future be built into the Code for Sustainable Buildings, so as to give a clear signal to the industry of future trends in Building Regulations. (Paragraph 6.22)

The Government’s response to the Sustainable Building Task Group report: “Better buildings better lives” clearly indicated that the Government will consider how best to build upon the work already undertaken by the BRE on BREEAM and EcoHomes as well as other work including our successful Millennium Communities Programme. In developing the Code the steering group have therefore looked to ensure that the Government does not reinvent wheels unnecessarily, but build upon current work which is already complete, or underway.
From April 2006 all new homes receiving government funding will meet the Government’s new Code for Sustainable Buildings. The Code will work in conjunction with the Building Regulations and could give a clear indication of their likely future direction, demonstrating to the industry what is possible. The Government will be consulting on the Code later this year.

**Enforcement**

29. *We share the alarm of the Environmental Audit Committee at the “apparent ease and possible extent of non-compliance with Part L of Building Regulations”, and endorse their recommendation that ODPM conduct a thorough review of the problem.* (Paragraph 6.29)

In the Energy White Paper and the Energy Efficiency Action Plan published in April last year, the Government made clear that it fully recognised that the issues of compliance and enforcement are an important concern. These issues were included as an integral part of the Part L consultation. The current review of Part L has addressed these issues by increasing the emphasis on pre-completion testing and commissioning, and by embedding expertise in the energy calculation software that will be used to demonstrate compliance with the energy target. The software will automatically produce checklists that will help building control bodies prioritise their sample checking of the completed building to provide greater certainty that the key energy efficiency measures are installed correctly. ODPM are also embarking on a major dissemination and training programme targeted at building control bodies to better equip them to check compliance.

However, one of the findings of the Energy Efficiency Innovation Review was that while levels of non-compliance may be high, the impact on carbon savings appears to be comparatively low—data from a 2004 study on 99 houses revealed that less than 5 per cent of the expected gains from the 2002 revision were being lost. However, as minimum standards of air tightness and insulation increase in 2006 and through future revisions to the Regulations, the potential losses stemming from poor compliance will only increase.

30. *We are concerned that the introduction of competition and self-certification into the building control process has already led to falling standards, and will continue to undermine efforts to raise standards. We urge the Government to ensure that adequate quality assurance, through a system of formal accreditation, is in place to underpin the process.* (Paragraph 6.30)

31. *We further recommend that the Government increase the resources available to local authority Building Control sections in order to assist them both in on-site inspection and in bringing prosecutions for non-compliance.* (Paragraph 6.31)

The Government considers that, with suitable safeguards, the competitive climate created by the approved inspector private sector alternative to local authority building control is beneficial to building control clients and building users, leading to improved service quality. The building control function is the same whether it is carried out by a local authority or by an approved inspector. The Building Control Performance Standards acknowledges the importance of consistent application of the regulations by all building control bodies. The Standards recognise a key factor is success in preventing and rectifying non-compliance. ODPM works closely with both local authority and approved inspector building control bodies to ensure there is operational best practice from all building control suppliers.

The Government considers that the current costs of building control, if ring fenced, should provide sufficient resources to allow the regulations to be implemented in an appropriate manner without an undue cost burden on clients. ODPM repeatedly issues circulars to Local Authorities stating that moneys for building control work should be ring fenced. Since 1999 local authorities have been able to set their own fees for carrying out the building control function. This enables them to better plan the resources needed to fulfil the building control requirement.

32. *With increased design flexibility, and in the absence of clear, mandatory pass/fail tests, or specific requirements for components such as double glazing, the task of monitoring and enforcing compliance with Building Regulations has become almost impossible. We recommend that the Government introduce a series of mandatory tests for completed buildings. In particular, we look to ODPM to abide by its stated intention to introduce mandatory pressure testing for all new buildings.* (Paragraph 6.32)

There are a series of mandatory tests and minimum standards in the proposed Part L revised Regulations that can be easily checked by Building Control Officers and Approved Inspectors. It is proposed that air tightness testing is included as a Regulation, rather than as part of the Approved Documents, and this should ensure greater compliance than was the case with the 2002 Part L.

Although the new National Calculation Methodologies (NCM) allow greater design flexibility, the proposed revisions of Part L include minimum standards for fabric and plant efficiencies, and the software associated with the NCM will provide designers, constructors, and building control, with a list of those elements of a
Construction: skills and training

33. Skills shortages pose a serious threat to the Government’s energy efficiency targets, particularly given the major house-building programme now under way. It is essential that the Government address these issues in a more energetic and co-ordinated fashion than they have done hitherto. (Paragraph 6.39)

The Government agrees that skills shortages represent a major challenge, and Government has licensed ConstructionSkills, SummitSkills, ProSkills and AssetSkills as the Sector Skills Councils (SSC) for the built environment industries, to develop and implement strategies to address their sectors’ skills/training needs. This includes assessing both current skills shortages and the longer-term skill needs that will support competitive and productive employment.

The Government considers that a robust evidence base is essential to ascertain the extent of potential skills shortages in the context of the Government energy efficiency targets. To that end, Government is working with the Sector Skills Councils, and other industry bodies, as part of the Capacity, Productivity and Skills Observatory (Constructing Future Network). Sector Skills Councils are the primary means for feeding industry requirements into all relevant programmes of learning including general and vocational learning in schools, and other programmes such as apprenticeships. Energy efficiency aspects are part of the wider sustainability skills strategy that is being taken forward by the SSCs with industry and with Government support. The Government agrees that a co-ordinated approach is necessary to address these matters.

While there are undoubtedly significant skills shortages in the Construction Industry the figure of 300,000 quoted in the Adult Learning Inspectorate (ALI) report needs clarification. The industry does not now have “300,000 fewer workers than it needs”. It needs, over the next five years, to recruit 300,000 people to replace those retiring or leaving the industry, and to allow for projected growth, a significantly different picture. Additionally the figures quoted in the ALI report for Apprenticeship completions are somewhat dated and while it is acknowledged there is still room for significant improvement, since January 2005, the achievement rate for apprentices under CITB-ConstructionSkill’s own managing agency has been 46 per cent for frameworks completions with 64 per cent of starters achieving National Vocational Qualifications.

Over the last year the construction industry, CITB-ConstructionSkills has been developing one of the first Sector Skills Agreements (SSAs) to address their current and emerging skill needs. SSAs are a core element of the Government’s Skills Strategy that was launched in July 2003. The Construction SSA highlights precisely the priority issues raised by the Committee and others and sets out the key actions that the industry needs to take, working with Government and its main agencies, to address those issues, including joint work with those responsible for delivering training, designing qualifications frameworks.

SummitSkills will start the development of its sector’s SSA within the next few months, which will address the full range of skills issues confronting the Building Services engineering sector.

As an increasing amount of construction activity uses technologies that require fewer and different skill sets, it is important to recognise that while the skills may differ, training will still be essential if they are to diffuse successfully across the industry. CITB-CS is working with a number of house builders and manufacturers to develop their existing skills base; this includes the Smartlife project for MMC (Modern Methods of Construction) housing in Cambridge, Space 4, and work with the concrete sector. CITB-CS has put in place the standards required for qualifications for most MMC systems and an NVQ in industrialised systems will be available from September 2006. Currently MMC makes up only 10 per cent of market therefore any development of new skills required will not happen quickly. Additionally CITB-CS are part of the House Builders Federation research into barriers to MMC (including Skills) that is due to report shortly.

A number of companies, including Bovis are running Skills For Sustainability workshops (with CITB-CS support) for the whole site on sustainability issues. Over the past two years, sustainability has been central to the work of CITB-CS and in November 2003, it secured a two-year secondment from the Environment Agency to help them plan and prepare the organisation to support industry. Last year, CITB-CS commissioned a top-line review, of the main drivers and barriers to change for sustainable development and what that change looks like for the construction sector (Build to last & Reviewing Sustainable Construction 2004).

CITB-CS used the information from this review in consultation seminars, presentations, a survey and in November 2004, a stakeholder workshop to gauge industry and partner views on its findings and on the way forward. The report details key priorities for action over the coming years under four main themes:

— Developing a better understanding of sustainability—what it means in practice;
— Lobbying to create a climate for change to balance legislative pressure and commercial advantage;
— Skills development (across the sector) to translate the words into action; and
— Creation and communication of best practice to speed up the change process.

One part of the delivery of the strategic plan is the Sustainability Skills Matrix for the Built Environment. The Sustainability Forum’s Skills Working Group developed this matrix. It is anticipated that it will also facilitate a coherent approach to sustainability skills development in the built environment.

34. **Skills shortages are compounded by a widespread culture of sloppy workmanship and cost cutting by builders. This must change, and in tandem with improved enforcement of building standards we recommend that the Government strengthen the legal rights of purchasers who acquire poorly built properties.** (Paragraph 6.40)

The Office of Fair Trading welcomed the report and recommendations of HM Treasury’s Barker review of the UK New House Building industry. The review recognised a number of issues/market failures most of which centre around the fact that competition for land is the only way in which new house builders compete. The need to improve quality and the finish of new housing and to improve customer service all round was clearly recognised.

The OFT is working to encourage and to monitor progress in the implementation of the Barker recommendations on consumer matters. In particular, the OFT is encouraging HBF members to participate in an effective code of practice and to adopt fair model contracts in line with OFT recommendations. The OFT is also acting against unfair contract terms where these are brought to its attention.

**Energy Performance of Buildings Directive**

35. **The Government appears to have done little to prepare for implementation of the Energy Performance of Buildings Directive. We fear, for instance, that the Government’s failure to train adequate numbers of inspectors will be used as an excuse for deferring full implementation, or for adopting a narrow, “lowest common denominator” interpretation of the term “public buildings”. We deplore this prospect, and urge the Government both to adopt a broad definition of “public buildings”, and to make preparation for the Directive a high priority between now and January 2006.** (Paragraph 6.45)

The Government announced on 13 September that it would be implementing Articles 3 to 6 of the Directive (the adoption of a calculation methodology and setting performance requirements for new and existing buildings) as part of revisions to Part L of the Building Regulations to come into force in April 2006.

There will be a further announcement in the autumn about implementation of the other substantive requirements in Articles 7 to 10 of the Directive (building certification and boiler and air conditioning inspection). The ODPM is actively developing proposals for implementation following the formal consultation in 2004 and further close engagement with stakeholders. However, the Government has already signalled that it is minded to seek the development of a system of nationally recognised qualifications for those wishing to practise as building, boiler plant and air conditioning plant energy surveyors, and to use the extra time the Directive permits to work with the stakeholders on a phased programme of implementation.

On display of certificates in “public buildings”, the Government are implementing the requirements of the Directive. It is clear from the Recitals in the Directive that the drafters saw the public sector as leading the way. In addition to that, the Government is considering how application might best be widened to for instance the retail and hotel sectors.

36. **Energy Performance Certificates could potentially be as influential in improving building standards and advancing the Government’s energy efficiency objectives as “Investors in People” accreditation has been in promoting good management practices. We therefore urge the Government to give careful thought to the design and display of certificates.** (Paragraph 6.46)

It is accepted that Energy Performance Certificates could provide an important driver for improvement, but it is essential that the certification process is practical, meaningful and transparent.

ODPM is actively involved in the CEN activities (Comité Européen de Normalisation—or European Committee for Standardisation) that are developing the technical standards that will underpin the implementation of the Energy Performance of Buildings Directive, including the one on certificate design. It is also contributing to the European “EPlabel” project that is exploring the opportunities for standardising certificate content and appearance. The Government’s assessment is that the UK is in the leading group of nations in terms of preparation for implementation.

The way forward on this will be addressed in the statement referenced in the Government’s response to recommendation 35.
The scope for improving building standards

37. The scope for improving the energy efficiency of new buildings in the United Kingdom is clear. However, although there have been individually impressive projects such as the BedZED development in Sutton, many more such projects will be needed before it is clear what approach yields the best results. Indeed, the best approach may differ between the north and south of the country. (Paragraph 6.55)

38. Modern Methods of Construction have proved to be a cost-effective way to achieve high levels of build quality and energy efficiency in many parts of the world, particularly in colder climates, and we support the Government’s aim to introduce them more widely in this country. However, in certain circumstances, particularly in larger commercial or office buildings, or possibly in warmer parts of the country, the cooling effects of high thermal mass may yield better results in terms of overall energy use. We urge the Government, particularly in its role as a major procurer of new building, to show leadership in promoting innovation on the part of a largely conservative industry. (Paragraph 6.56)

As the Committee recognises, the Government, in the context of achieving sustainable communities, is actively seeking to accelerate the adoption of innovation to deliver energy efficient buildings that incorporate high levels of design quality and functionality. MMC has a vital part to play in delivering these buildings and the Government has already put in place policy to ensure that there is wider adoption of MMC in public sector procurement.

For example, the Housing Corporation already imposes conditions on most housing grants to incorporate at least 25 per cent MMC product and English Partnerships target 25 per cent MMC across both social and private housing. In the context of achieving more efficient construction processes, the ODPM is currently working in partnership with English Partnerships on the “Design for Manufacture” competition. Whilst it is important that the competition was open to both traditional and modern methods of construction, the Design for Manufacture competition will showcase how to build cost-effectively and at good quality across a range of housing types. The competition will focus on capturing the benefits from modern construction and on stimulating public discussion about what Homes for the 21st Century should be like, and aims to help industry move from repeated research and demonstration projects to mainstream quality modern construction.

Government recognises that the MMC industry is currently fragmented and lacks cohesiveness and clarity of message. In response, the DTI is supporting under its “Research and Innovation” programme, Buildoffsite an organisation composed of leading organisations and key client groups to provide leadership to the offsite construction industry. HMT Treasury Barker “Review of Housing Supply” March 2004 recommended that the Home Building Federation and NHBC developed a strategy to address the barriers to increased take up of MMC. DTI, ODPM, the Housing Corporation and English Partnerships (and 60 other organisations) are active in this work, which is due to report in the Autumn 2005.

The diversity of modern construction solutions offering a range of benefits provides flexibility of choice to the market and therefore Government does not promote any individual solution. However, Government strongly supports the underlying message that informed stakeholders take an holistic approach to their construction and select the most appropriate solution for their precise circumstances and the one that represents the best overall value. Government also recognise that even with increased adoption of MMC significant volume of “new-build” and refurbishment will be delivered by processes that incorporate high-levels of traditional building techniques. Government is keen to promote the wider adoption of innovation, best practice and improved performance to improve the quality, efficiency and cost effectiveness of these buildings.

The Government recognises that the “change agenda” will require nurturing and are actively supporting the activity programme of Constructing Excellence and its constituent specialist body Housing Forum to lead the industry change process.

Existing Buildings

Energy efficiency commitment

39. We urge the Government to consider further fiscal incentives to encourage private and social sector landlords to invest in energy efficiency. We welcome the announcement in the 2004 Budget that the Government would give consideration to a “green landlords” scheme, and look forward to further progress on this proposal. (Paragraph 7.19)

The Government is committed to promoting investment in energy efficiency in the private rented sector and recognises the role that fiscal incentives can play as part of a package of measures. For this reason, the Landlords’ Energy Savings Allowance (LESA) was introduced in 2004 to support investment in cavity wall and loft insulation, and extended in 2005 to cover solid wall insulation. As part of its consideration of a Green
Landlord Scheme, the Government is exploring how other tax deductions and reliefs, including the existing Wear and Tear Allowance, might be developed to encourage and reward landlords who take steps to improve the energy efficiency and quality of their property. In Budget 2005 the Government announced its intention that discussions take place with stakeholders on this proposal during the summer, and these are duly underway.

40. *We are concerned that the methodology for calculating the carbon benefits of the Energy Efficiency Commitment is so lax, and so poorly supported by hard data. While we support the data monitoring being undertaken by the Energy Saving Trust, we also recommend that the Government take steps to oblige energy supply companies to collect specific but anonymised data on energy use and make them available to the research community.* (Paragraph 7.22)

The Committee will wish to note that it was Defra that commissioned the Energy Saving Trust’s most recent monitoring exercise, following transfer of responsibility for setting EEC targets to Defra. Following EST’s original studies which showed that customers’ actual gas savings from insulation were only 50 per cent of the theoretical values, for both lower and higher income groups, Defra has commissioned several follow-up studies to try to understand the reasons.

Defra has also held a research seminar in September 2004, involving the Energy Saving Trust, the Building Research Establishment, Carbon Trust and leading academics, at which these issues were discussed. Issues that are, or will be investigated include:

- Temperature increases following insulation;
- Current heating patterns of householders;
- Performance in situ of insulation;
- Balance of heating and hot water;
- Use of supplementary heating;
- Possibility of transient comfort-taking effects immediately following installation.

Such field studies are inevitably time consuming, expensive, are usually confined to the winter months, and often raise as many new questions as they answer.

The Government currently does not have the powers to oblige energy suppliers to provide the consumption information recommended by the Committee but agrees to explore options for improving the information available on energy consumption in buildings in order to aid understanding of patterns of energy use in buildings and to promote actions to reduce consumption in the buildings sector.

41. *There is a risk that solid-walled houses, the least energy efficient, will not benefit from the Energy Efficiency Commitment. The development of cheaper and less intrusive insulation for such properties is a key priority for future research.* (Paragraph 7.24)

The Government fully agrees with the Committee that solid walled houses need to be a key priority for future research. The Energy Efficiency Commitment (EEC) 2005–08 is expected to drive a significant amount of energy efficiency activity in the domestic sector. As such it could be an effective way to pull forward new technologies and products into the market.

The Government is keen to support the development of new and innovative ways to achieve our energy efficiency aims and the current phase of EEC thus includes an incentive for suppliers to use and develop innovative approaches. In addition Government provides funding to both the Energy Saving Trust and Carbon Trust to support their work on research and development of innovative measures for energy efficiency in the household sector.

The Carbon Trust continues to explore avenues for effectively rolling out such research and we will continue to support the Carbon Trust alongside our spectrum of research investments on ways to improve the energy efficiency of existing housing more generally.

*Heritage*

42. *We recommend that the Government review the guidance issued to planning authorities with a view to developing a more flexible approach to energy efficient refurbishment of older buildings.* (Paragraph 7.27)

ODPM has worked closely with English Heritage as part of the 2002 and proposed 2005 reviews of Building Regulations Part L, where the agreed aim is to improve energy efficiency where and to the extent that is practically possible, always provided that the work does not prejudice the character of the historic building
or increase the risk of long-term deterioration to the building fabric or fittings. The Government will take this recommendation into account in considering a revised Planning Policy Guidance Note 15 at an appropriate point in the future.

Demolition and refurbishment

43. We recommend that the Government review its strategy on demolition of poor quality housing. (Paragraph 7.29)

The Government does not have a strategy for the demolition of poor quality housing. However, in terms of addressing poor quality housing ODPM have a PSA target to make all social housing decent by 2010 and to increase the proportion of vulnerable households in the private sector, including families with children who live in homes that are in decent condition. In order to be considered decent, homes will have to pass the thermal comfort criterion, which requires that they have both effective insulation and efficient heating. Social landlords or authorities may take local decisions to demolish non-decent homes, particularly where demand is weak. Nine housing market renewal pathfinders have been set up by ODPM to tackle areas of housing where demand has been very weak. Their programmes involve a mix of refurbishment and, where refurbishment has already been tried and failed, or where there is a clear and well-evidenced need for a better mix of housing, some demolition.

The Government are also introducing the new Housing Health and Safety Rating System (HHSRS) later this year to replace the Housing Fitness Standard. HHSRS is an evidence based risk assessment procedure and where category 1/serious hazards are found in a property the local authority will be under a duty to take action against the property owner or landlord. In extremely serious cases this could include demolition. HHSRS will be a powerful tool in helping local authorities deal with poor quality housing, particularly in the private rented sector.

44. We welcome the Government’s commitment to arguing within the Council of Ministers for further revision of VAT rules in order to stimulate energy efficiency. However, the changes that have been agreed so far, such as the reduction of VAT on micro-CHP, are relatively peripheral. Far more important is the perverse effect of the current application of the full rate of VAT to building extension and refurbishment. We recommend that the Government redouble its efforts to persuade the European Union of the need to give strong fiscal signals to encourage energy efficient refurbishment of existing buildings. (Paragraph 7.36)

45. We welcome the consideration that the Government have been giving to extending Building Regulations to cover existing buildings. However, in order to avoid creating a disincentive to building improvement, we recommend that the cost to property-owners of any extension of regulation in this area be offset by financial incentives such as a reduction in VAT. (Paragraph 7.37)

The Government’s flexibility to introduce reduced or zero rates of VAT is governed by long-standing agreements with our European partners. These agreements currently allow the UK to zero rate the construction and sale of new residential buildings and conversion of non-residential into residential buildings for housing associations. However, they do not allow the Government to extend its zero rates or introduce new ones.

European law currently allows Member States to apply a reduced rate of VAT to some refurbishment services. To date, the Government has chosen to introduce reduced rates where it is convinced that they offer the best-targeted and most efficient support for our objectives. The Government has implemented the reduced rate for residential conversions (that change the number of homes in a building) and the conversion of non-residential buildings to residential ones. Additionally, where a home has been empty for at least three years, the reduced rate applies to renovation and alteration work. These measures target relief at areas of specific need and seek to support the Government’s urban regeneration and domestic energy efficiency objectives. The reliefs also make an important contribution to the availability of affordable housing.

The current EU review of reduced rates has been under discussion for over two years and changes to EU law in this area can only be made with the unanimous agreement of all 25 Member States. So far, Member States have not been able to reach agreement because of the highly divergent views on the use of reduced rates. However, the negotiations are ongoing.
The public sector

46. We welcome the Government’s targets for sustainable development in the Government estate, in particular the announcement that they will procure only buildings in the top quartile of energy performance for the central Government estate. We agree with the Government in believing that this will have a marked effect on the wider commercial property market. (Paragraph 7.42)

47. However, uncertainties remain over the coverage of these targets: for example, the target for central Government energy use contained in the Action Plan is not in itself adequate, given the huge size and the diversity of the public estate. We therefore look to the Government to extend their initiatives on procurement and energy use to all parts of the public estate as soon as possible. (Paragraph 7.43)


The Government has committed to review the Framework during 2005. The review will be wide ranging and look at issues such as resources, wider participation and data collection. It will also include consideration of the reasons for variations in Departmental performance against Framework targets.

The Government has also committed to adopt the code of sustainable buildings, which will set a standard above current building regulations for energy, water and waste. This will be effective from April 2006; with all new homes receiving Government funding (ie directly, through Government Agencies, or public-private partnerships) required to be built to this standard.

In May 2005, Government appointed a business-led Sustainable Procurement Task Force to develop a national action plan for Sustainable Procurement across the public sector by 2006. The aim is to bring about a step change in public procurement such that, by 2009, the UK is recognised as amongst the leaders across the EU.

The Government has also made a commitment to embed sustainable development into the existing Office of Government Commerce (OGC) and NHS Purchasing and Supply Agency and to work with key markets and key public sector suppliers to raise their sustainability understanding and performance, using existing business support programmes where appropriate.

Finally, the Government backed Action Energy programme also provides free impartial advice and assistance to individual trusts to help them address their energy efficiency targets and objectives. This includes advice on all issues of energy management and staff awareness and motivational campaigns and information on the technical performance of all building components and procurement.

Developing Markets for Heat

48. We recommend that ODPM encourage local authorities and developers to incorporate community heating as standard in all new build projects. (Paragraph 8.9)

Planning Policy Statement 1: Delivering Sustainable Development indicates that development plan policies should seek to minimise the need to consume new resources over the lifetime of the development by making more efficient use or reuse of existing resources, rather than making new demands on the environment. It advises that regional planning authorities and local authorities should promote community heating schemes and the use of combined heat and power.

49. We endorse the recommendation of the IPA study that the Community Energy Programme be extended. However, we note that the programme has had limited impact so far, and that commercial barriers to the take-up of heat provision must also be addressed. (Paragraph 8.14)

The full £50 million of the original programme has now been allocated and the extension of the programme to March 2008 has been secured with £10 million of new money. The nature of the capital schemes approved, often requiring the laying or refurbishment of heat pipes and the attendant need for planning permission to

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7 www.sustainable-development.gov.uk/delivery/global-local/ProcurementTaskForce.htm
do so, means that only around half have started work. Hence the limited impact to date. However, the approved schemes are expected to save around 25,000 tonnes of carbon per year by 2010 whilst helping more than 50,000 people on low incomes heat their homes more economically. This will be assisted by levering in £125 million in funding for these schemes from other sources. These expected outputs are lower than those we had expected when the programme was set up, at a time of more advantageous energy prices, but nonetheless represent a significant impact of the lives of those who benefit from the programme.

Although the programme supports a proportion of the upfront capital costs for community heat projects, it does not remove all the risk for the target audiences. Public sector organizations are risk adverse and therefore find it hard to commit to high initial capital costs where risk exists. The programme has produced a finance guide specifically for community heating schemes, providing examples of suitable finance models—eg setting up Energy Services Companies or PFI contracts.

Other significant barriers are also difficult to address and include historical influences where district-heating systems developed in the 50s and 60s received a bad reputation for poor performance. The alternatives to community heating are often simpler to implement. To address this, the programme provides heat maps showing the potential for heat provision through community heating in the UK. Information on “heat demand densities” is available on the website. This service is backed up by a handholding technical advice service funded by the programme. Potential clients can utilise this service to establish the feasibility of a given scheme, to receive help with an application for funding to the programme, and to provide ongoing support through the project implementation.

50. It is time for the Government to progress from analysis to action in promoting markets for heat, particularly from renewable sources, and we so recommend. (Paragraph 8.18)

The Government notes the Committee’s conclusions about the additional benefits that may arise from the promotion of renewable heat. A study Commissioned by Government is currently undertaking careful analysis and consideration of the renewable heat and CHP market and as part of this is looking to quantify the carbon benefits which might be gained from renewable heat and the extent to which support is required. This study will be published in due course. The Government will consider, based on findings relating to the amount of renewable heat that might come forward if barriers were removed, and the amount of carbon that could be saved, the various options for supporting renewable heat. We will look carefully at the study to assess the various options for supporting renewable heat, including the option of a Renewable Heat Obligation.

This Government is keen to support the substitution of biomass for fossil fuels for heating, combined heat and power, electricity and transport biofuels, as this will significantly reduce carbon dioxide emissions. We are working with farmers and industry to develop markets and promote uptake of bio-energy from purpose-grown energy crops, forestry and other sources such as biodegradable waste. Electricity suppliers are required to source 15 per cent of their electricity from renewables, including biomass, by 2015. Government is working to develop end uses. £66 million has been allocated to develop dedicated biomass heat, combined heat and power, and electricity generation plants. Co-firing of biomass with fossil fuel in conventional power stations is developing and several power stations are making arrangements to take purpose-grown energy crops. The Government set up a biomass study task force, led by Sir Ben Gill, to identify the barriers and to recommend ways to overcome the problems. The report is due in October 2005. The Government will take the recommendations of the Biomass Taskforce into account when considering future support. Support to farmers supplying bio-energy crops are already provided through:

— Grants to establish energy crops and to develop producer groups and supply chains for energy crops and woodfuel;
— Farmers can receive the Single Payment for crops grown on set-aside or where the 45 euro per hectare energy aid payment is claimed on non set-aside land;
— Research is being undertaken to improve disease resistance and yields in crops and to develop specialist machinery.

In addition, DTI and the Big Lottery Fund have provided £4.2 million funding for the installation of biomass boilers in 11 clusters throughout the UK. DTI’s Clear Skies Initiative also offers funding for biomass boilers.

51. We recommend that the Government explore the application of the Energy Services model to community heating. In particular, we believe that the establishment of the London Climate Change Agency offers a unique opportunity to apply such a model on a large scale, with corresponding gains in energy efficiency and emissions. (Paragraph 8.22)

8 http://www.est.org.uk/housingbuildings/communityenergy/essential/opportunities/
This Government is supportive of promoting energy services and community heating for their ability to help generate substantial carbon and long term cost savings. More detailed information on Government’s actions to promote energy services and community heating are set out in our response to recommendations 18 and 48 respectively.

The Government agrees that the London Climate Change Agency, established by the Greater London Authority (GLA) in June this year, will play a useful role in focusing efforts for action against climate change in London and in helping deliver against the target set in the Mayor’s Energy Strategy, including: a 20 per cent reduction in CO2 emission from 1990 levels by 2010; one zero-carbon development in every London borough by 2010 and improving the energy performance of existing commercial and public buildings. This will help the UK in its overarching efforts to deliver on its climate change goals.

The Government recognises that there are useful linkages in the promotion of community heating and energy services. As community-heating schemes operate with a centralised plant, the energy services approach, by which an organisation contracts out the provision of its energy services to an Energy Services Company, (ESCO) fits well. Community Energy projects are by definition large infrastructure schemes with very large up front capital costs. The Energy Services approach allows the public sector to devolve risk (and profit) to the private sector with finance off-balance sheet. In addition, community heating benefits from the ESCO structures, which can vary widely, including a private sector company; a partnership between the public sector and the private sector and a not-for-profit company where the public sector client owns and underwrites the company.

To this end, through our Community Energy Grant Programme, the Government have supported a development study by the Greater London Authority, which has looked at the potential for community heating across London, and recommended several sites that could be of particular value for developing large-scale projects.

The Government agrees that the potential for development of Energy Services and Community heating in London does indeed exist and that the GLA and the London Climate Change Agency have the potential to act as a useful focal point in helping boroughs deliver the community energy potential in London. The Government welcomes this initial scoping work, which we hope that the London boroughs will use carefully, to fully consider the cost-benefits of taking the recommendations forward.

APPLIANCES

European Union product standards

52. Product labelling, to be effective, must be dynamic, reflecting technological innovation and product improvement. The EU energy labelling scheme, for all its past success, is in danger of becoming outdated and inflexible. The decision to introduce “A+” and “A++” ratings fundamentally undermines the scheme’s integrity, while European product standards lag behind those in the far East and North America. (Paragraph 9.12)

53. We therefore urge the Government to use their forthcoming EU Presidency to engage with the European institutions and Member States in strengthening and extending the mandatory labelling scheme. This process should include an investigation into whether the EU Commission has sufficient resources to implement and update the scheme adequately. It should also include consideration of comparable schemes elsewhere in the world, such as the Japanese “top runner” scheme, and their applicability within the EU. (Paragraph 9.13)

54. We welcome the Government’s commitment to securing agreement to the Eco Design of Energy Using Products Directive, and look forward to progress in this area. We recommend that the provisions of the Directive be used to establish challenging minimum standards for a wider range of energy using products. (Paragraph 9.14)

The Government fully supports the Committee’s view that the EU’s Mandatory Energy labelling scheme, which has to date proved to be extremely successful, now needs to be strengthened and extended. This has been reinforced by evidence gathered during the course of the Energy Efficiency Innovation Review and we are already fully engaged with the Commission’s review of this area.

The Government will continue to work, via the Government’s Market Transformation Programme (MTP), to identify UK priorities for action under the review. These include extension of the scheme to a wider range of products, improving compliance requirements and consideration of how the scheme can be made more dynamic to take account of technological innovation and product improvement.

The decision to permit the use of A+ and A++ labels for cold appliances was a purely pragmatic one intended to enable manufacturers to differentiate between their best performing appliances under this 10-year-old label. This one-off decision was necessary, as the current regime does not contain the necessary flexibility
to enable existing labels to be revalorised in a timely way. This is an issue that we are seeking to address in the
review of the energy-labelling scheme.

While the Government would agree that standards for some products in the EU do lag behind some other
parts of the world this is not true for all products. The principal policy measure available to tackle this issue
is the recently agreed Framework Directive on the Eco-Design of Energy Using Products (EUP) which will
establish the criteria and a formal mechanism for placing mandatory requirements on manufacturers to take
into account environmental aspects at the design and development stages and, thereby, to improve the end-
use performance (e.g., energy efficiency) of Energy-Using Products placed on the market. EUP will also
stimulate industry self-commitments to improve products.

Government fully supports the EcoDesign directive and is actively working with the Commission and other
Member States to identify priority products and standards that are challenging and progressive (i.e., standards
which improve year on year and are developed with industry in advance to enable them to optimise the returns
from investment in eco-design innovation). While the first mandatory implementation measures are unlikely
to arise before 2008 the UK can claim to be leading worldwide in its active pursuit of standard setting in a
range of other initiatives. These include:

— Industry voluntary agreements (notably Code of Conduct for Digital TV Services, TVs and power
  supplies, minimum fleet averages for white goods etc);
— Embedding product standards into Building Regulations;
— Product endorsement via schemes such as the Energy Saving Trust’s Energy Saving Recommended
  logo (previously known as Energy Efficiency Recommended);
— Enhanced Capital Allowances and the Energy Efficiency Commitment;
— Exploring the potential to harmonise and raise product standards internationally.

The Government would also agree that the level of resources put into this area by the EC to date have been
insufficient. The Government will therefore be seeking to ensure that adequate funds are made available to
take this agenda forward. Early indications including the Commission Green paper are that this is starting to
be addressed. The Government is putting increasing resources into its own standards and labelling policy, as
a central plank of Defra’s Sustainable Consumption and Production policy framework “Changing Patterns”.

The EUP establishes a similar approach to that used by Japan in their top runner scheme in that the regulatory
committee established under EUP will need to take account of the best appliances on the market before
establishing product standards.

In parallel, the Government is progressing standards and labelling via the G8 and other high-level
international channels, for example through practical co-operative projects to develop technical standards
with China.

55. We also urge the Government to argue the case for extending the existing, standardised labelling scheme to
a wider range of products, including IT equipment and televisions. (Paragraph 9.15)

The Government agrees with the Committee’s recommendation that standardised labelling should be
extended to other products where it is appropriate to do so. The emerging conclusions of the Energy Efficiency
Innovation Review further reinforce this. To this end we are fully engaged in the review EU mandatory
labelling scheme and have been actively arguing for the extension of the scheme to have the same scope as that
of EUP—i.e., all energy using products other than transport.

However, there are considerable difficulties associated with establishing rigid regulatory labelling systems for
rapidly evolving products such as consumer electronics and IT in that regulatory frameworks often cannot
keep pace with the rapid rates of technology and product evolution (e.g., PCs becoming home entertainment
centres; phones becoming cameras etc).

In this environment, it may be that schemes devised with suppliers offer a mechanism better able to respond
to such technology change, without stifling innovation. Hence the Government will continue to pursue a range
of labelling and consumer information options.

56. The Market Transformation Programme is too reactive, too nebulous in organisation and working methods,
and too unfocused in its objectives and measures of success. We therefore recommend that the Government review
the effectiveness of the MTP, with a view to giving more dynamic and effective leadership to the process of market
transformation. (Paragraph 9.21)

The Government does not support the Committee’s view that the Market Transformation Programme is too
reactive but agrees that there is scope for a more proactive approach in some areas. The MTP focuses on
longer-term strategies for delivering more resource-efficient goods and services, primarily through policy
measures that drive innovation and competition. So, for example, policies such as energy labelling, product
standards development and voluntary agreements with industry are especially powerful in influencing manufacturers to design, market and produce in volume the more efficient products we need. Indeed, with increasing globalisation, our ability to deliver more and more efficient products to the UK market will depend on our ability to influence and to set standards for international industries.

The Government has been very proactive in establishing MTP in the first place—to provide a focus for discussions with industry about how quickly improved products can be developed, marketed and brought into use—and what UK, EU and international policy is needed to support or speed that process. For example, fifteen years ago the market for domestic appliances was dominated by very inefficient products with industry arguing that energy efficiency was not a competitive issue for appliances such as refrigerators and washing machines where consumers were more interested in features, colour and price. Government policy has completely transformed this market attitude with a commitment to mandatory energy labelling and minimum standards that have promoted the best and removed the worst products from the market. Industry has responded positively by competing strongly to bring forward even more efficient products.

Increasingly the Government will need to get early warning of the risks to our policy posed by new products and services which, if not regulated in some way, can suddenly take away the hard-won savings of other programmes. An example would be the rise in consumption due to electronic products such as digital TV set-top boxes, and air conditioning. The Government are gearing up the Market Transformation Programme (MTP) to give us early warning and to come up with suitable policy options. Increasingly, those policies will involve negotiating at EU and international level, to set standards which will encourage industry to produce better products.

The MTP has proved to be a highly effective way of getting results. By building consensus at an early stage in policy development and signalling our intentions well in advance we are able to develop low cost policy measures that help to avoid the need for more costly policy interventions later.

A good example of this is the work that MTP has undertaken to encourage the development of more energy efficient set top boxes. By developing a forward projection of the number of digital set top boxes in the UK the MTP was able to identify that there was a risk of a significant increase in UK energy consumption from the increasing number of digital set top boxes being installed in UK homes. This projection was then agreed with manufacturers who informed us that it was possible to mitigate this projected increase by installing power management features into their products at no extra cost but pointed out that what they produced was controlled by the specifications they received from the providers of digital TV services such as BskyB and NTL. Therefore MTP opened negotiations with these providers who subsequently agreed via an EU wide industry self commitment to establish minimum performance standards for these appliances. The Government estimate that by itself this agreement has enabled the UK to avoid increased carbon emissions of around 400,000 tonnes of carbon per annum at virtually no cost. Units in over 50 per cent of UK homes now consume half the power of their equivalents in many European countries and the USA. Current UK annual electricity savings from these standards are estimated at over 0.7 TWh per annum.

The recent increase in the funds available to MTP will enable it to more proactive in more areas, moving from a technically based research programme to becoming more proactive in outreach and stimulating change.

The Government acknowledges that product policy, and thereby MTP, could be perceived as nebulous. This is at least in some part due to the complexity of the area, involving such a wide scope of possible products, stakeholders, influencing factors and policy measures. However, management procedures in the MTP have ensured that information, aimed at assisting policy development, is collated and published in a consistent fashion via policy action plans and supporting documents and databases.

In terms of measuring success the independent review of MTP carried out by UK energy expert John Chesshire validated the approach developed under MTP and called for additional resources to be made available to the programme in order to carry on the depth of coverage for existing product groups and to broaden the coverage across other areas. It also called for a better integration of product-related approaches with other policies and programmes for energy savings in the UK.

Support for the MTP approach has also been echoed by the Government’s Advisory Committee on Consumer Products and the Environment (ACPPE) who have called for the Government to “extend the work of the Market Transformation Programme so that its approach can be applied to different impacts and a wider range of products than its current focus on the impacts of energy-using products”.

The Government are developing a methodology to quantify the value for money and impact of MTP. The results of the assessment will be available in early 2006. Benefits of the Programme include its ability to identify and address future market environmental risk, and evaluate the benefits of proposed actions designed to offset these risks before they arise. In the case of external power supplies and chargers, for an estimated Government cost of £75,000 to establish standards, the resulting UK saving in energy is expected to be over £75 million.
The more proactive stance referred to above will help to provide the more dynamic and effective leadership that is necessary to stimulate market transformation.

57. The fast-growing, diverse market for consumer electronics presents a serious risk of uncontrollable rises in energy consumption. The Government's reliance on voluntary codes and best practice guidelines, while it may deliver improvements in certain areas, is a piecemeal and fundamentally inadequate response to this threat. We therefore recommend that the Government examine the feasibility of setting minimum standards for this sector, as well as requiring better information for consumers, for example on standby power consumption. (Paragraph 9.28)

The Government fully agrees that the consumer electronics market poses a serious risk, and that policies currently in place are not keeping pace with market developments. Tackling this risk, which arises from diverse products, will require a broad range of policies, including regulatory and voluntary measures. These measures must work in concert, “joined-up” policy, rather than being piecemeal.

The Government identified consumer electronics risks as far back as 1999, and was instrumental in establishing voluntary agreements with industry on standby electronic appliances and chargers, with the predicted level of standby for the overwhelming majority of new products being 1W within five years.

The UK Government, via MTP has been instrumental in addressing risks from digital set top boxes, external power supplies (eg phone chargers). We are now actively pursuing agreements on broadband equipment, power management protocols (so that products use the minimum power required for a given functional commitment), and automatic shutdown for interconnected products (such as DVD players when the TV is turned off).

In terms of consumer information, buyer priorities when selecting consumer electronics products are entirely driven by performance specification; market research has shown no interest in power consumption, hence the Government’s focus on performance standards with manufacturers.

As previously discussed, regulatory minimum standards cannot keep pace with this high pace of electronic product evolution. By the time a standard came into force, the market will have developed a new generation of product no longer meeting the legal definition.

58. The projected trebling over the next 20 years of the floor area in commercial or office buildings that is air-conditioned has serious implications for future energy consumption. We welcome the willingness of the air conditioning industry to engage in discussion on minimum efficiency standards and the development of Building Regulations, and recommend that the Government address these issues as a matter of urgency. (Paragraph 9.31)

The issue of energy demand for air conditioning in commercial/office buildings was recognised in the 2002 amendment of Part L, when performance standards for air conditioning were introduced for the first time. The issue is again recognised in the proposals for amending the standards in 2006, where the required improvement in energy performance for air-conditioned spaces is significantly more than for non-cooled buildings.

INDUSTRIAL ENERGY EFFICIENCY

Climate change instruments affecting industry

59. We agree with our witnesses that the multiplication of schemes to promote industrial energy efficiency has been poorly planned, and is likely to be burdensome and bureaucratic. We urge the Government to make a long-term commitment to consolidating these various schemes under the EU Emissions Trading Scheme, which is likely to be the most cost-effective route to emissions reductions. (Paragraph 10.16)

The UK has put in place a number of policy measures at national level, including the Climate Change Agreements (CCAs) and the UK emissions trading scheme (UK ETS), to take the lead in developing policy instruments to drive down business sector emissions. The introduction of the EU Emissions Trading Scheme (EUETS) earlier this year will mean that overlapping policy measures will cover some business sector emissions, at least for Phase 1. Therefore we are working with industry and other key players, including the Carbon Trust, to consider as part of the Climate Change Programme review the future policy mix of measures impacting on business.

It is important to recognise that although the EU ETS will be the most significant policy measure in the future policy mix, it is unlikely to cover the full range of industry and commerce and therefore may not on its own be sufficient to deliver the full potential of emission reductions from business. There may be a case for maintaining existing national policy measures, in particular CCAs and the UK ETS, possibly in a revised form, to ensure that the full potential for business sector emission reductions is achieved. However, we also
recognise that some business stakeholders, alongside the Committee, have argued for greater simplicity and streamlining of instruments aimed at the business sector in the wake of the EU ETS, and this will also be an important consideration in our deliberations.

60. We view the Government’s apparent support for “white certificate” trading with serious concern: the introduction of yet another set of trading arrangements, incorporating yet another measure (in this case, targets for energy efficiency) is a recipe for still more confusion. What is needed is a period of policy consolidation and clarification, not the over-layering of existing policies with new targets and incentives. (Paragraph 10.17)

61. Energy-intensive manufacturing industries have contributed a disproportionate share to the reduction in United Kingdom carbon emissions. They continue to be subject to strong international competition, along with rising energy prices and a raft of regulation. There is a serious risk that much of this industry will simply be driven overseas, contributing to a net increase in global emissions. We therefore look to the Government, in the interests both of the economy and the environment, to take full account of the ongoing competitiveness of these sectors within global markets when they consider further climate change targets. (Paragraph 10.29)

62. At the same time, there is considerable potential for energy saving by the commercial sector and SMEs, which have so far been overlooked. Reaching SMEs will be a challenging task, but it is one the Government appear to have shied away from. We recommend that the Government urgently explore ways to encourage reductions in energy use by SMEs. (Paragraph 10.30)

The existing Energy Efficiency Commitment (EEC) already permits trading between obligated suppliers, either of EEC obligation or of accredited measures, but suppliers have not used this option to any great extent. It has been suggested that the creation of a more open, transparent market would create new opportunities and give an incentive to other parties to engage more proactively on the promotion and delivery of household energy efficiency measures. In Defra’s five-year Strategy (Nov 2004) the Government committed to examine the role which tradable white certificates could play in promoting a further improvement in energy efficiency, as part of the next phase of the EEC.

The Energy Services Directive, currently under negotiation, raises the possibility of introducing tradable certificates (White Certificates) as a way of encouraging improved energy efficiency. UK is engaged in international work on White Certificates. Firstly through the IEA Demand Side Management programme task 14 on market mechanisms for energy efficiency. This Task is due to report in late 2006. And also through the European Commission’s EuroWhite Certs project, which will report in stages over 2007–08.

Defra has recently initiated a research project to evaluate the potential to introduce new market-based mechanisms to deliver energy efficiency, with a focus on households and sectors outside the EUETS and CCAs. It will need to consider the benefits and costs of such mechanisms, and consider the key technical and policy issues of their implementation, including their fit with the existing policy framework such as the EU and UK emissions trading schemes, the EEC, CCL and CCAs.

Specifically, on the service sector and SMEs, this gap in the Climate Change Programme policy package was recognised in the Energy Efficiency Action Plan published last year, and has led to very active consideration through the Energy Efficiency Innovation Review.

While the Government cannot prejudge the outcome of the Climate Change Programme Review at this stage, we recognise that the whole economy needs to make a contribution if the UK is going to make the transition to a low-carbon economy. The Government are looking very carefully at how other sectors can pull their weight—in areas like the commercial sector and SMEs, where the current package of measures does not seem to be strong enough. And the Government will be taking account of the implications for international competitiveness where policies impact on the energy intensive sector.

The DTI and Ofgem have been discussing the issue of rising gas prices with the Energy Intensive Users Group (EIUG) since the New Year in the Gas Prices Working Group. This group had the remit to develop ideas to improve the operation of the forward market. Activities supported by the group included commissioning an independent consultant to analyse the forward market and holding a seminar for key stakeholders in the gas chain. The group has now produced an Action List of recommendations for the short and medium term, including measures to maximise gas supplies, encourage demand side response and pursue energy market liberalisation on the European Continent.

Forward prices are not a prediction of future outturn prices and, in the medium term, new import infrastructure should ease the supply/demand tightness contributing to high UK gas prices at the moment. However, more importantly, it is not fair to assume that—even if heavy industry did move out of the UK—it would increase its emissions in another country. This is a legitimate concern, but clearly as long as they are relocating to the EU, they face all the same environmental restrictions as UK companies. If they are moving outside the EU, they may still face an economic incentive to be environmentally responsible (eg if building new
plant, why build something that is energy inefficient?). Rising fuel prices is of course, only one of the factors that may cause companies to move production away from the UK.

63. The dispute over the United Kingdom National Allocation Plan has potentially serious consequences. However, while we have sympathy with the views of the CBI, we cannot help concluding that this is a crisis of the Government’s making, which adds to the difficulties faced by industry in long-term planning. We urge the Government to seek a rapid resolution to this dispute, even at the expense of some compromise. (Paragraph 10.31)

The Government has made clear in the provisional National Allocation Plan (NAP), submitted to the European Commission in April 2004, that the total quantity of allowances to be issued was provisional and would be reviewed in the light of ongoing work on the energy projections, the review of Climate Change Agreement targets for 2006, the receipt of verified data from operators and any potential changes in fuel intensity for the iron and steel sector. The Commission accepted this.

The Government considers that the proposed amendment notified to the Commission in November 2004 (seeking an additional 20 million allowances for UK installations) is compatible with the relevant Community legislation. Following the Commission’s refusal to consider an amendment, the Government decided to initiate legal proceedings against the Commission that seek to require the Commission to consider the substance of the amendment. The Government made every effort to ensure a rapid decision from the Court, and our application to the Court of First Instance (CFI) was granted expedition on 15 June. We hope to receive a judgment in the first half of 2006.

The Government has decided to allocate 736 million allowances to installations, which the European Commission has already approved, whilst preceding with the legal challenge against the Commission. This enabled UK operators to begin participating in the Scheme as soon as possible. We also indicated at an early stage that the allocation to the Electricity Supply Industry (ESI) sector would be reduced to account for the lower level of allocation, because it is more insulated from international competition than other sectors. The Government recognised that taking allowances from other industrial sectors would have a greater impact on UK competitiveness as these sectors are more exposed to international competition than the ESI sector, and in particular competition from producers unaffected by the EU Emissions Trading Scheme.

64. We further recommend that the Government re-examine the allocation of carbon allowances to individual industries and companies. It is essential that allowances should be based on real energy efficiency, relative to competitors at home and overseas, whether or not efficiency improvements have been as a result of Climate Change Agreements. (Paragraph 10.32)

Climate change policies and measures, including energy efficiency and revised CCA targets (which are based on the potential for cost effective energy savings), were incorporated into the projections used to determine Phase I allocations at the sector level.

The list of installation level allocations was published on 24 May 2005, and allowances were transferred into operators’ accounts shortly thereafter. Operators of installations affected by the Scheme have now known about those allocations since May and are likely to have relied upon them in making commercial decisions, such as on their level of operation, adoption of abatement technology and the purchase and sale of allowances. This makes it inappropriate to reconsider the allocations for Phase I (2005–07) at this stage. In addition, the list of allocations published in May was arrived at by the application of the methodology set out in the National Allocation Plan (NAP), which has been approved by the European Commission. This methodology is objective, transparent and consistent and was arrived at following extensive consultation with industry. As a result, we are not in a position to re-examine the allocation of allowances because any departure from the methodology set out in the approved NAP, would be in breach of the UK’s obligations under the Emissions Trading Directive. Furthermore, the Commission has made clear that any ex-post adjustment to published allocations would be inadmissible.

Government is currently gathering and analysing evidence to inform decision-making on Phase II (2008–12) of the EU ETS, and has recently published a consultation outlining its intended approach to the second Phase.

A number of options for an allocation methodology are being considered; including the use of benchmarking which offers the opportunity to set abatement targets to industry and delivers the right messages for emissions reductions. Alongside the formal consultation, there will be a programme of focused meetings with sectors over the coming weeks to examine the feasibility of a range of allocation methodology options, including the use of benchmarking. As part of current research to look at the classification of installations into sectors for Phase II, Government is considering the treatment of Combined Heat and Power (CHP) plant, and in particular whether a separate sector for Good Quality CHP (CHP generation of over a specific high efficiency threshold) should be created. In addition, Government has commissioned independent research to examine the potential options for specific allocation methodologies for CHP in Phase II. There will be a further formal
consultation, detailing the allocation methodology approach and treatment of CHP, with a draft National Allocation Plan (NAP) at the turn of the year (2005–06).

Alongside this work, a further priority is to move towards a more harmonised Scheme, and the UK is actively working with other Member States and the Commission to examine the scope for harmonisation and joint action on a range of key Phase II issues. The Commission has also agreed to publish revised NAP guidance by the final quarter of 2005. This revised guidance will aim to reduce many of the disparities in the implementation of Phase I across the EU25 and, by requesting more detailed and consistent information, will allow a more transparent and robust assessment of Member States’ NAPs and progress towards Kyoto targets.

The Longer Term: Research

The level and co-ordination of energy research

65. In 2001 Sir David King recommended the establishment of the UKERC. The Centre is now in existence, but its staff are handicapped by the halfhearted way in which it has been established. A “distributed centre”, dependent on Research Council support, cannot provide leadership for the many, widely dispersed energy research projects around the country. We therefore recommend that the Government, in addition to the forthcoming review of the first phase of the UKERC’s work by the Research Councils, separately consider ways to strengthen the Centre, giving it greater autonomy, a physical presence and legal personality. Additional investment in the UKERC would in the longer term be money well spent. (Paragraph 11.9)

UKERC was established through a competitive process involving rigorous international peer review and independent assessment. The UKERC research programme was initiated in October 2004 and the Centre will be fully operational later this year. It is therefore premature to reach judgments about the Centre’s effectiveness.

There is no evidence to suggest that its constitution as a distributed Centre will hamper its effectiveness. Indeed, a similar joint Research Council distributed centre, the Tyndall Centre for Climate Change Research, has become in just a few years the recognised UK leader in its field. If anything, the UKERC’s physically distributed nature and its key responsibility to set up the National Energy Research Network will enhance its capability to engage at a local and regional level. The Government remains supportive of the current work of UKERC and considers that it is important for the Centre to be allowed the time and space to become fully established. The Government will of course contribute to the review planned by the Research Councils.

In addition, the UKERC is already working to enhance the coherency and effectiveness of energy research and innovation activities more widely than the research community itself, for example through engagement with business and as a key member of the new UK Energy Research Partnership, which it is helping to shape.

66. We are mystified by the announcement that the Government intends to establish a “UK Energy Research Partnership”. We already have the UKERC, Research Councils, the Carbon Trust, and Regional Development Agencies. We believe that it would be more fruitful to strengthen the role of the UKERC, and that no case has yet been made for adding another layer of bureaucracy to the administration of energy research. We therefore look to the Government to explain the benefits of this proposal in greater detail. (Paragraph 11.10)

The UK Energy Research Partnership does not represent another layer of bureaucracy. It will have no formal decision-making or advisory role to Government. Rather, the Partnership will provide a unique forum for bringing together key funders of energy research and innovation across Government, the research community and industry, together with other bodies such as Ofgem with a broader interest in this issue.

The UK Energy Research Centre will be an important member of the Partnership, together with representatives from the Carbon Trust and the Research Councils, however the Partnership’s remit and membership will extend a lot further. It will be a fully joint initiative with industry, co-chaired by the Government’s Chief Scientific Adviser, Sir David King, and a senior industry representative. A joint public/private sector Secretariat will help to reinforce the sense of common ownership.

The Partnership is still at the stage of becoming established, and members themselves will confirm key aims, priorities and working methods at a first meeting in the autumn. However it has initially been discussed that the Partnership’s role, whilst deliberately left flexible, should be to provide high-level leadership in relation to UK energy research and innovation by aiming:

— To serve as a forum for high-level dialogue on energy research and innovation issues.
— To promote a more coherent approach to addressing UK energy challenges, set within an international context.
— To boost the combined impact of public and private sector investment in energy research and innovation.
— To enhance the UK’s long term prospects as a key centre for energy research.

It is envisaged that the Partnership’s role, value and impact will be reviewed around two years from its inception.

67. We welcome the increase in funding for energy research and development, from £40 million to £70 million by 2007–08, which was announced in the 2005 Budget statement. However, we note that funding for energy research in the United Kingdom will still be at a very low level compared to international competitors, particularly where research into energy conservation is concerned. Funding must increase much further if the Government’s ambitious energy policy objectives are to be achieved. (Paragraph 11.13)

68. We therefore recommend that the Government signal their long-term commitment to a progressive increase in funding for energy research to at least average IEA levels as a proportion of GDP by 2020. We believe such a commitment is essential in order to encourage new researchers to enter the field, and to stimulate the development of the energy research base at all levels. (Paragraph 11.14)

The Government currently carries out a large number of research projects into the built environment. Estimates suggest that UK expenditure into this research range between £50–70 million per annum over the last 10 years. Of this figure EPSRC have awarded around £25 million per annum in construction research grants with a similar sum being invested in research programmes directly relevant to construction (including Modern Methods of Construction) such as Innovative Manufacturing. The most recent mapping exercise into funding for research into the built environment, carried out in 2004 by the Commission for Architecture and the Built Environment (CABE) and New Construction Research and Innovation Strategy Panel (nCRISP), indicated that current UK expenditure is estimated at approximately £53 million pa, based upon the CABE/nCRISP definition of built environment.

There are increasing opportunities for research funding on energy efficiency through the Carbon Trust and research council programmes. The Carbon Trust (which is sponsored by Defra) supports energy efficiency RD&D under its Innovation Programme. The annual budget for this is around £25 million. The Engineering and Physical Sciences Research Council maintain a sizeable portfolio of high quality research into energy efficiency technologies, with current support amounting to approximately £10 million (approximately £3.4 million spend per annum).

The Carbon Trust and EPSRC (Engineering and Physical Sciences Research Council) launched Carbon Vision in November 2002. It is a jointly funded £14 million initiative over four years to promote innovation in low carbon technologies by supporting fundamental research into ways of achieving step change reductions in the lifecycle carbon footprint of carbon intensive materials, products, processes and buildings. The Research Councils, EPSRC and NERC, have agreed to contribute up to £500k each (on a project-by-project funding basis). In addition, in his Pre-Budget report, the Chancellor announced a new £20 million fund, to be managed by the Carbon Trust, to accelerate research development and deployment of energy efficiency.

DTI and Research Council expenditure on energy R&D increased from £34 million in 1998–99 to an estimated £60 million in 2004–05. This is projected to rise to at least £95 million by 2007–08. The Government also supports a range of demonstration activity, worth over £300 million between 2002 and 2008.

This represents a significant public expenditure investment in emerging energy technologies, which is not fully reflected in the currently available IEA figures. Nevertheless, the Government continues to monitor whether the current investment is commensurate with the scale of the challenge.

Moreover, funding by itself is not a measure of success. The Government are also committed to wider opportunities for galvanizing the research community, including creating partnerships. As the Committee has highlighted, Government is currently establishing a UK Energy Research Partnership to improve its dialogue with industry and academia in this area as described in Recommendation 66. The UK Energy Research Partnership will bring together public and private funders of energy research.

In addition, the Government are actively engaged in the Low Carbon Working Group (LCWG), a forum for liaison and to exchange information about funding research and development on low carbon technologies (including energy efficiency and renewables). Research funders of low carbon technologies, such as the relevant research councils, Government departments and agencies are represented, and it is chaired by David Vincent from the Carbon Trust. As the group informs each other about their activities, it facilitates coordination of RD&D to avoid overlaps and improve synergies.
**Recommendation—Research priorities**

69. **We were shocked by the decline in DTI funding for applied construction research since 2002. While drawing attention to the importance of incremental research, the Government have withdrawn funding for just such research in a sector that is both central to future energy efficiency improvements, and in which they invest over £30 billion in procurement annually. We therefore recommend that the Government urgently commission a follow-up to Sir John Fairclough’s 2002 report on construction research, with a view to identifying ways to rectify the situation, and in particular that they transfer responsibility for construction research from the DTI to ODPM.** *(Paragraph 11.25)*

While it should be noted that DTI is not the only source of funding for construction research, the Government is aware of concerns within the construction sector following the changes made to Government funding for research as recommended by the DTI Review and the Innovation report. Although there has clearly been a hiatus in funding there has been significant success for construction in the recent DTI Technology Programme Competitions. The Government is seeking to address the sectors concerns but do not believe there is justification to re-visit the Fairclough review at this time or to remove a strategically important sector such as construction from the scope of the DTI Technology Strategy.

Sir John Fairclough, while supporting the then level of Government support for construction research, was clear in emphasising the need for industry to take a greater responsibility for defining and funding research and that Government should target collaborative funding programmes carefully and selectively at key competitiveness issues including long term strategic development. Outside these areas, Sir John recommended Government should withdraw funding support, leaving shorter-term knowledge transfer and incremental research to be wholly funded by industry.

Sir John’s report was mirrored by the findings of the subsequent Innovation Report, published in 2003, which recommended Government focus the funds it has available on supporting longer term, industry led Technological development in areas with clear market focus and delivering broad public benefits. The subsequent DTI Technology Strategy helped introduce Sir John’s recommendations for longer term, larger, collaborative programmes of R&D, focussed on productivity.

It is incorrect to say that the decision to withdraw funding from a number of incremental research/best practice areas was not a result of a strategic policy decision. It is also incorrect to say that the Government terminated the BRE Framework, as the Framework from the outset was time limited.

Although the DTI Review recommended a rationalisation of DTIs sector and sub-sector research programmes into generic funding products, this does not mean the construction sector is not recognised as a crucial area for improvement. The Technology strategy for the Modern built environment is a significant input to the framework for developing Technology Strategy Board (TSB) strategic priorities.

An initial Technology Strategy for the Built Environment was developed for the TSB last autumn with the assistance of New Construction Research and Innovation Strategy Panel (nCRISP), and led to the November 2004 competition placing particular emphasis on the modern built environment. 15 research projects either led by the construction sector—or strongly impacting on the sector—were successful in the design simulation and modelling, pervasive systems, materials and waste competitions and, subject to finalization, will be offered up to £9.5 million in DTI funding. The earlier April 2004 competition saw success for five projects impacting on the construction sector which will receive around £2.7 million in funding—including a Corus led project creating energy efficient cladding solutions. This is in addition to the legacy research spending reported in Lord Sainsbury’s written response of 24 March 2005.

The DTI are also likely to fund five construction related feasibility studies arising from the April 2005 call for the Zero Emissions Enterprise covering areas such as deconstruction, recycling of thermal insulation panels and refurbishment. DTI are currently discussing with Defra a future competition on energy efficient technologies in the Built Environment funded through the Technology Strategy.

Crucially, the DTI Technology Strategy Board recognises the need for a Knowledge Transfer Network in the Modern Built Environment reflecting Sir John’s call for centres and networks of excellence. A competition will be announced shortly. In addition the DTI continue to contribute critical funding to a number of industry change initiatives including Constructing Excellence in the Built Environment and the BRE-led INREB Faraday network (Integrating New and Renewable Energy in Buildings).

Through Global Watch, DTI has enabled the construction sector in the UK to examine various international research activities including technology missions led by The Science and Technology Policy Research Unit (SPRU) on Smart Housing, Housebuilding, Cladding and Modern Methods of Construction (Germany). The DTI has also enabled BRE, acting on behalf of the INREB Faraday, to run Missions on New and Renewable Energy in Buildings and on Low Carbon in Buildings.
The DTI continue to progress the Fairclough agenda. Sir John recognised that Construction traditionally lacked a single cohesive voice able to articulate its research and innovation needs. Government subsequently challenged nCRISP, the new Construction Research and Innovation Strategy Panel, to develop a strategic vision. Although there was some progress there remains a need to draw together a stronger grouping, integrating the key players already engaged in nCRISP. To this end DTI has supported the development of a UK National Construction Platform for the Built Environment able to feed priorities into the European Construction Technology Platform and to better inform the DTI’s independent Technology Strategy Board.

Response by OFGEM to the House of Lords Science and Technology Committee Report

Energy Efficiency

Introduction

1. Ofgem welcomes the Committee’s report and would like to respond to three of the recommendations. These relate to the feasibility of introducing pricing arrangements based on the model of “lifeline tariffs”, the presentation of information on energy bills, and the development of smart metering.

“Lifeline Tariffs”

2. The Committee recommended that “the Government and regulator review current energy pricing arrangements, which create a perverse incentive to consume more energy. In particular, we recommend that the Government explore the feasibility of introducing pricing arrangements based on the model of ‘lifeline tariffs’”.

3. Given that retail tariffs are no longer regulated it would not, in Ofgem’s view, be appropriate for the Government or the regulator to mandate a particular structure of tariffs. Ofgem has instead encouraged industry to look at innovative ways in which they can help vulnerable consumers. Ofgem has also produced guidance on social tariffs to help suppliers develop such tariffs, without breaching their statutory obligations including competition law.

4. As a result of this most suppliers have now come forward with some form of social tariffs. The structure of the tariffs offered by suppliers varies. For example, Powergen’s “Staywarm” tariff is a fixed tariff regardless of usage, available to pensioners who might otherwise cutback excessively on usage because of a fear of running up large bills.

5. Given the evidence that suppliers can develop innovative tariffs and services which respond to consumers’ needs and which form part of the suppliers’ Corporate Social Responsibility programmes, Ofgem does not consider it appropriate to intervene to mandate a particular structure. Customers who prefer a particular tariff, such as “Staywarm”, would appear to value the peace of mind this gives, and might not welcome having to accept a different tariff.

6. Moreover, the evidence suggests that even with the current high prices the majority of consumers have not responded by reducing consumption, which tends to confirm Ofgem’s view that demand is very inelastic and that tariff structures are unlikely to be an effective way of driving changes in consumer behaviour so far as energy efficiency is concerned.

Billing Information

7. The Committee recommended that “the Government and regulator not only press forward with their review of the presentation of information on bills, but that they specifically explore innovative ways in which information can be presented so as to exert the greatest possible influence on behaviour”.

8. On 18 March 2005 a new standard licence condition was inserted into electricity supply licences by The Electricity (Fuel Mix Disclosure) Regulations 2005 (SI No. 391). The Regulations implement Article 3(6) of Directive 2003/54/EC concerning common rules for the internal market in electricity and require suppliers to provide details of the mix of fuels used to produce the electricity that they supply to customers, along with certain environmental information.

9. Ofgem is developing guidelines to help suppliers with the presentation of the fuel mix information in order to maximise consumers’ understanding of that information. The draft guidelines propose some limited standardisation of certain aspects of fuel mix labelling to aid consumers when comparing the content of the fuel supplied by different suppliers. They also include information on requirements with respect to the calculation and presentation of the fuel mix and environmental information and sample labels and calculations.
10. In addition, Ofgem has set up a programme of research to investigate options for improving consumption information provided to consumers. The final report by the Centre for Sustainable Energy proposed a year long trial involving a large sample of households to examine actual consumer responses to improved feedback. Ofgem is working with a supplier on implementing such a trial.

SMART METERING

11. The Committee has urged “the Government to take the lead in establishing a large-scale trial both of remote metering and of low-cost options for ‘smart’ domestic display units, which could be rapidly developed and rolled out.”

12. Ofgem is currently considering smart metering, primarily in relation to domestic meters, and is taking forward a work programme that includes:
   — an analysis of the key functionalities in both gas and electricity credit and prepayment meters;
   — an overview of international developments in innovative metering;
   — analysis of the initial costs and benefits of more widespread implementation of innovative metering in Britain, taking into account that not all benefits that may flow are likely to be captured by suppliers; and
   — identifying the existing regulatory and commercial barriers to innovative metering.

13. We expect to complete this work in December and to update interested parties in the New Year.

14. Ofgem is supporting the monitoring and evaluation of a small-scale trial of smart meters, known as “Warm Plan”. This is being undertaken by HelpCo, a not-for-profit organisation. The trial, which involves the installation of smart meters in 200 homes, aims to demonstrate how intelligent meters can be used to deliver feedback and incentives for energy efficiency. The trial will last for two years and evaluation results are likely to be available in spring 2007.

Response by Chairman of Committees to Energy Efficiency

At its meeting on 22 November, the Administration and Works Committee considered the recommendations made to the House administration by the Science and Technology Committee in its report, Energy Efficiency. The Committee agreed to the Science and Technology Committee’s recommendation that, subject to the agreement of the Commons, a full-time Energy manager should be employed. The Committee considered that this was the key recommendation from which many of the Science and Technology Committee’s other recommendations would flow.

The Committee’s response to the individual recommendations is set out below.

1. “That the House of Lords Corporate Business Plan include specific targets for reducing energy use and greenhouse gas emissions, and that Office Business Plans incorporate specific initiatives to deliver these targets”

The Committee agreed that the House of Lords Business Plan should include policies relating to energy conservation, and that this should be done when the Business Plan is next revised in 2006.

The Committee considered, however, that, given that the major elements of implementing an energy strategy (such as energy purchasing and works) are conducted jointly with the Commons, specific targets should continue to be set jointly by the Parliamentary Estates Directorate.

2. “That Black Rod’s Office, together with the Serjeant at Arms’ Department in the House of Commons, explore the feasibility of acquiring for Parliament an information system that would collect and monitor energy data, so as to facilitate real-time management of energy use”

The Committee noted that energy data were already collected monthly for the Palace of Westminster and each of its outbuildings, as detailed in the Energy Saving Implementation Strategy. The Parliamentary Estates Directorate has also agreed to investigate the purchase of monitoring and targeting software to provide automatic weekly records which will improve the accuracy of measurement and allow better planning and monitoring of energy conservation measures.
3. “That regular reports on trends in energy consumption be presented to the appropriate domestic committees of both Houses”

The Committee noted that it already considered reports on energy consumption annually, and decided that it wished to continue to monitor energy consumption on an annual basis.

4. “That, in accordance with best practice guidance, a full-time Energy Manager be appointed, and that his role be strengthened in order to reflect the higher prominence of energy within the House of Lords Corporate Business Plan”

As noted above, the Committee agreed that, subject to the agreement of the Commons, a full-time Energy Manager should be employed.

The Director of Estates is now drawing up a business case for the creation of this new post, and will consult the appropriate authorities in the Commons.

5. “That the Energy Manager be tasked with strengthening the existing energy strategy, with a view to meeting the agreed targets”

The Committee noted that the Energy Manager was already charged with this task. The appointment of a full-time Energy Manager should enable further steps to be taken in this area.

6. “That domestic committees be invited to endorse the strategy and to establish clear guidance for both staff and Members on energy use”

The Committee is already asked to endorse energy, water and waste strategies, and new policies and targets were agreed at its meeting on 22 November. In terms of implementation, the bi-cameral Energy Savers Group runs awareness campaigns aimed at reducing energy use. The Parliamentary Estates Directorate is also organising a series of talks by high profile figures to raise awareness of the issues: the first such talk, given by David Bellamy, took place on 21 November.

7. “That ambitious energy efficiency targets be incorporated into the project to prepare the Millbank island site for occupation by the House of Lords”

The Committee endorsed this recommendation. It noted that the Parliamentary Estate had a good record in taking energy efficiency into account in the design and renovation of its buildings, and agreed that energy efficiency should be an important consideration in the renovation of the island site.

5 December 2005
RECENT REPORTS FROM THE HOUSE OF LORDS SCIENCE AND TECHNOLOGY COMMITTEE

Information about the Science and Technology Committee is available on [www.parliament.uk/hlscience/](http://www.parliament.uk/hlscience/), which also provides access to the texts of Reports.

General Parliamentary information is available on [www.parliament.uk](http://www.parliament.uk).

**Session 2001–02**

1st Report  

2nd Report  
Science in Schools: Government Responses

3rd Report  
What on Earth? The threat to the science underpinning conservation *(follow-up to 1st Report 1991-92)*

**Session 2002–03**

1st Report  
Managing Radioactive Waste: Government Response

2nd Report  
Chips for Everything: Britain’s opportunities in a key global market

3rd Report  
What on Earth? The threat to the science underpinning conservation: The Government’s response and the Committee’s commentary

4th Report  
Fighting Infection

5th Report  
Science and the RDAs: SETting the Regional Agenda

**Session 2003–04**

1st Report  
Chips for Everything: follow-up

2nd Report  
Science and the RDAs: follow-up

3rd Report  
Science and Treaties

4th Report  
Renewable Energy: Practicalities

5th Report  

**Session 2004–05**

1st Report  
Science and Treaties: follow-up

2nd Report  
Radioactive Waste Management: Government Response

**Session 2005–06**

1st Report  
Ageing: Scientific Aspects

2nd Report  
Energy Efficiency