



House of Commons  
Communities and Local  
Government Committee

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# Existing Housing and Climate Change

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**Seventh Report of Session 2007–08**

*Report, together with formal minutes*

*Ordered by The House of Commons  
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## Communities and Local Government Committee

The Communities and Local Government Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Department for Communities and Local Government and its associated bodies.

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Sir Paul Beresford MP (*Conservative, Mole Valley*)

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David Wright MP (*Labour, Telford*)

Martin Horwood MP (*Liberal Democrat, Cheltenham*)

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The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at [www.parliament.uk/clgcom](http://www.parliament.uk/clgcom)

### Committee staff

The current staff of the Committee are Huw Yardley (Clerk of the Committee), David Weir (Second Clerk), James Cutting (Committee Specialist), Sara Turnbull (Committee Specialist), Clare Genis (Committee Assistant), Gabrielle Henderson (Senior Office Clerk), Kerrie Hanley (Secretary) and Laura Kibby (Select Committee Media Officer).

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# 1 Carbon emissions and housing stock

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## The challenge

1. The United Kingdom contains more than 26 million homes ranging from the largest Elizabethan mansion to the smallest purpose-built flat. Collectively, those homes emitted 41.7 million tonnes of carbon dioxide (MtCO<sub>2</sub>) in 2004, representing more than a quarter of the UK's emissions (152 MtCO<sub>2</sub>) of the main greenhouse gas driving climate change.<sup>1</sup> Over the next 12 years, the Government believes that 3 million more units will need to be added to the UK housing stock, and considerable effort has been made to ensure that those additional homes are as carbon-neutral as modern building methods, technologies and government regulation can make them. The question animating this Report, therefore, is what can be done to minimise and reduce the carbon footprint of the already existing housing stock, particularly given that an estimated 23 to 25 million of the homes already standing will still be lived in half a century from now. To put it another way, two thirds of the homes likely to exist in 2050 already do.

2. There is clear scientific and political consensus that climate change is the greatest long-term challenge facing the world. The United Kingdom is committed to reducing carbon emissions by 60 per cent by 2050. A reduction of that level in emissions from the housing stock would equate to about 24 million fewer tonnes of carbon, leaving emissions at about 17 million tonnes per annum.<sup>2</sup> The Government has accepted that individual sectors—housing, other buildings, construction and transport, for example—may contribute differential proportions to that total reduction, and that “it may not be cost-effective to seek to achieve the full 60% from existing homes”.<sup>3</sup> It is clear, however, that a significant contribution to the overall reduction is required from housing, and some campaigners, particularly Brenda Boardman of Oxford University's Environmental Change Institute, have argued that the target should be as high as an 80 per cent reduction from housing<sup>4</sup>

3. Whatever the level set, substantial gains can and need to be made from actions to reduce the emissions that result from our heating, our lighting, our water use and the way we manage our homes. Familiar technologies already exist that offer quick and comparatively low-cost improvements—cavity wall and loft insulation, better-insulated windows, less draughty doors. Newer technologies—wind generation, community heat and power systems, solar power—offer longer-term and as yet less certain returns, and questions arise of whether the markets exist to disseminate them cost-effectively and widely, and whether a skills base exists for their efficient and appropriate installation. Actions are also required from the individuals who live in those 26 million homes, from landlords and homeowners, from local and central government, and from builders, engineers, installation experts and planning departments. Finally, those actions depend in turn on existing, new and

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<sup>1</sup> Department for Communities and Local Government, *Review of the Sustainability of Existing Buildings*, November 2006.

<sup>2</sup> Ev 259-60

<sup>3</sup> Ev 287

<sup>4</sup> Brenda Boardman, *Home Truths: A Low-carbon Strategy to reduce UK housing emissions by 80% by 2020*, University of Oxford's Environmental Change Institute, Co-operative Bank and Friends of the Earth, November 2007.

developing information about what can and should be done to reduce our carbon emissions.

4. The average newly built home in the UK emits 0.86 tonnes of carbon a year; the average household living in an existing home is responsible for about twice as much, at 1.6 tonnes, three quarters of which arises from space and water heating and from lighting.<sup>5</sup> The initial prognosis for a reduction as substantial as 60 per cent does not, on the face of it, look good: energy consumption per household in the UK has remained more or less stable since 1990, and the rising number of households (the Government predicts 223,000 more households in England each year to 2026) might be expected to bring about an increase.<sup>6</sup> Overall stability has, however, been something of an achievement in itself in the face of a 40 per cent growth in the demand for energy services—particularly for appliances. It has also occurred in spite of rising consumer expectations and desire for comfort, particularly warmth: the Construction Products Association notes a 50 per cent increase in average home temperatures in the past four decades:

In 1970, the average UK house was heated to an average of 12°C, whilst by 2003 this had risen to 18°C.<sup>7</sup>

Standing still for nearly four decades has, then, required considerable effort, and the Energy Saving Trust estimates that domestic energy efficiency measures taken since 1970 have halved what UK domestic energy demand would otherwise be.<sup>8</sup> Stability is no longer enough, though. **The amount of energy we use to heat and light our homes now needs to decline, and sharply, if carbon emission reductions from the housing stock are to contribute towards the 60 per cent reduction in emissions by 2050 to which the United Kingdom is committed.**

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<sup>5</sup> Ev 260

<sup>6</sup> Department for Communities and Local Government, *Building a Greener Future: Policy Statement*, July 2007), p. 10

<sup>7</sup> Ev 151

<sup>8</sup> Ev 260

## 2 Existing housing stock and new build

### Striking a balance

5. The Government announced in its 2007 Green Paper on housing that, among other things, it intended to build 10 new Eco-Towns and to make all new homes carbon-neutral by 2016.<sup>9</sup> Significantly higher standards in Building Regulations have led to significant improvements in the energy performance of newly built housing over the past decade: a typical Standard Assessment Procedure (SAP) rating for an average home in England is about 45, while the average house built to current Building Regulation standards achieves nearer 80. The Department for Communities and Local Government's (CLG) Code for Sustainable Homes has also set new energy efficiency standards for developers to achieve within new housing stock, and the Department will shortly make the code, or elements of it, mandatory for forthcoming development. In short, much has been done to minimise the environmental impact of new housing.

*BOX 1: Standard Assessment Procedure (SAP)*

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

The energy performance of individual buildings is measured using the Government's Standard Assessment Procedure (SAP), a rating scale of 1 to 100, in which 100 represents the best performance possible. SAP takes account of the fuel efficiency of heating systems and the thermal efficiency of the building fabric (that is, how well it retains heat in winter). It also takes account of other factors including the type of construction (e.g. cavity wall, solid wall, terraced, semi-detached, detached or flat), the shape, size and orientation of the building, and the size and distribution of windows.

A version of SAP, known as reduced data Standard Assessment Procedure (rdSAP), is used to measure performance for Energy Performance Certificate ratings.

*Source: Government memorandum, Ev 277-94*

6. Questions have been raised, however, over whether the Government's focus on new build has deflected its attention from existing homes. In December 2006, CLG, consulting on how to achieve zero-carbon development, stated its commitment to prioritising action on new build, asking:

Are we right about the need for new housing to lead the way in delivering low-carbon and zero-carbon housing?<sup>10</sup>

Respondents did not think that right: among the "central themes" to emerge from the consultation, the Government reported:

A number of respondents ... said that they did not want to see the focus on new homes come at the expense of action on the existing housing stock.<sup>11</sup>

<sup>9</sup> Ev 278

<sup>10</sup> Department for Communities and Local Government, *Building a Greener Future: Towards Zero Carbon Development; a consultation paper*, December 2006, Question 1.

<sup>11</sup> Department for Communities and local Government, *Building a Greener Future; policy statement*, July 2007, p. 13

7. The Sustainable Development Commission (SDC), the Government's own independent adviser in the field, has expressed considerable concern at what it sees as an inadequate balance between policy on new build and existing stock. A report originally commissioned by CLG's predecessor, the Office of the Deputy Prime Minister, identified the problem as long ago as July 2006:

there is an uneven playing field between new build and refurbishment. The whole system for at least 20 years has been geared in favour of new build; renovation grants have all but disappeared and incentives to renovate are minimal and extremely restrictive. There is a high VAT tax of 17.5% imposed on all repair and modernisation...<sup>12</sup>

Professor Anne Power, a commissioner and one of that report's authors, told us that the SDC was immensely frustrated that its report appeared to have gathered dust in the 18 months since its publication:

The Government has not yet responded at all to the recommendations we made, even though they paid for and commissioned our work, and we have actually asked them to respond. There is a really serious hiatus in their review of the existing stock.<sup>13</sup>

The Royal Institution of Chartered Surveyors (RICS) "believes that the emphasis on reducing carbon emissions on new build has been disproportionate."<sup>14</sup> The Chartered Institute of Housing thinks the Government "is in danger of neglecting the biggest problem facing us—emissions from existing homes."<sup>15</sup> **There is clear consensus that the Government needs to engage as fully with reducing carbon emissions from the existing housing stock as it has with reducing those from new development.**

8. In the Government's defence, there is clear sense in focusing on what can be done to improve performance in houses not yet built: regulations, voluntary codes and improving technologies can all play a part in constructing housing that is sufficiently insulated or has high-performance windows or highly efficient boilers and heating systems. In addition, a headline-winning announcement promising 10 new Eco-Towns is more likely to raise the public profile of housing stock energy efficiency than 10 announcements promoting better cavity wall insulation. In December 2007, the then Minister for Housing, the Rt Hon. Yvette Cooper MP, raised, too, the idea that cutting-edge technology and ideas developed to create new homes have potential spin-offs for older housing:

the real prize for us with the new homes programme is that if the regulatory framework it sets out can trigger technological spin-offs that can be used to retrofit existing homes as well, then you drive investment and technological change.<sup>16</sup>

9. Government policy has begun to tilt back in the direction of existing stock. CLG is reviewing the sustainability of existing buildings, albeit at a pace the Sustainable

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<sup>12</sup> Sustainable Development Commission, *Stock Take: delivering improvements in existing housing*, July 2006, p. 15

<sup>13</sup> Q 1

<sup>14</sup> Ev 201

<sup>15</sup> Ev 56

<sup>16</sup> Q 240

Development Commission finds frustratingly slow.<sup>17</sup> The Department for Environment, Food and Rural Affairs (DEFRA), via the Energy Saving Trust, will also, by December 2008, launch a new Green Homes Service, intended to provide a nationwide advice service and to be active in targeting the poorest performing homes with information on action, grants and potential suppliers and installers. None the less, **the Government's understandable desire to build improvements into future housing has led it to give insufficient priority to action on the vast bulk of the housing stock represented by the 23 million homes already there in England and Wales. A much clearer focus on what must be done to bring existing housing up to required energy efficiency standards is essential.**

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<sup>17</sup> Qq 1 and 5

## 3 Regulation and encouragement

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### Building Regulations

10. The Government's primary regulatory tool for driving improvement in building standards is the Building Regulations, which set standards for construction and for some refurbishment and renovation works. Part L of the Regulations sets environmental performance standards, and recent changes have significantly raised these: the Government says the April 2006 revision required standards 40 per cent higher than those of the 2002 Regulations and some 70 per cent higher than those set in 1990.<sup>18</sup> The standards are expected to rise again in forthcoming revisions: by 25 per cent in 2010; by 44 per cent in 2013; and to establish zero-carbon in new build by 2016.

11. Although the Regulations largely apply to new build, improvements are required to existing stock for certain refurbishment and renovation works: standards fixed for particular components mean that windows, doors, hot water systems and boilers, for example, may need to be replaced when certain types of work—extensions, in particular—are carried out on an existing home. Although improved standards have already been mandated for 2010 and beyond, CLG will review the Regulations this year and further changes may be required once the European Commission has reviewed the Energy Performance of Buildings Directive in 2009.

12. The Regulations, having statutory force, have had a clear impact in raising standards. The Home Builders Federation states that a home built today is likely to be 40 per cent more energy efficient than one built just five years ago, and up to six times more efficient than the substantial proportion of Victorian housing in the stock.<sup>19</sup> The Association for the Conservation of Energy notes that the 27 per cent or so of buildings constructed before 1919 achieve an average SAP rating of under 41 (out of 100) while the bulk of properties built since 1990 achieve higher than 70.<sup>20</sup>

### Consequential improvements

13. Inevitably, the main impact of the Building Regulations has been in the new-build sector, and the Government may need to consider the extent to which they can be used as a means of bringing about retrospective change to already-standing homes. At present, for existing homes, Building Regulations largely apply to any new or significant improvement to a house—the standards apply, for example, to an extension or a new conservatory. Dr Hywel Davies, Technical Director of the Chartered Institute of Building Services Engineers (CIBSE), told us that the Regulations currently have an impact on works done on only about 2 to 3 per cent of the stock each year, adding:

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<sup>18</sup> Ev282

<sup>19</sup> Ev 173

<sup>20</sup> Ev 100

The first question therefore is whether there is any way of expanding the scope of the Regulations to cover more properties.<sup>21</sup>

14. The most obvious way to do this would be to require energy efficiency improvements to the whole house whenever householders carry out significant improvement, refurbishment or renovation work. Indeed, a proposal to require such “consequential improvements” was made before the 2006 revision of Part L of the Regulations, but the Government chose to introduce the provision only for premises larger than 1,000 square metres, thus restricting it in practice principally to commercial premises rather than private homes. Environmental organisations such as WWF and housing providers including Parity Projects are united in pressing for the introduction of a more rigorous “consequential improvements” provision in the 2008 revision of the Building Regulations, the latter suggesting that a reduction to 100 square metres would draw in most 3-bedroomed houses (thus accounting for around 60 per cent of the housing stock) whenever homeowners construct an extension.<sup>22</sup>

15. The former Minister for Housing told us that the Government held back on the proposal in 2006 because it did not have adequate data on the impact such a proposal might have on householders, saying, for example, that a householder who needed to build an extension or new bathroom using the Disabled Facilities Grant might have been required to make further costly and unplanned changes to the rest of their home. No steps appear to have been taken to gather that data, however, and no guarantee has been given that a consequential improvements provision will be introduced next time round. **We recommend that the Government measure the impact of including in the Building Regulations consequential improvements provision affecting homeowners in time to inform the next Building Regulations review.**

### **Local authority action**

16. The Government has also pointed out that local authorities possess planning powers and can, if they choose, set higher local standards than exist nationally.<sup>23</sup> In Essex, Uttlesford District Council has become the first local authority in the UK to do so on consequential improvements, requiring, as part of planning permission, that cost-effective improvements be carried out within six months of completion of, or first use of, a new extension. Individuals applying for planning consent receive a home efficiency report setting out the consequential works that will be required and a surveyor is required to certify within six months that they have been done. The former Minister for Housing told us she thought that “has considerable potential as an approach”.<sup>24</sup> **We urge the Government to follow the lead set by Uttlesford District Council in requiring homeowners who extend their homes to make consequential improvements to the rest of their property as part of the planning consent process. We recommend that Part L of**

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<sup>21</sup> Q 165

<sup>22</sup> Department for Communities and Local Government, *Government Response to the Communities and Local Government Committee’s Report on the Department for Communities and Local Government’s Annual Report 2007*, March 2007, Cm 7335, p. 4

<sup>23</sup> Department for Communities and Local Government, *Building a Greener Future: policy statement*, July 2007

<sup>24</sup> Q 269

the Building Regulations be amended to require householders making substantial improvements, such as building an extension, to ensure that the carbon footprint of their improved home is at least no greater than before.

### Code for Sustainable Homes

17. In addition to the mandatory Building Regulations, the Department for Communities and Local Government introduced in April 2007 a voluntary Code for Sustainable Homes to influence the builders of new development. The Code sets standards at six levels, with developers receiving a certificate displaying the level of energy efficiency achieved in each property. In spite of being voluntary, the Code has been followed by most significant housebuilders and developers, and the Government intends from May 2008 to make it mandatory for sellers of new homes either to obtain a certificate setting out which level of the Code applies to the homes or a certificate stating that the home has not been assessed. These certificates will be included in Home Information Packs (HIPs) for the new homes.

18. The question arises whether a similar code might be possible to cover the energy performance of existing housing. The Sustainable Development Commission proposed the introduction of such a code in its Stock Take report 18 months ago, that being one of the recommendations to which the Government has not responded in spite of repeated requests from the SDC that it should do so.<sup>25</sup> Several witnesses to our inquiry have said the same, such as the Micropower Council, which notes that mandatory rules on gas boilers introduced a few years ago brought an instant improvement in the standard of boilers provided by suppliers, and the Royal Institute of British Architects, whose past President Jack Pringle told us a Code for existing homes should be a Government priority.<sup>26</sup>

19. The Minister for Housing rightly pointed out that the Code for Sustainable Homes, built as it is around such matters as construction standards, cannot simply be transposed into being a code for existing housing.<sup>27</sup> The introduction of Energy Performance Certificates, via Home Information Packs, will also, in the short term, provide homeowners with suggestions for improvements they can make. But the Government's slowness to focus on the problems and potential of carbon emissions reductions in the existing housing stock means that no code for existing homes has been prepared as yet. **Following the successful introduction of the Code for Sustainable Homes, we recommend that the Government produce as a matter of urgency a similar Code for Existing Homes. We further recommend that that Code contain minimum performance standards, perhaps based on Standard Assessment Procedure ratings. These standards should apply to all housing stock, although differential ratings may be acceptable in the short to medium term, but no later than 2016, for social housing, privately rented stock and owner-occupied homes, all of which begin from different baselines. A separate standard might also be set, in the short to mid term, for housing constructed before 1919, which is currently the least energy efficient, but often most prized, in the United Kingdom.**

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<sup>25</sup> Sustainable Development Commission, *Stock Take: Delivering improvements in existing housing*, July 2006, p. 16

<sup>26</sup> Ev 264, and Q 35

<sup>27</sup> Q 260

## Government programmes

20. While regulatory tools such as the Building Regulations and the Code for Sustainable Homes have been used to impel homeowners and developers to act to improve energy efficiency, the Government has also offered three main incentive programmes to encourage change. Decent Homes has resulted in some improvement in the social rented sector, although critics argue that the programme has not gone far enough and is something of a missed opportunity from the energy efficiency point of view. Warm Front has been targeted at lower-income owner-occupiers and tenants. Finally, the Energy Efficiency Commitment (EEC)—soon to become the Carbon Emissions Reduction Target (CERT)—has required energy suppliers, including the main gas and electricity suppliers, to promote and deliver energy improvements in households.

### *Decent Homes*

21. The Decent Homes programme is arguably one of CLG's success stories. The Department has co-ordinated the investment of some £20 billion in improving sub-standard social housing, providing new kitchens, bathrooms and central heating systems to tenants, often in the most deprived parts of the country. The Department had intended to achieve the Decent Homes standard in all social housing by 2010; it now states that 95 per cent of homes will meet the standard by then. Work will by then have been done on about 3.6 million homes, aiding about 8 million people of whom 2.5 million are children.<sup>28</sup>

22. What the Decent Homes programme has not explicitly done, however, is concentrate on improving energy efficiency and measures that might reduce carbon emissions. That is not to say that no energy efficiency improvements have been achieved: between 2001 and 2006, the programme delivered central heating improvements to more than 700,000 local authority homes, while more than 600,000 received insulation improvements and more than 800,000 had double glazing installed.<sup>29</sup> It is to say, however, that more could have been achieved had energy efficiency improvement formed part of the Decent Homes standard directly, instead of arising as an incidental, if welcome, benefit.

23. The Housing Corporation notes that the Decent Homes standard “is a trigger for action, not an aspirational standard”.<sup>30</sup> In other words, the programme set minimum standards, and social landlords were required to act only on properties that fell below them and only to bring those properties up to standard. For example, the Decent Homes standard requires loft insulation to a depth of 50 mm; but current guidance on efficient insulation suggests depths four or five times as great, and the Building Regulations require 250 mm. In fact, most local authorities have achieved more than the standard required when carrying out their work programmes, partly because of changing standards, partly because the raising of Building Regulation standards since Decent Homes was implemented required them to.<sup>31</sup>

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<sup>28</sup> Ev 287

<sup>29</sup> Ev 287

<sup>30</sup> Ev 273

<sup>31</sup> Q 109

24. The programme is widely seen as worth while for what it has achieved but a missed opportunity because of what it never sought to achieve. The Sustainable Development Commission, the Fuel Poverty Advisory Group and National Energy Action all believe the programme underachieved because specific energy improvement standards were omitted.<sup>32</sup> Parity Projects, which as a social landlord has carried out some of the works, notes that Decent Homes while “laudable in its aim to improve conditions ... is far from effective as a means of reducing carbon emissions.”<sup>33</sup> The Green Alliance, in work commissioned by the then Office of the Deputy Prime Minister, also criticised the programme for having “missed the opportunity to make significant carbon reductions in the existing stock, delivering only an anticipated half a million tonnes of carbon reduction by 2010.”<sup>34</sup>

25. The Minister for Housing accepted that the programme could have delivered more, saying that the imperative for energy efficiency improvements had grown stronger after the standard was set in 2000:

If you were setting the Decent Homes standard now, you would probably do it differently, but we have the Decent Homes standard in place and it is important at the moment to get everybody to do it.<sup>35</sup>

The point now is whether the lesson has been learnt, and whether whatever replaces Decent Homes when the programme is completed in 2010 will require measures explicitly intended to reduce carbon emissions. The SDC recommends that

any future standard for social housing and vulnerable occupants should have a much greater focus on improving resource efficiency as well as ensuring homes can cope with a changing climate.<sup>36</sup>

The Fuel Poverty Advisory Group and the Local Government Association both recommend that a future programme aim to raise SAP ratings in relevant housing to a minimum of 65.<sup>37</sup> In 2004, we, too, recommended that a ‘Decent Homes Plus’ standard be set for the period following the end of the Decent Homes programme and that the new standard should include a “much more ambitious thermal comfort criterion which is in line with building regulations in force at the time when the new Standard is set.”<sup>38</sup>

26. The Minister for Housing told us the Government has not yet decided what will happen after Decent Homes.<sup>39</sup> **We recommend that the Government include specific energy performance improvement standards in any social housing improvement programme that follows Decent Homes in 2010. In particular, we recommend that any**

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<sup>32</sup> Ev 136 and Ev 86

<sup>33</sup> Ev 192

<sup>34</sup> Green Alliance, *housing a low carbon society: an ODPM leadership agenda on climate change*, May 2006, p. 23

<sup>35</sup> Q 294

<sup>36</sup> Sustainable Development Commission, *Stock Take: delivering improvements in existing housing*, July 2006.

<sup>37</sup> Ev 136

<sup>38</sup> ODPM: Housing, Planning, Local Government and the Regions Committee, *Decent Homes*, Fifth Report of Session 2003-04, HC 46-I, para 92.

<sup>39</sup> Q 296

future programme contain a specific minimum, rather than average, Standard Assessment Procedure target for all social housing. We seek the Government's view on the Local Government Association's suggestion that that minimum SAP rating should be 65.

### *Warm Front*

27. Warm Front is the Government's major fuel poverty programme in England, with total funding between 2005 and 2008 amounting to more than £850 million. Similar, though not identical, programmes operate in Scotland and Wales. The programme directly provides a range of heating and insulation measures to householders who qualify because of their income or because they receive a disability-related benefit. More than 1.6 million households have had work carried out under the programme since it began in 2000, and the Government expects 240,000 households to receive assistance this year, with around 100,000 receiving heating improvements.<sup>40</sup> The programme is also expected to save half a million tonnes of carbon each year until 2010.<sup>41</sup>

28. As with Decent Homes, the programme wins general praise for what it has achieved but with caveats entered about what more could be done. There are further concerns about the costs of installation works carried out for the Government by Eaga plc. In particular, several witnesses questioned the maximum grant available under the scheme, usually £2,700. Rochdale Borough Council suggests the £2,700 is often too little, sometimes by £1,000 or more, and that "vulnerable clients are by definition unable to meet these costs".<sup>42</sup> The National Right to Fuel Campaign and FPAG also identify pressures on low-income households, particularly given the difficulty of installing heating systems for under £2,700:

the overall percentage of households needing to find additional money was around 5% [but] where central heating was being installed the percentage of cases needing top up was about 32%.<sup>43</sup>

National Energy Action notes that this may result "in the worst cases, [in] the work not proceeding."<sup>44</sup> Given that those eligible for the grant include households with children and pensioners on means-tested benefits, this raises some concern. The Government is currently reviewing grant limits. It has previously considered not having a limit, but concluded that removing all limits might reduce, by "many thousands", the number of households that could receive help.<sup>45</sup> **We recommend that as part of the Government's review of the maximum grant available under Warm Front limited flexibility be introduced into the scheme to allow the maximum level of £2,700 to be disregarded in cases where the most vulnerable households would not receive sufficient assistance to heat their homes adequately and as efficiently as possible.**

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<sup>40</sup> HC Deb, 3 March 2008, Col. 1568

<sup>41</sup> Ev 287

<sup>42</sup> Ev 125

<sup>43</sup> Ev 112

<sup>44</sup> Ev 86

<sup>45</sup> HC Deb, 3 March 2008, cols 1569 and 1570

29. Concerns have been raised more widely about the costs of installation works, and particularly the labour charges involved, most recently in a House of Commons Adjournment debate on 3 March 2008: the Government said that it was aware of such concerns, and had commissioned two independent reviews of prices; both found that Warm Front provided heating measures at significantly lower cost than in the private sector.<sup>46</sup>

30. The National Landlords Association, which represents about 5 per cent of landlords, identified two further potential problems with Warm Front. First, in privately rented properties, tenants rather than landlords are required to apply for grants. Since tenants will benefit from any increase in heating or reduction in bills, this is logical. However, since landlords have more interest than tenants in the long-term performance and maintenance of their properties, there may be a case for loosening that restriction. Secondly, a tenant living in a house in multiple occupation (HMO) is not eligible for Warm Front works if just one other tenant in the property is ineligible for a grant. **The Government should loosen restrictions on Warm Front eligibility to allow tenants living in HMOs to have works done on their homes.**

### **Energy Efficiency Commitment**

31. Warm Front and Decent Homes concentrate on lower-income private households and the social sector respectively. The Association for the Conservation of Energy notes that householders who fall outside the two groups are not being directly targeted with information or for action.<sup>47</sup> The Energy Efficiency Commitment (EEC), which obliges electricity and gas suppliers to promote and deliver improvements in energy efficiency, in fact targets all households across the UK, but requires a substantial proportion of works undertaken to be directed at low-income households.

32. The EEC was instituted in 2002 and is currently in its second three-year phase. The first phase, until 2005, is estimated to have stimulated about £600 million of investment in energy efficiency and is predicted to save about a third of a million tonnes of carbon each year until 2010. Phase 2, which ends this year, is expected to save about half a million tonnes.<sup>48</sup> The suppliers—six major suppliers do the bulk of the work—have thus far largely concentrated on what is known as “low-hanging fruit”; that is, quick, familiar improvements with fairly rapid pay-back periods, such as cavity wall and loft insulation, and the installation of more energy-efficient appliances, particularly white goods such as fridges, freezers and washing machines, which are now energy rated from A+ to G. British Gas, for example, subsidised more than 13 million individual measures in 2006, ranging from wall insulation to giving householders low-energy light bulbs.<sup>49</sup>

33. The Sustainable Development Commission notes the success of the EEC in delivering such measures. Nicholas Doyle, who as project director for the housing association Places

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<sup>46</sup> HC Deb, 3 March 2008, Col. 1569

<sup>47</sup> Ev 98

<sup>48</sup> Ev 283

<sup>49</sup> Ev 45

for People has been responsible for overseeing works done under the programme across the country, also praises the scheme for its practicality:

the Energy Efficiency Commitment is by far the simplest and most straightforward way of bringing investment into the existing stock... It is dead easy to do, it is not bureaucratic. It is managed by the energy companies who make it very easy to do.<sup>50</sup>

### **Carbon Emissions Reduction Target**

34. When the current phase of the EEC ends later this year, it will re-launch as the Carbon Emissions Reduction Target (CERT). The Government, in setting an increased carbon saving target for the scheme, says energy suppliers will be required in effect to double their current efforts and that this should both increase activity in established markets, such as those for insulation, and also encourage new development in markets for microgeneration technologies. In the Budget on 12 March 2008, the Government announced that the £2.8 billion programme is expected to see 2.9 million cavity walls filled, 2.7 million lofts insulated, 110 million energy-efficient light bulbs provided 90,000 homes switched to more efficient fuel systems (largely from electric to gas).<sup>51</sup> The Government is also committed to continuing to require some obligation from suppliers until at least 2020, and intends to review what can be done when CERT finishes its first phase in 2011.

35. Two specific concerns about CERT have been raised in our inquiry. First, the Environmental Industries Commission (EIC) points out that suppliers will be able to carry over additional work done under phase 2 of the EEC to meet the requirements they will be set under CERT, thus meaning that some of the new obligation has been met even before the programme has begun. EIC argues that a limit should be set on how much surplus the suppliers should be able to carry over in this way.

36. Secondly, the Association for the Conservation of Energy notes that the concentration on “low-hanging fruit” cannot continue for ever: at some point, every wall and loft will be insulated and every draughty door or window sealed.<sup>52</sup> The implication is that the supply companies will have to begin to move into provision of newer, less familiar and more expensive technologies; and the question is whether future phases of the programme can deliver as much for the same money as the two phases of the EEC have done.

### **Fuel Poverty**

37. A third and more general concern arises from the fact that the Government has included specific targets for improvement in fuel-poor and low-income households within both the EEC and CERT. The supply companies themselves argue that this blurs the focus of the programmes, since much work has to be done with households that use the least energy and that therefore emit comparatively small amounts of carbon. Fuel poverty groups meanwhile argue that even more help should be targeted on vulnerable households.

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<sup>50</sup> Q 209

<sup>51</sup> HM Treasury, *Budget 2008: Stability and Opportunity: building a strong sustainable future*, 12 March 2008, p. 104

<sup>52</sup> Ev 98

38. A household is defined as being in fuel poverty if more than 10 per cent of its income is required to meet its heating and other energy needs.<sup>53</sup> The Government has a statutory commitment to eradicate fuel poverty in all vulnerable households by 2010 and in all households across England by 2016. Vulnerable households include those with members who are elderly, disabled, or have a long-term sickness, and those who are low-income families with children.<sup>54</sup> While the number of households in fuel poverty fell from 5 million in 1996 to 1.2 million in 2004, rapid rises in energy prices since 2003 have pushed the figure up again to an estimated 2.4 million, calling into question the Government's ability to meet its legal obligation by 2010.

39. Energy suppliers argue strongly that trying to meet the Government's fuel poverty target through the EEC and CERT blurs each of the two separate objectives of reducing fuel poverty and reducing carbon emissions. Under EEC, suppliers were obliged to target 50 per cent of their work at vulnerable households; under CERT, from later this year, the proportion will fall to 40 per cent. EDF Energy, the major electricity supplier, notes:

This means that a disproportionately high percentage of the UK's largest domestic household carbon abatement programme is being directed at households who generally use the least energy, and create the least carbon emissions. This carbon emissions reduction programme is therefore being significantly undermined by trying to achieve both social and environmental objectives.<sup>55</sup>

The Construction Products Association, too, states:

It is perfectly legitimate to help old and low income households to afford the installation of central heating, but it is wrong to suggest that this is in any way part of a policy to tackle climate change.<sup>56</sup>

And RWE npower believes that

the blurring of carbon and fuel poverty objectives within a single framework is producing a sub-optimal outcome for both objectives.<sup>57</sup>

40. These points undoubtedly arise because energy suppliers realise that they could meet the carbon reduction targets most easily at the higher-income end of the spectrum, where households emit more carbon because they can afford more heating and more appliances. They are, none the less, valid: if the primary purpose of CERT is carbon reduction, then those households are where the biggest reductions may lie. However, as the National Right to Fuel Campaign notes, the climate change agenda is not the only one in play, and actions that push fuel poverty down the wider agenda would both increase inequalities in living standards and guarantee that the Government failed to meet its fuel poverty eradication targets in both 2010 and 2016. **While it is to be hoped that the supplier obligation to be established for the period from 2011 to 2020 may be able to concentrate more fully on**

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<sup>53</sup> Ev 135

<sup>54</sup> Ev 287

<sup>55</sup> Ev 66

<sup>56</sup> Ev 155

<sup>57</sup> Ev 60

**carbon reductions alone, the significant rise since 2003 in the number of households spending more than a tenth of their income on heating their homes justifies the continued inclusion of fuel poverty reduction aspirations within the three-year Carbon Emissions Reduction Target being set in 2008.**

## Data sharing

41. FPAG also suggests that local authorities should be enabled to target grants, programmes and information more effectively by being allowed to share internally data collected on benefit recipients. Councils who administer, for example, council tax benefit have a database containing the names and addresses of those who receive it and who, being of comparatively low income, may well be eligible for assistance under Warm Front, the EEC, CERT and local programmes. FPAG believes, however, that councils are being prevented from targeting assistance because of fears that using the information they already hold would breach data protection guidelines and legislation. Gill Owen, Chair of FPAG's public utilities access group, told us:

At the moment local authorities, through their departments which handle council tax and housing benefit, know where the households are that would be eligible for the Government grants... At the moment those bits of the local authority cannot share that information with another bit of the local authority that might be running a local programme to encourage people to take up those grants... We think that is silly, and that they should be able to share that information.<sup>58</sup>

42. The Local Government Association is urging the Government to clarify the legal position in this regard.<sup>59</sup> Rochdale Borough Council has called for a specific exemption within the Data Protection Act to allow councils to share information with "appropriate third parties" to allow the targeting of fuel poverty alleviation programmes.<sup>60</sup> We ourselves have made similar calls in the past, particularly in our Report on Council Tax Benefit in 2007.<sup>61</sup> **The Government should take every step possible, including amending the Data Protection Act if required, to ensure that local authorities may use the information they hold to target households likely to be suffering from fuel poverty. It should also consider whether provision of data to appropriate third parties for the same purpose may be desirable and achievable.**

## Privately rented housing

43. Decent Homes has significantly improved energy performance in the social rented stock, even if this improvement has been incidental to the main purposes of the programme and perhaps less successful than it might have been. The private rented stock has fared less well and remains a decade behind the social stock in energy efficiency terms: since 1997, according to the Housing Corporation, average SAP ratings in the social sector

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<sup>58</sup> Q 149

<sup>59</sup> Ev 3113

<sup>60</sup> Ev 125

<sup>61</sup> Communities and Local Government Committee, *Local Government Finance: Council Tax Benefit*, Eighth Report of Session 2006-07, HC 718-I

have risen from 47 to 57 while stock in the private sector has risen from 41 to only 46.<sup>62</sup> The principal reason why private rented stock is less energy efficient than any other sector is as obvious as it appears: as David Salusbury, chairman of the National Landlords Association told us with commendable honesty, “the situation must have something to do with the fact that landlords generally do not live in the properties they rent.”<sup>63</sup>

44. Private rented stock accounts for about 12 per cent of housing stock in England, compared with about 18 per cent for social rented housing and about 70 per cent for privately owned housing. What differentiates the private rented from the social rented sector most clearly is the sheer number of private landlords—some 13,000, approximately, compared to around 1,500 social providers. This in turn means that the vast bulk of landlords own only one or two properties, and in those cases usually as a straightforward investment, often a buy-to-let flat or small house. The essential difficulty in encouraging both the largest and the smallest individual private landlord to commission and pay for energy efficiency improvements in the homes they own arises from the fact that they do not generally live in them and do not therefore generally pay the lighting, heating and water bills. **We recommend that the Government consider introducing a new Code for Existing Homes. This could set a minimum energy performance standard for privately rented housing, aimed, in the short term, at improving the sector’s overall energy performance to at least the significantly higher level achieved in the socially rented sector, and in the long term at delivering the kind of carbon reduction necessary if the national 60 per cent reduction by 2050 is to be achieved. The Government should also consider ways in which it might be possible to enforce such a Code, such as introducing it for Houses in Multiple Occupation or through the private sector licensing system.**

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<sup>62</sup> Ev 272

<sup>63</sup> Q 192

## 4 Financial incentives

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### The Landlords Energy Saving Allowance

45. The problem of the “split incentive” has been repeatedly identified as a reason why privately rented stock performs less well than its social sector counterpart: landlords are required to pay for energy efficiency measures such as better insulation or windows or new heating systems and boilers, but it is the tenant who reaps the physical comfort of better heating or the financial benefit of lower fuel bills. The National Landlords Association accepts that “with the exception of some very ecologically motivated landlords, the decision to make energy efficiency improvements will inevitably be based on financial considerations.”<sup>64</sup> The Association also accepts that landlords themselves none the less bear the primary responsibility for improving their properties, but although the largest such organisation in the country, it represents only 5 per cent of landlords, though, since they are mostly larger ones, a far higher percentage of rented properties; the smallest landlords, with a single property to rent, tend not to belong to representative groups.

46. The Government’s main effort to solve the “split incentive” problem has been the Landlords Energy Saving Allowance (LESA), a scheme introduced in 2004 to provide a tax allowance (until 2015) of up to £1,500 for landlords who invest in cavity wall and loft insulation, and since extended to cover solid wall and hot water system insulation, draught-proofing and floor insulation. The National Landlords Association, the Paragon group and the Association for the Conservation of Energy have all welcomed the scheme, but take-up has been low to date, and it is not clear how well known the scheme is, particularly to smaller landlords owning only one or two properties. **We recommend that the Government seek to spread uptake of the Landlords Energy Saving Allowance, as recommended nearly two years ago by the Sustainable Development Commission. Information on the allowance could be more widely disseminated to small landlords through letting agencies and to all landlords via the landlord tenancy deposit schemes run across England and Wales.**

### VAT reductions

47. A central recommendation of the Sustainable Development Commission’s 2006 Stock Take report was that VAT rates for work related to refurbishing, renovating and otherwise improving homes should be equalised with lower rates applying to new-build construction or demolition works. At present, the former work often attracts full-rate VAT at 17.5 per cent while the latter is exempt from VAT, arguably providing a significant financial incentive for builders, developers and other parts of the construction industry to focus their efforts either on building new homes or on knocking down old ones rather than on improving them. As noted earlier, although the Government itself commissioned the SDC’s work, it has not, in the 18 months since its delivery, directly responded to that or any other recommendation contained in it.

48. The Government appreciates the role that VAT reductions can play as incentives for renovation and refurbishment. In Budgets since 1998, it has progressively reduced the VAT rate to 5 per cent for the professional installation of certain energy-saving materials, including insulation, draught-proofing and some microgeneration technologies. This does not, however, allow for reductions when homeowners choose to install measures themselves. The Construction Products Association backs the extension of a lower VAT rate to DIY work:

Many householders are, for example, quite capable of installing loft insulation themselves and yet they are paying the full rate of VAT on a product the Government must surely want to encourage them to buy. We therefore believe that the Government should reduce the rate of VAT on key energy efficient products, irrespective of how they are installed.<sup>65</sup>

The Chartered Institute of Building Services Engineers (CIBSE) has sought a system that places rather more value on the quality of the installation work. CIBSE has pressed, and continues to press, CLG to provide in the Building Regulations for a “Competent Persons” scheme, under which qualified installers could certify that work on such things as window frame replacement or domestic electrical installations met the required standard.

49. The Commission for Architecture and the Built Environment (CABE) believes the Government should urgently review the VAT regime “which currently disadvantages improvements to the existing housing stock, and works in favour of new build.”<sup>66</sup> CABE also believes that UK VAT rules are out of alignment with practice in other parts of the European Union, an impression the Sustainable Development Commission agrees with, particularly as regards Germany and France.<sup>67</sup> The Government, in fact, is in discussion with its EU partners about introducing a widened reduced VAT rate for energy-efficient products, with the specific intention of encouraging private householders “to make more sustainable decisions.”<sup>68</sup>

50. The Royal Institution of Chartered Surveyors (RICS) refers to the “perverse incentive” that makes it cheaper to knock down a property and rebuild rather than improving it.<sup>69</sup> Friends of the Earth calls the same thing an “anomaly”.<sup>70</sup> Jack Pringle, former President of the Royal Institute of British Architects (RIBA), told us:

we see in projects time and time again that the imbalance between zero-rated on new build and 17.5 per cent on refurbishment can skew the strategy of some projects and can inhibit the final spend, if you like, on elements that would be highly beneficial like renewable energy sources.<sup>71</sup>

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<sup>65</sup> Ev 154

<sup>66</sup> Ev 175

<sup>67</sup> Ev 175, and Q 9

<sup>68</sup> Ev 285

<sup>69</sup> Ev 202

<sup>70</sup> Ev 215

<sup>71</sup> Q 35

51. The then Minister for Housing told us that decisions on VAT rates, as with all taxes, were a matter for the Treasury, not for her (although as she has since become Chief Secretary, this is less true of the person than of the post she then held). That said, she did point out that the Exchequer would lose revenue by effectively subsidising works many people currently undertake without a VAT reduction:

The difficulty with [reduction] is the deadweight cost. Obviously there are a lot of refurbishments that already take place and therefore it would be a hugely expensive thing to introduce if this were to be done right across the board.<sup>72</sup>

The SDC has suggested, however, that VAT rates for both refurbishment works and demolition/reconstruction could be equalised at around 11 or 12 per cent without reducing revenue to the Treasury.<sup>73</sup> **A range of witnesses have pointed out the perversity of differential VAT rates that may in some circumstances make the demolition and reconstruction of a home more financially attractive than its refurbishment or renovation to a higher environmental standard. We recommend that the Government seek to remove this anomaly.**

### Council tax rebates

52. Council tax rebates are a further financial incentive frequently suggested for householders. The SDC and the Association for the Conservation of Energy are among supporters of the idea. Friends of the Earth notes that council tax could be used to apply rebates at any time and not just at the point when a property is bought and sold, allowing wider coverage than, say, a reduction in stamp duty for carrying out repair works.<sup>74</sup> Centrica, the parent company for British Gas, has put a form of rebate into practice by working with 64 local authorities across England to offer householders returns of between £50 and £100, administered via council tax bills, after they have had subsidised cavity wall insulation installed in their homes. The Local Government Association notes that such schemes have proved popular with householders, and agrees that council tax rebates offer “an obvious area for linking the energy efficiency of the property with the level of tax.”<sup>75</sup> **We commend Centrica’s initiative in administering rebates through council tax and urge other energy suppliers to follow suit. We urge the Government to monitor the success of such schemes.**

### Stamp duty rebates or reductions

53. As already noted, stamp duty has also come in for some attention as a potential source of a financial incentive for householders who make energy efficiency improvements. The RICS and the Association for the Conservation of Energy both back the idea, the latter suggesting that purchasers who make improvements to their homes within a set period—perhaps six months after moving in—should receive a rebate.<sup>76</sup> Friends of the Earth,

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<sup>72</sup> Q 289

<sup>73</sup> Sustainable Development Commission, *Stock Take: delivering improvements in existing housing*, July 2006, pp. 21-22

<sup>74</sup> Ev 214

<sup>75</sup> Ev 312

<sup>76</sup> Ev 202 and Ev 99

however, has argued against such a rebate, on the grounds that only property owners would benefit from it and that, since it would apply only when houses were bought and sold, it would take more than a decade to reach even half of all homeowners.<sup>77</sup>

54. The Government has in fact already established the principle of granting stamp duty relief for energy efficient performance—but once again it has chosen to focus on new build rather than existing stock. Last year’s Budget contained a time-limited stamp duty land tax providing relief for zero carbon-rated new developments. This year’s Budget extended the exemption to new flats, retrospectively from 1 October 2007.<sup>78</sup> CLG has said this “will provide a way of stimulating the innovation needed to develop what is currently a niche market into a mass market”.<sup>79</sup> It is hard to see why this logic should apply only to new build, and once again the question arises of why the Government continues to focus on new build to the disadvantage of the existing stock that represents the bulk of the problem. Stamp duty rebates tied to specific improvements to a newly purchased home within a specific time frame would surely equally stimulate innovation and develop fledgling markets in microtechnologies. The obvious way to implement such rebates would be to connect them to the newly introduced Energy Performance Certificates, to which we shall turn in the next chapter. **Having recognised that stamp duty reductions or rebates can incentivise energy efficiency improvement in new-build homes, the Government should apply the same logic to existing homes. Once again, the Government’s emphasis on measures aimed at new development underestimates the carbon reduction contribution required from the vast bulk of the housing stock. We recommend the development of a scheme to provide stamp duty rebates or reductions for all homeowners who act on certain Energy Performance Certificate recommendations within a year of moving in.**

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<sup>77</sup> Ev 213

<sup>78</sup> HM Treasury, *Budget 2008: Stability and Opportunity: building a strong, sustainable future*, 12 March 2008, para 6.73

<sup>79</sup> Department for Communities and Local Government, *Building a Greener Future: policy statement*, July 2007

## 5 Energy Performance Certificates

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### Home Information Packs

55. Since the beginning of 2008, all homes marketed for sale have required a Home Information Pack (HIP), prepared by the seller, a central component of which is an Energy Performance Certificate (EPC). From the autumn, homes marketed for rental will also require the provision of an EPC to tenants. EPCs provide buyers or tenants with an energy efficiency rating for the property concerned, tapering down from A to G, and a list of likely improvements that may raise that rating and, potentially, reduce long-term fuel, lighting and other energy-related costs. CLG estimates the cost of introducing domestic EPCs at £81 million a year, but expects a saving of about 0.9 million tonnes of carbon for each year to about 2020.<sup>80</sup>

### Raising awareness

56. The primary benefit the Government expects to gain from EPCs is a better informed public. Lack of information is regularly identified as one of the main barriers to homeowners and tenants making improvements to their homes which are both cost-effective and energy efficient. The Commission for Architecture and the Built Environment notes that while homeowners were generally concerned about energy usage, “51% knew ‘not very much’ and 19% knew ‘nothing at all’ about sustainable homes in general.”<sup>81</sup>

57. Providing new owners or renters of homes with a straightforward list of options, ranging from simple draught-proofing and insulation to the installation of new microgeneration technologies, is expected to prompt householders to act in both their economic and environmental interests. The Government perceives a market failure in the fact that householders currently pay higher-than-necessary fuel bills when fairly simple measures, such as the better cavity wall insulation needed in up to 9 million homes, could reduce their bills sufficiently to pay back the initial cost in as little as three or four years.<sup>82</sup> The pressure group Beyond Green hopes that EPCs may “perform in a similar way to the energy efficiency labelling of white goods”, a process that has seen, for example, the near extinction of fridges or washing machines graded below C.<sup>83</sup> National Energy Action suggests that if just one in 20 householders acts sufficiently to raise the rating of their home by one grade, some 15,000 tonnes of carbon emissions might be prevented each year.<sup>84</sup>

### The speed of roll-out

58. The information gain to be had from EPCs depends, however, on how quickly they become available to homeowners and tenants. Their inclusion in HIPs and the autumn

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<sup>80</sup> Ev 283

<sup>81</sup> Ev 179

<sup>82</sup> Ev 98 passim

<sup>83</sup> Ev 50

<sup>84</sup> Ev 86

roll-out to rented homes rest on their being provided at the point when a new owner or tenant buys or rents a home. This, the Government says, makes sense because it improves

the provision of information to householders about the energy efficiency of the home they are intending to occupy at the point in time when they are most likely to consider making improvements and most likely to take account of the cost and benefits of such improvements in their forward planning.<sup>85</sup>

From the industry side, the Construction Products Association also notes that those who move home are most likely to spend money on improvements within 18 months of doing so.<sup>86</sup> It is also suggested, for homeowners, that the point at which they move house, and at which the arrangement of a mortgage is necessary, is also the point at which they might borrow enough to fund some improvement to their new home.

59. There are significant problems, however, with providing EPCs primarily at the point of sale or rental. The Green Alliance, in work commissioned by ODPM in 2006, noted that rented housing changes hands roughly every five years on average, and privately owned homes every 15 years.<sup>87</sup> Oxford University's Environmental Change Institute says that half England's owner-occupiers—representing 35 per cent of the total national housing stock—will live in their homes for longer than 11.8 years.<sup>88</sup> The Council of Mortgage Lenders estimates that “delivering EPCs through HIPs means it will take more than 13 years before all home-owners have received one.”<sup>89</sup> Introducing EPCs at point of sale or rental will disseminate increased information to householders, but it will not do it quickly. **Given the urgency with which we need to respond to climate change, the Government needs to find a means of disseminating Energy Performance Certificates more rapidly than can be done purely through a mandatory requirement at the point when a home is marketed for sale or for rent. Further ‘entry points’ for EPCs might include, for example, the points at which planning permission for major works is sought, or at which works are carried out under programmes such as Warm Front or the Carbon Emissions Reduction Target.**

## Translating information into action

60. A second difficulty lies in whether the Government is right to assume new homeowners are most likely to act on the information contained in the Energy Performance Certificates contained in their Home Information Packs. The Energy Saving Trust, largely Government funded, doubts this:

The reality of moving home is that a certificate in the Home Information Pack is likely to be a low priority in relation to the many other things the customer has to do

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<sup>85</sup> Ev 283

<sup>86</sup> Ev 153

<sup>87</sup> Green Alliance, *housing a low carbon society: an ODPM leadership agenda on climate change*, May 2006.

<sup>88</sup> Ev 256

<sup>89</sup> Ev 109

and look out for. And the EPC may well have been forgotten by the time the householder feels in a position to take action.<sup>90</sup>

The Council of Mortgage Lenders, too, thinks new home-buyers have “other things that they would prefer to spend their money on”.<sup>91</sup> The Government hopes that ‘market-based mechanisms’ will arise to provide housebuyers with access to cash to carry out improvements: as yet, however, only four mortgage providers offer ‘green mortgages’, and the industry reports little direct demand among would-be house purchasers.<sup>92</sup>

61. Of course, any homeowner who wishes to commission an Energy Performance Certificate for their home may do so, and may choose to act on its recommendations either while still living there or as a prelude to sale. It may even be, as the Government hopes, that simple economic interest will encourage homeowners to commission an EPC, ahead of seeking to sell their houses, as they try to upgrade their energy efficiency rating in the interests of a higher sale price.<sup>93</sup> There is already some indication that this may be happening: by 6 March 2008, 370,000 HIPs had been prepared but 70,000 more EPCs lodged.<sup>94</sup> **As Energy Performance Certificates contain guidance, rather than mandatory requirements for improvement works, the Government is relying on a mixture of information and incentives to encourage millions of householders to choose to make the improvements for themselves. We recommend that the Government work closely with the mortgage industry to provide market-based financial incentives, such as ‘green mortgages’, that will encourage new homeowners to undertake improvement projects within a short period of their occupying their property.**

62. **We recommend that Energy Performance Certificate ratings be included in all advertisements for houses for sale, as they are for fridges and washing machines, so that prospective buyers may be aware of them from the outset.**

63. The full roll out of EPCs dates only to the beginning of 2008, and it is clearly too soon to judge entirely how far they will prompt new homeowners to act. None the less, EPCs have been required on larger properties since August and September 2007, and some indicative data should therefore be obtainable on whether new homeowners are acting on the recommendations contained in EPCs. **We recommend that the Government publish as soon as is practicable research on the extent to which Energy Performance Certificates are causing householders to undertake the works recommended within six months or a year of moving into new homes. We recommend that they publish as soon as possible the data gained from experience among owners of larger homes since EPCs were introduced on a limited basis in August 2007.**

64. Energy Performance Certificates will also play a part in the work of the new Green Homes Service as it is rolled out nationally this year. The Energy Saving Trust will receive additional funding to enable it to target the lowest-performing homes, and EPCs listing

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<sup>90</sup> Ev 261

<sup>91</sup> Ev 109

<sup>92</sup> Ev 109

<sup>93</sup> Ev 283

<sup>94</sup> HC Deb, 6 March 2008, col 118WS

homes with F or G ratings will be a substantial part of information. **We welcome the use by the new Green Homes Service of the information contained in posted Energy Performance Certificates to target those whose homes are least energy efficient. This should help householders themselves to reduce their fuel bills and improve their living conditions while also contributing to overall carbon emission reductions**

### Guidelines or requirements

65. The recommendations made to householders in EPCs have no statutory force, being instead a series of suggestions for possible action. The Chartered Institute of Housing, in particular, has argued that something stronger is required if homeowners are not simply to ignore them, suggesting that they should contain some element of mandatory work required and be produced at regular intervals, in the same way in which MOT certificates require cars and other vehicles to meet standards annually.

66. Clearly, the analogy with MOT certificates is not precise: a car that fails its MOT can be taken off the road but a house that falls below a certain energy rating still provides someone with a home. None the less, **for the longer term, we recommend that the Government commission research into the idea of requiring householders to obtain a periodic energy performance rating.**

### A matter of trust

67. If EPCs go some way to surmounting the information barrier that householders face in identifying what energy improvements can be made to their homes, they do rather less to overcome a second significant barrier—trust. CABE outlines the problem:

Homeowners' views on the trustworthiness of information provided by estate agents and by the housebuilding industry are fairly negative. For example, a CABE survey of 900 homebuyers carried out in 2004 showed that, in the case of new homes, only 3% of residents surveyed considered housebuilders as very trustworthy sources of information ...<sup>95</sup>

The Construction Products Association also accepts that householders are suspicious of the value for money they get from many improvement works:

One factor that may well discourage many householders from investing in these kinds of improvements is the poor reputation the construction industry has for dealing with small works of this kind. What the industry needs to develop is companies that have a reputation in this area for giving a top class service of value that householders can trust and rely on.<sup>96</sup>

The CPA itself suggests a way in which the EPC could help to achieve this, by offering householders information on who might be capable of doing the works suggested:

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<sup>95</sup> Ev 179

<sup>96</sup> Ev 152

the report that a householder receives needs to be less bland and provide much more of a signpost for what the individual householder needs to do to improve the energy efficiency of the dwelling. It needs to point more clearly to those who can give independent advice on the issues that have been raised and how a householder can get in touch with bona fide companies that will be able to act on the various recommendations that have been made.<sup>97</sup>

**Giving householders information on what might be done to improve the energy efficiency of their homes is only one half of the equation. They also need to know who can do the works, and more importantly given fears about costs, hassle and cowboy builders, who can be trusted to do them cost-effectively and well. We recommend that the Government set a mid-term goal for Energy Performance Certificates to provide information on approved builders, installers and engineers.**

### EPCs and private rental

68. EPCs are not yet required when properties are marketed for rent, but they will be from October 2008. The Housing Corporation has drawn attention to the risk that this may slow the process of re-letting properties, which given the current housing shortage, the Government should seek to avoid.<sup>98</sup> If there is a problem here, it may lie in simple lack of awareness among landlords of the forthcoming requirements to be placed on them. The Paragon group reports awareness is low across the sector, and that landlords “have been late adapting to regulatory change”. This difficulty may be exacerbated by the structure of the private rented sector: as noted in Chapter 3, there are more than 13,000 private landlords and most of them rent only one or two properties, usually not as their main business, with comparatively few belonging to representative landlord organisations. **We recommend that the Government ensure private landlords, large and small, are fully aware of the requirement to introduce Energy Performance Certificates for properties marketed for rent from October 2008, in order to avoid any lengthening of re-letting periods at a time of housing shortage. We recommend that information be disseminated, for example, through letting and estate agencies and landlord tenancy deposit schemes.**

### The importance of accuracy

69. Finally, the impact of EPCs will ultimately rely on the accuracy of the information they contain. Householders will require confidence that the ratings their homes are given and the works recommended are appropriate and necessary. Calor Gas raises the point that certificates are drawn up using a standard methodology—the reduced data Standard Assessment Procedure (rdSAP)—that may bear little resemblance to the actual costs that householders pay for fuel, lighting and so on.<sup>99</sup> Parity Projects points out that the EPC software measures the likely performance of a house, but takes no account of the number of occupants:

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<sup>97</sup> Ev 152

<sup>98</sup> Ev 273

<sup>99</sup> Ev 276

A home occupied by a single occupant uses 55% more electricity and 61% more gas per capita than one with a four person nuclear family.<sup>100</sup>

The Association of Home Information Pack Providers also says assumptions built into the software used to create EPCs “can sometimes lead to inaccurate predictions”. It crystallises the long-term difficulty this may cause for the credibility of the certificates:

Most occupiers are fairly well aware of their fuel bills and ... an inaccurate energy cost prediction can undermine their trust and confidence in the EPC ... Put simply, if the public do not understand and accept the information provided by the EPC they will not act on it.<sup>101</sup>

**The introduction of Energy Performance Certificates represents a substantial leap forward in the provision of home energy efficiency information. We encourage the Government to maintain the momentum likely to be gained from this by seeking continuous improvement in the quality of information provided to householders by EPCs.**

### The holistic approach

70. While EPCs provide increased information at the level of individual households, they may also provide an opportunity to create more and better information at a wider level. The Chartered Institute of Housing, for example, suggests that the ratings and information contained in EPCs might be made available to local authorities, enabling them to build a comprehensive picture of the energy efficiency, or inefficiency, of the whole stock, both social and private, in their areas.<sup>102</sup> The Association of Home Information Pack Providers has also suggested that a national audit of energy efficiency would be of value to both local and central policy makers, and to the energy industry:

It would provide a definitive snapshot by area and property type, reveal the full extent of measures required to meet targets for reductions in carbon emissions from the domestic sector, and provide a reliable evidence base for decisions on targeting resources both centrally and locally.<sup>103</sup>

There may well be value in obtaining information that might lead to more holistic approaches to energy efficiency improvements across whole streets, neighbourhoods or larger areas. The Association for the Conservation of Energy points out, for example, that

An area-based approach can ... save time and reduce costs ... If a road of houses is tackled together, more can be done in a shorter period, which reduces the costs and complexity of installation.<sup>104</sup>

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<sup>100</sup> Ev 191

<sup>101</sup> Ev 105

<sup>102</sup> Ev 57

<sup>103</sup> Ev 105

<sup>104</sup> Ev 99

The single biggest difficulty in spreading energy efficiency measures across the housing stock lies in engaging millions of individual householders. Allied with this is the problem that actions taken by individual householders are generally piecemeal and partial, particular to their own homes. Given the economies of scale and wider environmental benefits that may be achieved from a more holistic approach, we recommend that the Government consult local authorities on how area-based programmes for basic home improvements, such as cavity wall or loft insulation, might be offered across significant sections of the housing stock rather than, as at present, in one home at a time, and thereby carried out more efficiently and cost-effectively for households which wish to participate.

## 6 Breaching the barriers to change

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### Not reinventing the wheel

71. In the clamour surrounding an urgent response to climate change, it is tempting to concentrate, as the Government has to some extent done, on how the homes of the future can be made as carbon-free as possible, or to focus on Eco-Towns and microgeneration, on Combined Heat and Power systems and personal wind farms. It is equally easy to forget that far more apparently mundane means of achieving rapid reductions in the UK's carbon emissions are much more easily available to improve quickly and simply the housing stock already standing. As one witness to our inquiry said, cavity wall insulation is not a 'sexy' subject.<sup>105</sup> It is, however, part of the range of long-existing, familiar, comparatively cheap and comparatively easy-to-install technologies already freely available to the average householder. As the Government notes, with the exception of some emerging technologies

the products and materials required to improve the energy efficiency of existing homes are well known and have well established markets.<sup>106</sup>

72. Some 9 million homes in Britain contain unfilled cavity walls. The Sustainable Development Commission estimates that filling those cavities could save around 2.62 million tonnes of carbon. A further 7 million homes, usually those built before 1919, have solid walls, and, although questions arise about the aesthetics and appropriateness of either externally cladding or internally insulating them (see Chapter 8), a potential 4 million tonnes of carbon could be saved there.<sup>107</sup> The Glass and Glazing Federation estimates that a fifth of the heat lost from a single-glazed house goes out through the windows, and that savings of around 5 million tonnes of carbon could be made from replacing even older double-glazing with more recent energy efficient windows.<sup>108</sup>

73. The Energy Saving Trust estimates that a carbon emissions reduction of 20 per cent—one third of the total the Government is committed to by 2050—could be swiftly achieved through the insulation of cavity walls, lofts and hot water tanks, improvements to heating, such as better controls, thermostatic radiator valves and high-efficiency condensing boilers, and more efficient lighting.<sup>109</sup> It believes that

given the right policy framework, almost all of the potential for the cost-effective technologies currently in existence could be fulfilled by 2020 ... This would leave thirty years, 2020-2050, to achieve the remaining 38% reduction through other technologies.<sup>110</sup>

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<sup>105</sup> Q43

<sup>106</sup> Ev 281

<sup>107</sup> Sustainable Development Commission, *Stock Take delivering improvements in existing housing*, July 2006, p. 31

<sup>108</sup> Ev 82

<sup>109</sup> Ev 260

<sup>110</sup> Ev 260

This will not, however, happen at current rates of uptake: the EST also estimates that some cavity walls will remain unfilled by 2050, for example.<sup>111</sup> The difficulty lies in finding a means of ensuring that householders themselves have enough incentive to make the rate of adoption of existing measures rise.

74. The Energy Saving Trust estimates that installing the basic, cost-effective measures outlined above could save the average household in the UK £250 to £300 a year (in turn recouping the cost of average investment within three years). Since it is likely that energy costs will rise in the near and foreseeable future, the savings could in fact be greater than that. It would appear, therefore, that there is a significant market failure here. Market theory rests on the assumption that consumers will act in an economically rational manner on the information available. In this case, it seems safe to assume that the information available is the root of the problem.

## Barriers

75. A number of reasons are routinely advanced to explain why householders do not choose to commission or undertake comparatively straightforward home improvement works with fairly quick payback periods.

### *Barriers to Home Improvement*

Hassle factor—the difficulty of commissioning work and the inconvenience and disruption caused during installation

Trust—lack of confidence in identifying reliable installers or contractors, and suspicion of energy suppliers who come bearing energy saving deals.

Up-front costs—even with short payback periods, the up-front cost may be a significant disincentive to many works. In addition, the *perception* of what measures may cost has an influence

Information/knowledge—what can be done, what grants are available, where advice may be had, and how much things really cost

Technological immaturity—the limited availability of many zero or low-carbon technologies makes them not just hard to find, but expensive

Risk—Households may expect to move before a measure pays back its cost; additionally, there may be uncertainty about new or unfamiliar products

Other priorities—householders often have higher, more visible or cosmetic home improvement priorities, such as extensions or kitchen or bathroom overhauls.

*Table adapted from EHCC 64, Government memorandum*

76. Government has a role to play in helping householders overcome all those barriers, but the direct provision of finance through grants and schemes and the widespread provision of accurate information on which householders can act with confidence are the two most obvious routes to driving up the uptake of basic energy efficiency measures, unless it chooses to force movement by setting regulatory standards. Some steps are being taken to increase both incentives and information. On the incentive side, the Government estimates that the Carbon Emissions Reduction Target will speed up the installation of

<sup>111</sup> Ev 260

cavity wall insulation as suppliers seek to identify a further 3 million homes by 2011. The additional information provided to householders by the introduction and increased spread of the Energy Performance Certificate and the establishment of the Green Homes Service are expected to result in increased individual action, too.

## Green Homes Service

77. Later in 2008, the Energy Saving Trust will, on behalf of the Government, launch a new Green Homes Service, with an annual budget of £26 million, aimed specifically at surmounting the information barrier.<sup>112</sup> Householders will be able to seek a personalised home energy check that provides advice on energy saving, water saving, waste reduction and recycling. Information will also be given on what grants, discounts or other financial support might be available from energy companies or the Government, and DEFRA, the principal sponsoring Government department for the scheme, believes this will reduce confusion about what support is available.<sup>113</sup> The Energy Saving Trust is expected to begin operating pilot schemes from 1 April and to have a service available across the country by December. The Trust currently offers advice to those who seek it; additional funding under the new scheme is expected to make it more proactive: householders whose EPCs contain ratings of F or G will be specifically targeted with improvement information.<sup>114</sup> **We welcome the creation of the new Green Homes Service from April 2008 and urge the Government to support its rapid introduction nationwide. The provision of a ‘one-stop’ source of information for householders is a significant step towards overcoming the ‘information barrier’ to quick, simple and cost-effective action in many homes. We urge the service to provide information on competent suppliers and installers, and to monitor and report on the effectiveness of the works carried out. We expect in the future to examine further how the introduction of the service both widens information and leads to real improvement in individual homes.**

## Smart meters

78. The widespread roll out of real-time or smart meters for fuel may, however, offer even greater potential to influence millions of individual householders by providing them with the kind of instant cost and usage information that can lead to quick behaviour change. The 2007 White Paper on Energy set out an expectation that smart meters will be installed in all the UK's 26 million or so homes over the next decade. Beama plc estimates that the installation of a smart meter leads householders to cut energy consumption by between 5 and 10 per cent. Since the simplest means of all of reducing carbon emissions is to reduce the use of carbon-producing fuels, considerable benefits lie in the information gain such meters may provide. Ofgem, the energy regulator, is currently managing trials of smart meters in more than 15,000 households.

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<sup>112</sup> HM Treasury, *Budget 2008: Stability and Opportunity: building a strong, sustainable future*, 12 March 2008, para 6.68

<sup>113</sup> DEFRA, new release, 19 November 2007.

<sup>114</sup> Energy Saving Trust, parliamentary briefing note, January 2008

79. Several other European Union countries are already ahead on the provision of smart meters; Italy, for example, already has 33 million in operation.<sup>115</sup> The impetus behind their introduction is also the EU: the Energy Services Directive, to be implemented in May 2008, requires the provision of individual meters that provide householders with details of actual consumption, and bills that do the same. Real-time units meet those objectives; smart meters fulfil them to a greater degree.

80. The impact of either type of meter on consumption by individual families is unquestioned. Nicholas Doyle, project manager for Places for People, which has installed display meters in several of its projects, says there is an immediate and dramatic effect:

You should see the difference in terms of the way the family operates. The children run around the house turning items off (turning items on to begin with) but it makes that connection that we lost a number of years ago between turning a switch on and what the cost impact or carbon impact of that is.<sup>116</sup>

**We welcome the forthcoming introduction of smart meters along with fuel bills that more comprehensibly tell householders just how much gas and electricity they use. We believe that suppliers should roll the meters out nationally as swiftly as can be achieved. The meters have a particularly important role to play in overcoming the information barrier that prevents simple, cost-free action in millions of households across the whole UK.**

81. The Government has also announced that households should, from early 2008, be able to get a free display unit from their energy supplier, and that all new and replacement electricity meters from May 2008 should include a real-time electricity display.<sup>117</sup> Real-time displays offer less information than full-scale smart meters—the latter give the householder not just real-time information on energy usage and the likely cost, but a two-way connection with their supplier, the possibility of flexible pricing and much more detailed information on patterns of use, which may lead householders to tailor their use accordingly. Real-time units are, however, considerably cheaper (about a fifth of the cost) and could be rolled out across Great Britain within about two to three years rather than the estimated 10 years it will take to install smart meters everywhere.

82. Given the commitment to installation of full-scale smart meters within 10 years, energy suppliers have objected that moving first to real-time displays represents a waste of money and effort, and may even delay smart meters themselves. Centrica, the parent company of British Gas, notes:

We accept [real-time displays] are an interesting stop-gap for interested consumers until smart meters can be installed ... we don't see merit in mandating [them] as meter replacement which will be expensive and will dilute industry focus in delivering universal smart meters.<sup>118</sup>

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<sup>115</sup> Ev 158

<sup>116</sup> Q 211

<sup>117</sup> Ev 289

<sup>118</sup> Ev 49

EDF, a major electricity supplier, similarly notes that real-time displays will provide consumers with less information than a full roll-out of smart meters.<sup>119</sup> Ofgem has also warned that installation of real-time displays could be “a costly distraction from from the bigger prize of introducing truly smart meters.”<sup>120</sup> In supporting the Government’s policy, however, the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, Joan Ruddock MP, cited the need for an urgent response to climate change as a reason for taking temporary action immediately:

It is important to get this in and not just to wait until we can manage smart metering for everybody.<sup>121</sup>

**We recommend strongly that the provision of real-time display units must not become a proxy for smart meters and must not be allowed to delay the full roll-out of smart meters to every home in the country within a decade.**

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<sup>119</sup> Ev 66

<sup>120</sup> Ofgem, personal letter to Anne Main MP, 17 December 2007

<sup>121</sup> Q 254

## 7 Newer technologies

83. The point will come at which all the ‘low-hanging fruit’ has been plucked. As outlined above, while cavity wall insulation and the like can have quick impacts on carbon reduction, the day will come when all the cavity walls that are going to be filled have been filled or sealed, all the windows draught-proofed, and all the boilers lagged. The Energy Saving Trust has estimated that by about 2020, most of the benefit to be gained from the familiar types of technology outlined above will have been obtained. The Under-Secretary of State for Environment, Food and Rural Affairs told us:

we have to start with the fact that we are looking at millions of homes that are so poorly insulated that if they were to microgenerate you would simply be putting the energy into the atmosphere. It is a matter of tackling, first of all, the “low-hanging fruits” essentially: it is about insulation; it is about cavity wall insulation... Until that is done, it is very difficult to argue the case that it would be economically in the best interests of the whole country, the homes, or, indeed, the energy supply companies, to focus on microgeneration.<sup>122</sup>

This is clearly sensible and correct. The next stage, however, in the three decades from 2020 to 2050 will be the development and implementation of newer, less familiar and, at least at present, more expensive technologies.

84. Microgeneration has yet to become a fully established solution to home energy emission problems in the UK. Uptake has been limited to date, as shown in the table below, and a mass market which might make microgeneration products cheaper and more readily available is yet to develop.

*Box 3 - Estimated microgeneration installations in the UK – end 2004<sup>123</sup>*

<b><i>Estimated microgeneration installations in the UK – end 2004</i></b>		
<b>Technology</b>	<b>Number of Units</b>	<b>Notes and applicability</b>
Solar Thermal	80,000 installed	Fully commercial, but technology improving.
Wind	700 installed	Typically roof/wall mounted, mass market domestic sector(<3kW)
MicroCHP	200 installed	Mass market for gas boiler replacements
Photovoltaics	1100 installed	Technology becoming more established
Fuel Cells	10 installed	High electrical efficiency & therefore carbon offset
Ground Source Heat	400 installed	Particularly attractive for new build sector
Biomass heating	150 installed	Wood pellet boilers
Micro-hydro	100 installed	Water Mill conversions

*Source: Adapted from Micropower memorandum, Ev 264-72*

<sup>122</sup> Q 247

<sup>123</sup> Source: ‘Our energy challenge: Microgeneration Strategy: Power from the people’ Department of Trade and Industry, March 2006. <http://www.berr.gov.uk/files/file27575.pdf>

85. The defining feature of microtechnologies is that they

reduce or eliminate fossil fuels by utilising more than 90% of the fuel productively or powered by renewable sources.<sup>124</sup>

The principal technologies concerned work as follows:

*Box 4: principal microgeneration technologies*

### **Principal microgeneration technologies**

#### **Solar Thermal Hot Water Heating**

Solar thermal is the most commonly installed form of solar energy currently in use. It can typically provide almost all hot water requirements during summer months and about 50 per cent all year round. There are three main components for domestic hot water systems: solar panels, a heat transfer system, and a hot water cylinder. The solar panels, or collectors, are usually fitted to the roof and collect heat from the sun's radiation. This heat is used to raise the temperature of the household water and is delivered by the heat transfer system which takes the heated water to the hot water cylinder for storage until use. Typical installation costs for a domestic plate collector system are around £2,000 to £3,000 and for an evacuated tube system around £3,500 - £4,500.

#### **Solar Photovoltaic (PV) Electricity Generation**

Photovoltaic generates electricity from sunlight. Small-scale modules are available as roof-mounted panels, roof tiles and conservatory or atrium roof systems. The performance of a PV system will depend on the size of the system, the type of PV cell used and the nature of the installation. The average domestic system is usually between 1.5 and 2 kilowatt peak in size, and costs are around £4,000 to £9,000 per kWp. A typical system may produce enough electricity to supply almost half of an average family's annual supply.

#### **Micro-Wind Turbines**

Wind turbines harness the wind to produce electrical power. The efficiency of a domestic system will depend on factors such as location and surrounding environment and the electricity output is usually between 2.5 and 6 KWs, but can be as low as 1 KW. The latest development in domestic wind turbine technology is roof-mounted turbines for installation on domestic dwellings. These mini-wind turbines give a nominal output of 1 KW and are designed to generate energy from low wind speeds. They are typically mounted on the gable end of buildings although in some cases can be attached to the building side-walls. Systems up to 1 KW will cost around £3,000 and larger systems between 1.5 KW and 6 KW will cost around £4,000 to £18,000.

#### **Micro Combined Heat and Power Units (CHP)**

These systems are usually fuelled on gas, although some can burn a range of other fuels, and produce electrical power and thermal energy from the single fuel source. The two major types of engines used in microCHP systems are:

- Reciprocating engines—The electrical output of this type of micro-combined heat and power (microCHP) units typically start at about 5 KW offering around 10- 12 KW of thermal output.
- Stirling engines—These external combustion engines have a sealed system using an inert working fluid, usually helium or hydrogen. They range in size from ½ KW upwards and are currently undertaking extensive field trials with a view to having production units in 2008-09.

About 200 MicroCHP systems were undergoing field trials in households in 2004, and cost approximately £3,000. Mass-produced units are expected to be more cost-competitive.

### Heat Pumps

A heat pump moves heat energy from one place to another and changes the temperature from lower to higher. An example of a commonly known heat pump is a domestic refrigerator. Where heat pumps are used for heating applications, heat is removed from the source (ambient air, water, soil or bedrock) and then discharged where the heat is needed. Where cooling is required, the reverse happens and heat is removed and discharged into air, water, soil or rock. A typical system costs between £6,400 and £9,600 plus the price of the distribution system, although this is variable with each property and location. Based on current fuel prices, a ground source heat pump can be cheaper than space heating fuelled by oil, LPG and electric storage heaters.

### Micro-Hydro

Harnessing hydro power at micropower level means levels typically less than 100 KW and involves utilising naturally flowing water on land, usually rivers and streams. The type of turbine that is submerged into the water depends upon the site, geological formation of the land and flow of water present. The performance and size of micro-hydro schemes is very site specific with plant ranging from a few hundred watts to 100 KW, with the higher range used for commercial schemes. For a low head system costs are around £4,000 per KW for projects under 10 KW (not including civil works) and for a medium head scheme, there is a fixed cost of £10,000 and then about £2,500 per KW for projects under 10 KW. A typical 5 KW domestic scheme may cost around £20,000 to £25,000; however, unit costs drop for larger schemes.

### Biomass

Biomass heating involves the use of commercial energy crops in the form of fast-growing trees such as willow or poplar for woodchips or waste wood products such as sawdust, pallets or untreated recycled wood for pellets. The performance of biomass heating for a domestic property depends on the chosen system, usually either a space heating only, or a central heating and hot water system. Stand-alone stoves provide space heating for a room, and can be fitted with a back-burner to provide water heating. Boilers connected to a central heating and hot water system are larger and usually fuelled by logs, chips and pellets. Typical costs for stand-alone room heaters are between £1,500 and £3,000. Running costs are based on the type of fuel.

### Fuel Cells

A fuel cell uses hydrogen and oxygen (from air) in an electrochemical reaction. Unlike technologies which "burn" fuel, with fuel cells the conversion takes place electrochemically without combustion. Fuel cells are used in portable applications (mobile phone and laptop battery replacements), mobile applications (cars, buses, planes, etc) and stationary applications (as UPS, standby power, distributed microCHP or as large MW electrical generator).

*Source: Micropower Council, Ev 264-72*

86. As is clear from table 1, the current uptake of microtechnologies is low in the UK. The list of barriers to take-up listed above again applies: concerns about costs, lack of information about the availability and impact of products, and about the means of installing them, and uncertainty about the return to be had from them all prevent individual homeowners and landlords from paying for and installing them. In some cases, the need for planning permission for works—home wind generators, for example—may also prove off-putting, and CLG is currently consulting on whether planning restrictions in this area should be loosened.<sup>125</sup>

87. Uncertainty is a significant barrier to take-up. The National Housebuilding Council warns against consumers being “exposed to unnecessary risks and used to trial zero-carbon

technologies and systems that have not undergone thorough testing and accreditation.”<sup>126</sup> The Housing Corporation is undertaking research into what programmes social landlords should consider in order to “moderate the risk that landlords may undertake in implementing technologies which are inappropriate or insufficiently developed.”<sup>127</sup>

88. The major barrier is, however, cost. The major home improvement supplier B&Q’s most recent research found 72 per cent of its customers citing cost as the main thing deterring them from taking up microgeneration, and 97 per cent citing cost as an important factor.<sup>128</sup> The cost, for example, of installing an average sized solar hot water system in a new-build home is between £2,500 and £4,000, with the problems of installing systems in existing housing likely to add significant further costs.<sup>129</sup> The Environmental Change Institute at the University of Oxford suggests full low-carbon refurbishment of a home can cost between £20,000 and £60,000.<sup>130</sup> The Sustainable Development Commission agrees with the lower end of that figure, citing £25,000 to £30,000.<sup>131</sup>

89. Grants are available for some microgeneration works. The Low Carbon Buildings Programme has seen £21.5 million committed to projects in buildings including homes, schools and businesses. About a third of it has gone to about 4,000 homes.<sup>132</sup> The Government, via DEFRA and the Department for Business, Enterprise and Regulatory Reform, has also announced an “Environmental Transformation Fund” which will provide £370 million to support the development and spread of new technologies. The Micropower Council reports, however, that the number of grant-supported installations remains low—just over 11,000 between 2003 and 2007.<sup>133</sup> The number of non-grant-supported installations is unknown, meaning the precise spread of the new technologies is also unknown. **We recommend that the Government undertake research into the number of non-grant-supported microtechnology installations in the UK to provide an accurate picture of their spread and take-up.**

90. The cost of installing microgeneration technology can, of course, be offset by the reduced cost of lower energy usage. Alternatively, some technologies can provide an income stream to householders, most obviously those which produce electricity that can be sold back to the National Grid. Ofgem, the energy companies’ regulator, estimates that about 1,500 customers producing electricity are doing just that at present.<sup>134</sup> The drawback is that although those consumers are receiving the wholesale price of electricity for the surplus that they produce, this still means it will take an average 20 years or more to return the cost of installing the average household microgeneration unit (based on solar panels or

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<sup>126</sup> Ev 52

<sup>127</sup> Ev 275

<sup>128</sup> Ev 63

<sup>129</sup> HC Deb, 16 October 2007, Col 1039W

<sup>130</sup> Ev 256

<sup>131</sup> Ev 218-23

<sup>132</sup> Ev 285

<sup>133</sup> Ev 266

<sup>134</sup> Ofgem, *Press release: Better Information and Easier Access to Incentives Needed for Customers Selling Electricity Generated in the Home*, 11 March 2008, and *Factsheet 74: Reviewing the Microgeneration Market*, both at [www.ofgem.gov.uk](http://www.ofgem.gov.uk)

roof-top wind turbines usually). Several other countries have offered significantly higher returns on householder investment: in Germany, for example, householders who supply electricity to the equivalent of the Grid receive a Government-subsidised “feed-in” tariff of up to four times the wholesale price.<sup>135</sup> The Government is currently reviewing financial incentives for microgeneration. **We recommend that as part of its current review of financial incentives the Government investigate the potential for subsidising feed-in tariffs to encourage the uptake of home microgeneration technologies.’**

## Market development

91. A further significant barrier to the spread of microtechnologies is simply lack of availability. Information on what is available is poor and the costs are high largely because a fully fledged market for micropower products has not yet developed in the UK, in the way that it has in various other countries. Germany, for example, employs around quarter of a million people in the renewables sector; the UK employs about 25,000. Germany has 200 times the solar capacity and 10 times the wind energy capacity that Britain currently possesses.<sup>136</sup> The Government's strategic approach rests on the new build sector: as zero-carbon homes and Eco-Towns prove the value of microgeneration technologies, the argument goes, so they will become more visible to the wider population and so the unit cost will fall as demand for them rises. As the Minister for Housing told us:

The real prize will be if what we do on new build creates enough economies of scale to bring down the costs of those technologies that you can then apply them in a retrofitting way to existing properties as well.<sup>137</sup>

92. There is general agreement that this approach could expand the market, but means of speeding up market development have been suggested, too. The Micropower Council suggests that setting specific microgeneration take-up targets would give private sector investors confidence to invest in new manufacturing and installation capacity.<sup>138</sup> The National Housing Federation believes extending the requirement in the Code for Sustainable Homes that social housing achieve level 3 from 2008 to private sector homes would also provide a spur to the industry to innovate and invest.<sup>139</sup> Finally, Oxford University's Environmental Change Institute argues the inverse that using public sector investment to install microtechnologies more widely would pump prime the industry's innovation and development:

By creating a market for innovative refurbishment projects, the public sector will attract innovators from the private sector and send a signal to the construction industry supply chain that new products and techniques are set to take a significant share of the market.<sup>140</sup>

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<sup>135</sup> Brenda Boardman, *Home Truths: A Low-carbon strategy to reduce UK housing emissions by 80% by 2050*, University of Oxford's Environmental Change Institute, the Co-operative Bank and Friends of the Earth, November 2007, p. 62

<sup>136</sup> Ev 158

<sup>137</sup> Q 76

<sup>138</sup> Ev 266

<sup>139</sup> Ev 72

<sup>140</sup> Ev 257

The Stern review of the economics of climate change argued strongly that investment now would prevent the payment of even higher future costs.

*Box 5: Experience in Germany*

### **Germany**

When we asked Professor Anne Power of the Sustainable Development Commission what the Government's priority should be to improve the performance of our existing housing stock, she replied: "copy Germany".<sup>141</sup>

Germany contains approximately 17.3 million residential buildings (compared with 26 million in the UK, and in spite of a higher population). Approximately 35 per cent are owner-occupied, compared with 70 per cent owner-occupation in the UK.

As noted above, Germany already has a considerably more developed microtechnology market than the UK possesses, with consequently higher levels of skills in its workforce and consequently lower prices for many products as unit costs fall. Professor Power notes, for example, that solar panels are about half the price offered in the UK, with home insulation and external wall cladding materials also considerably cheaper.<sup>142</sup>

Two years ago, the German Government launched a 20-year programme intended to bring all its pre-1984 dwellings up to current new-build standards by 2025. The programme will cost an estimated 1 billion euros.

Domestic energy users in Germany may also benefit substantially from using microgeneration technologies to produce and sell electricity. Users are paid a Government-subsidised "feed-in" tariff for supplying power to the German national grid, with the sums paid significantly above the market value of the electricity produced. This is credited with encouraging homeowners to purchase and install relevant microtechnologies in the expectation of a fairly quick payback of the initial cost. The Environment, Food and Rural Affairs Committee has recommended development of a similar tariff in the UK, and further details may be found in its Report on Climate Change: the "citizen's agenda", from 2006-07.<sup>143</sup>

## **Planning, construction and engineering skills**

93. One final point needs to be made about market development. A market can develop only as fast as products can be produced, supplied and installed. Several witnesses to our inquiry have identified significant skills gaps that will act as barrier to market spread unless skills develop. The Commission for Architecture and the Built Environment identifies a need to raise skills across the board:

local authorities are currently under-resourced (both building control and planning departments) and engineering consultants are struggling to find appropriately skilled employees.<sup>144</sup>

Brian Mark, on behalf of CIBSE, but himself director of an engineering consultancy, confirmed this:

<sup>141</sup> Q 2

<sup>142</sup> Q 14

<sup>143</sup> Environment, Food and Rural Affairs Committee, *Climate Change: a "citizen's agenda"*, Eighth Report of Session 2006-07, HC88-I, para 131, and passim

<sup>144</sup> Ev 178

To be honest the planning department cannot afford to pay salaries that I would pay for such people, and I cannot find them. It is the same with building controls.<sup>145</sup>

The Royal Institution of Chartered Surveyors suggests lifelong, and compulsory, training in sustainability should become a core principle for everyone working in the built environment.<sup>146</sup> The National House Building Council says current evidence calls into question the ability of local authorities, especially smaller ones, to “deal with the technical aspects of sustainability.”<sup>147</sup> Jack Pringle, former President of the Royal Institute of British Architects, believes the simple pace of change has left planning departments behind:

All the professions have existed in a world where they have not had to carry out low-energy designs and yet almost immediately, within the space of one or two years, a completely new design technology needs to be brought to bear.<sup>148</sup>

Dr Hywel Davies, CIBSE, expands on this point:

building control officers tend to come from a background where they have specialised in structural issues. They are, rightly, more concerned about ensuring buildings do not fall down or burn down. They generally see CO2 emissions as being a lower priority.<sup>149</sup>

And Nicholas Doyle of the housing provider Places for People sets out the consequences of this:

[It is] the poor old planning officer at the bottom who has to deal with all of these planning applications, who has to turn them round in X number of days or whatever it is. They are hugely under-resourced, they have no confidence with which to make long-term decisions whatsoever, and they are really struggling, and until we start investing in planning departments or finding an alternative method, whether that is allowing renewables by default or whatever it is, we are going to have an enormous bottleneck in terms of installing renewables and other technologies in existing homes.<sup>150</sup>

94. The depth of concern about planning skills has led us to launch our own separate inquiry into that subject, and detailed analysis of the problem and recommendations for action will follow later this year. For now, however, we note that the Local Government Association has called for the development of a national strategy aimed at significantly raising skill levels in the planning, construction and retrofitting trades.<sup>151</sup> In addition, we note that the Sustainable Development Commission called in July 2006 for greater attention in construction training to the skills needed for refurbishment of existing

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<sup>145</sup> Q 176

<sup>146</sup> Ev 205

<sup>147</sup> Ev 52

<sup>148</sup> Q 46

<sup>149</sup> Q 179

<sup>150</sup> Q 233

<sup>151</sup> Ev 303

housing.<sup>152</sup> **We call on the Government to make an early assessment of skills deficits across the planning, construction and retrofitting industries, and to engage in dialogue with the construction industry on improving training in skills required for refurbishment and renovation of existing homes. We intend to return to this area in more detail later this year during our inquiry into Planning Skills.**

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<sup>152</sup> Sustainable Development Commission, *Stock Take: delivering improvements in existing housing*, July 2006, p. 21

## 8 Older buildings

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### Character and tradition

95. Approximately one in four homes in Britain were built 90 years or more ago, long before Carbon Emissions Reduction Targets, Building Regulations and Energy Performance Certificates were thought of. England has more than 370,000 listed buildings, often constructed to environmental standards that would not pass muster today, but equally often jewels in the nation's architectural crown. A further one million unlisted buildings stand within England's 9,734 conservation areas.<sup>153</sup> The Building Regulations specify (in Regulation 9) that buildings of special architectural or historic interest and those in conservation areas do not have to comply with the energy efficiency requirements set out in Part L where compliance would unacceptably alter their character or appearance.

96. Beyond those buildings stand a further 4 million plus built before 1919, which, even if they are of no special architectural or historical interest, are often among the most prized and aesthetically attractive in the country, even if they are among the least efficient in terms of energy or carbon emissions. The English House Condition Survey (EHCS) reveals a close correlation between the age of a building and its energy performance. Homes built before 1919 have an average SAP rating of 39. Houses built after 1990 average 65.<sup>154</sup> The sheer number of pre-1919 homes is what makes this a distinctly British problem: Germany, for example, often cited as the most advanced EU country in energy efficiency terms, has the advantage of possessing a considerably newer housing stock, built to consequently more energy-efficient aware standards.

### Balancing conservation and modernisation

97. The question arises, then, of how older homes can cut their carbon emissions without destroying their visual character. CABE suggests that the “task of retrofitting the oldest homes to adequate energy performance standards in a visually unobtrusive way [is] particularly demanding.”<sup>155</sup> The Environmental Change Institute at Oxford University argues for more robust intervention in older buildings than has perhaps been permissible to date:

Heritage conservation needs to be balanced against climate change mitigation—more interventions should be possible in heritage/conservation buildings than are currently allowed. Re-creation of original features (eg cornicing on top of internal wall insulation) should be seen as desirable, not rejected because of the intransigent position of conservation bodies, which argues that no original features should ever be lost.<sup>156</sup>

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<sup>153</sup> Ev 247

<sup>154</sup> Ev 279

<sup>155</sup> Ev 181

<sup>156</sup> Ev 258

Something of the same sense of frustration may have motivated the suggestion from Brian Mark, Director of Fulcrum Consulting on behalf of CIBSE, that particularly inefficient houses might usefully be overlaid with “unemployed conservation officers”.<sup>157</sup>

98. There are competing perspectives and priorities here: if climate change truly is “the greatest challenge facing the world today”, as the Government says, and if carbon emission reductions of up to 60 per cent are required from our housing stock as a whole, then radical action is likely to be required in at least some of the older housing stock. A tipping point exists at which marginal aesthetic or traditional reasons may have to give way to environmental imperatives. Even Heritage Link accepts that people “may have to be prepared for visually intrusive measures on much loved buildings.”<sup>158</sup>

99. That said, English Heritage is right to raise the “considerable risk from inappropriate or poorly executed adaptations to improve energy efficiency.”<sup>159</sup> For example, climate change itself may well bring warmer winters, calling into question the idea that greater insulation of all houses is an untrammelled benefit. Change that merely meant householders spending more on carbon-emitting air-conditioning systems during the summer months would hardly be beneficial. The point is that such insulation measures as are carried out must both prevent heat from escaping when it is needed yet allow homes to remain cool when external temperatures rise. The insulation, in particular, of the permeable solid walls favoured by Victorian and Edwardian builders must therefore be sensitively carried out.

### Standard Assessment Procedure and older housing

100. Heritage organisations also question whether the Standard Assessment Procedure (SAP) rating system used to grade houses is entirely suited to older stock. The energy performance of individual buildings is measured on a scale from 1 to 100 under a system that takes account of, among other things, the fuel efficiency of heating systems and the thermal efficiency of the building fabric, the type of construction, the shape, the size, the orientation, and window sizes. English Heritage fears that the system is less well adapted to measuring the performance of houses built with thick solid walls using permeable materials than those which contain cavity walls. Many Victorian and some Edwardian houses fall into the former category, raising the question of whether the SAP rating system accurately reflects the overall energy efficiency of those older homes:

The fundamental difference between modern and traditional construction is that modern buildings use impervious materials such as cement and plastic cladding to keep moisture out, whilst traditional buildings were built using thick permeable materials such as solid brick and stone masonry, timber and lime plasters, which can absorb excess moisture and release it slowly by evaporation.<sup>160</sup>

101. The Society for the Protection of Ancient Buildings suggests owners of older housing may be encouraged by builders versed in modern methods to seal the fabric of their

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<sup>157</sup> Q 187

<sup>158</sup> Ev 134

<sup>159</sup> Ev 247

<sup>160</sup> Ev 249

housing to save energy.<sup>161</sup> English Heritage notes that this frequently alters the way older buildings were designed to work, effectively trapping damp in the home because moisture can no longer escape.<sup>162</sup> The Institute of Historic Building Conservation explains:

Modernisation techniques based on air-tightness and ill-considered positioning of vapour barriers are often incompatible with property built traditionally in which the ability of the fabric to move and breathe is vital for its long-term safety and future.<sup>163</sup>

102. A balance clearly needs to be found between the principles of conservation and carbon reduction. Former RIBA President Jack Pringle explored that balance in evidence to us:

There are some houses, clearly, listed buildings, that are so inefficient but so worth keeping that exceptions need to be made of them and at the other end of the scale I am sure there are houses which are beyond hope and it might be better to take them down and rebuild them but I do not think they are in the forefront of our minds. We think most of the existing building stock is susceptible to treatment.<sup>164</sup>

We agree with Mr Pringle. **The bulk of our housing, however old and leaky it may be, is capable of the kind of improvement that will deliver the necessary reduction in carbon emissions without destroying the visual character and appearance that makes it uniquely ours. We need neither a mass demolition programme followed by the construction of replacement Eco-homes nor to preserve every last pre-1919 building precisely as it was on the day it was built. The trick will be to find imaginative solutions as new markets and skills develop to bring new ideas and technologies to homes in which the “low-hanging fruit” of draught exclusion and insulation has already been plucked.**

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<sup>161</sup> Ev 211

<sup>162</sup> Ev 249

<sup>163</sup> Ev 145

<sup>164</sup> Q 53

## 9 Conclusion

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103. We give the final word, once again, to Mr Pringle:

if you look back over the last, say, 30 years, the transformation that has already gone on the housing stock, from coke boilers to natural gas boilers, the amount of double glazing that has gone on, how everybody has insulated their loft, vast change has happened in recent memory, so to say that by 2050 we cannot make substantial changes is unimaginable.<sup>165</sup>

**Reducing carbon emissions by 60 per cent over the next 42 years requires remarkable change in our habits, our fuel consumption and the technologies we use to build and run our homes. Yet even the most superficial glance back 42 years is enough to remind us that interplanetary space travel, mobile telephones, the internet, and even heart transplants were then yet to be achieved. The question underlying this Report is whether the Government can encourage millions of individuals and families, be they in rented flats or homes of their own, to rise to the challenge; but it is, indeed, unimaginable to say that we cannot make substantial change.**

## Conclusions and recommendations

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1. The amount of energy we use to heat and light our homes now needs to decline, and sharply, if carbon emission reductions from the housing stock are to contribute towards the 60 per cent reduction in emissions by 2050 to which the United Kingdom is committed. (Paragraph 4)
2. There is clear consensus that the Government needs to engage as fully with reducing carbon emissions from the existing housing stock as it has with reducing those from new development. (Paragraph 7)
3. The Government's understandable desire to build improvements into future housing has led it to give insufficient priority to action on the vast bulk of the housing stock represented by the 23 million homes already there in England and Wales. A much clearer focus on what must be done to bring existing housing up to required energy efficiency standards is essential. (Paragraph 9)
4. We recommend that the Government measure the impact of including in the Building Regulations consequential improvements provision affecting homeowners in time to inform the next Building Regulations review. (Paragraph 15)
5. We urge the Government to follow the lead set by Uttlesford District Council in requiring homeowners who extend their homes to make consequential improvements to the rest of their property as part of the planning consent process. We recommend that Part L of the Building Regulations be amended to require householders making substantial improvements, such as building an extension, to ensure that the carbon footprint of their improved home is at least no greater than before. (Paragraph 16)
6. Following the successful introduction of the Code for Sustainable Homes, we recommend that the Government produce as a matter of urgency a similar Code for Existing Homes. We further recommend that that Code contain minimum performance standards, perhaps based on Standard Assessment Procedure ratings. These standards should apply to all housing stock, although differential ratings may be acceptable in the short to medium term, but no later than 2016, for social housing, privately rented stock and owner-occupied homes, all of which begin from different baselines. A separate standard might also be set, in the short to mid term, for housing constructed before 1919, which is currently the least energy efficient, but often most prized, in the United Kingdom. (Paragraph 19)
7. We recommend that the Government include specific energy performance improvement standards in any social housing improvement programme that follows Decent Homes in 2010. In particular, we recommend that any future programme contain a specific minimum, rather than average, Standard Assessment Procedure target for all social housing. We seek the Government's view on the Local Government Association's suggestion that that minimum SAP rating should be 65. (Paragraph 26)

8. We recommend that as part of the Government's review of the maximum grant available under Warm Front limited flexibility be introduced into the scheme to allow the maximum level of £2,700 to be disregarded in cases where the most vulnerable households would not receive sufficient assistance to heat their homes adequately and as efficiently as possible. (Paragraph 28)
9. The Government should loosen restrictions on Warm Front eligibility to allow tenants living in HMOs to have works done on their homes. (Paragraph 30)
10. While it is to be hoped that the supplier obligation to be established for the period from 2011 to 2020 may be able to concentrate more fully on carbon reductions alone, the significant rise since 2003 in the number of households spending more than a tenth of their income on heating their homes justifies the continued inclusion of fuel poverty reduction aspirations within the three-year Carbon Emissions Reduction Target being set in 2008. (Paragraph 40)
11. The Government should take every step possible, including amending the Data Protection Act if required, to ensure that local authorities may use the information they hold to target households likely to be suffering from fuel poverty. It should also consider whether provision of data to appropriate third parties for the same purpose may be desirable and achievable. (Paragraph 42)
12. We recommend that the Government consider introducing a new Code for Existing Homes. This could set a minimum energy performance standard for privately rented housing, aimed, in the short term, at improving the sector's overall energy performance to at least the significantly higher level achieved in the socially rented sector, and in the long term at delivering the kind of carbon reduction necessary if the national 60 per cent reduction by 2050 is to be achieved. The Government should also consider ways in which it might be possible to enforce such a Code, such as introducing it for Houses in Multiple Occupation or through the private sector licensing system. (Paragraph 44)
13. We recommend that the Government seek to spread uptake of the Landlords Energy Saving Allowance, as recommended nearly two years ago by the Sustainable Development Commission. Information on the allowance could be more widely disseminated to small landlords through letting agencies and to all landlords via the landlord tenancy deposit schemes run across England and Wales. (Paragraph 46)
14. A range of witnesses have pointed out the perversity of differential VAT rates that may in some circumstances make the demolition and reconstruction of a home more financially attractive than its refurbishment or renovation to a higher environmental standard. We recommend that the Government seek to remove this anomaly. (Paragraph 51)
15. We commend Centrica's initiative in administering rebates through council tax and urge other energy suppliers to follow suit. We urge the Government to monitor the success of such schemes. (Paragraph 52)
16. Having recognised that stamp duty reductions or rebates can incentivise energy efficiency improvement in new-build homes, the Government should apply the same

logic to existing homes. Once again, the Government's emphasis on measures aimed at new development underestimates the carbon reduction contribution required from the vast bulk of the housing stock. We recommend the development of a scheme to provide stamp duty rebates or reductions for all home-owners who act on certain Energy Performance Certificate recommendations within a year of moving in. (Paragraph 54)

17. Given the urgency with which we need to respond to climate change, the Government needs to find a means of disseminating Energy Performance Certificates more rapidly than can be done purely through a mandatory requirement at the point when a home is marketed for sale or for rent. Further 'entry points' for EPCs might include, for example, the points at which planning permission for major works is sought, or at which works are carried out under programmes such as Warm Front or the Carbon Emissions Reduction Target. (Paragraph 59)
18. As Energy Performance Certificates contain guidance, rather than mandatory requirements for improvement works, the Government is relying on a mixture of information and incentives to encourage millions of householders to choose to make the improvements for themselves. We recommend that the Government work closely with the mortgage industry to provide market-based financial incentives, such as 'green mortgages', that will encourage new homeowners to undertake improvement projects within a short period of their occupying their property. (Paragraph 61)
19. We recommend that Energy Performance Certificate ratings be included in all advertisements for houses for sale, as they are for fridges and washing machines, so that prospective buyers may be aware of them from the outset. (Paragraph 62)
20. We recommend that the Government publish as soon as is practicable research on the extent to which Energy Performance Certificates are causing householders to undertake the works recommended within six months or a year of moving into new homes. We recommend that they publish as soon as possible the data gained from experience among owners of larger homes since EPCs were introduced on a limited basis in August 2007. (Paragraph 63)
21. We welcome the use by the new Green Homes Service of the information contained in posted Energy Performance Certificates to target those whose homes are least energy efficient. This should help householders themselves to reduce their fuel bills and improve their living conditions while also contributing to overall carbon emission reductions (Paragraph 64)
22. For the longer term, we recommend that the Government commission research into the idea of requiring householders to obtain a periodic energy performance rating. (Paragraph 66)
23. Giving householders information on what might be done to improve the energy efficiency of their homes is only one half of the equation. They also need to know who can do the works, and more importantly given fears about costs, hassle and cowboy builders, who can be trusted to do them cost-effectively and well. We recommend that the Government set a mid-term goal for Energy Performance

Certificates to provide information on approved builders, installers and engineers. (Paragraph 67)

24. We recommend that the Government ensure private landlords, large and small, are fully aware of the requirement to introduce Energy Performance Certificates for properties marketed for rent from October 2008, in order to avoid any lengthening of re-letting periods at a time of housing shortage. We recommend that information be disseminated, for example, through letting and estate agencies and landlord tenancy deposit schemes. (Paragraph 68)
25. The introduction of Energy Performance Certificates represents a substantial leap forward in the provision of home energy efficiency information. We encourage the Government to maintain the momentum likely to be gained from this by seeking continuous improvement in the quality of information provided to householders by EPCs. (Paragraph 69)
26. The single biggest difficulty in spreading energy efficiency measures across the housing stock lies in engaging millions of individual householders. Allied with this is the problem that actions taken by individual householders are generally piecemeal and partial, particular to their own homes. Given the economies of scale and wider environmental benefits that may be achieved from a more holistic approach, we recommend that the Government consult local authorities on how area-based programmes for basic home improvements, such as cavity wall or loft insulation, might be offered across significant sections of the housing stock rather than, as at present, in one home at a time, and thereby carried out more efficiently and cost-effectively for households which wish to participate. (Paragraph 70)
27. We welcome the creation of the new Green Homes Service from April 2008 and urge the Government to support its rapid introduction nationwide. The provision of a 'one-stop' source of information for householders is a significant step towards overcoming the 'information barrier' to quick, simple and cost-effective action in many homes. We urge the service to provide information on competent suppliers and installers, and to monitor and report on the effectiveness of the works carried out. We expect in the future to examine further how the introduction of the service both widens information and leads to real improvement in individual homes. (Paragraph 77)
28. We welcome the forthcoming introduction of smart meters along with fuel bills that more comprehensibly tell householders just how much gas and electricity they use. We believe that suppliers should roll the meters out nationally as swiftly as can be achieved. The meters have a particularly important role to play in overcoming the information barrier that prevents simple, cost-free action in millions of households across the whole UK. (Paragraph 80)
29. We recommend strongly that the provision of real-time display units must not become a proxy for smart meters and must not be allowed to delay the full roll-out of smart meters to every home in the country within a decade. (Paragraph 82)

30. We recommend that the Government undertake research into the number of non-grant-supported microtechnology installations in the UK to provide an accurate picture of their spread and take-up. (Paragraph 89)
31. We recommend that as part of its current review of financial incentives the Government investigate the potential for subsidising feed-in tariffs to encourage the uptake of home microgeneration technologies.’ (Paragraph 90)
32. We call on the Government to make an early assessment of skills deficits across the planning, construction and retrofitting industries, and to engage in dialogue with the construction industry on improving training in skills required for refurbishment and renovation of existing homes. We intend to return to this area in more detail later this year during our inquiry into Planning Skills. (Paragraph 94)
33. The bulk of our housing, however old and leaky it may be, is capable of the kind of improvement that will deliver the necessary reduction in carbon emissions without destroying the visual character and appearance that makes it uniquely ours. We need neither a mass demolition programme followed by the construction of replacement Eco-homes nor to preserve every last pre-1919 building precisely as it was on the day it was built. The trick will be to find imaginative solutions as new markets and skills develop to bring new ideas and technologies to homes in which the “low-hanging fruit” of draught exclusion and insulation has already been plucked. (Paragraph 102)
34. Reducing carbon emissions by 60 per cent over the next 42 years requires remarkable change in our habits, our fuel consumption and the technologies we use to build and run our homes. Yet even the most superficial glance back 42 years is enough to remind us that interplanetary space travel, mobile telephones, the internet, and even heart transplants were then yet to be achieved. The question underlying this Report is whether the Government can encourage millions of individuals and families, be they in rented flats or homes of their own, to rise to the challenge; but it is, indeed, unimaginable to say that we cannot make substantial change. (Paragraph 103)

# Formal Minutes

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**Monday 17 March 2008**

Members present:

Dr Phyllis Starkey, in the Chair

Mr Clive Betts  
John Cummings  
Jim Dobbin

Mr Greg Hands  
Anne Main  
Mr Bill Olnier

***Existing Housing and Climate Change***

Draft Report (*Existing Housing and Climate Change*), proposed by the Chairman, brought up and read.

*Ordered*, That the Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 103 read and agreed to.

*Resolved*, That the Report be the Seventh Report of the Committee to the House.

*Ordered*, That the Chairman make the Report to the House.

*Ordered*, That written evidence received in connection with the inquiry be reported to the House for printing with the Report.

*Ordered*, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Tuesday 25 March at 4.20 pm]

## Witnesses

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### Monday 12 November 2007

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**Professor Anne Power**, Commissioner, Sustainable Development Commission Ev 1

**Jack Pringle**, immediate past President, and **Bill Gething**, Chair of Sustainable Futures Group, Royal Institute of British Architects Ev 6

**Councillor Ian Mearns**, Vice-Chair, Local Government Association Environment Board and Deputy Leader of Gateshead Council, and **Dr Philip Webber**, Head of the Environment Unit, Kirklees Council, and **Oliver Myers**, Interim Head of Sustainability, London Borough of Camden and Chair, UK HECA, Local Government Association Ev 10

### Monday 19 November 2007

**Sarah Webb**, Chief Executive designate, and **Richard Baines**, Director of Sustainable Development, Black Country Housing Group, Chartered Institute of Housing Ev 17

**Gill Owen**, Chair, Public Utilities Access Group, Fuel Poverty Advisory Group (FPAG) Ev 20

**Brian Mark**, FCIBSE, Director of Fulcrum Consulting, and **Dr Hywel Davies**, CIBSE, Technical Director, Chartered Institution of Building Services Engineers Ev 22

**David Salusbury**, Chairman, National Landlords Association Ev 26

**David Cowans**, Chief Executive, and **Nicholas Doyle**, Project Director (Sustainability), Places for People Ev 28

### Tuesday 11 December 2007

**Rt Hon. Yvette Cooper MP**, Minister for Housing, and **Bob Ledsome**, Deputy Director, Climate Change and Sustainable Development, Department for Communities and Local Government Ev 33

**Joan Ruddock MP**, Parliamentary Under-Secretary of State, and **Jackie Janes**, Head of Climate Change and Energy, Household and Markets, Department for Environment, Food and Rural Affairs Ev 33

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6	Chartered Institute of Housing	Ev 56
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37	Black Country Housing Group Ltd	Ev 137
38	National Landlords Association	Ev 139
39	Institute of Historic Building Conservation	Ev 144
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41	Construction Products Association	Ev 150

42	Places for People Group	Ev 156
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44	The Association of British Insurers	Ev 172
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46	The Commission for Architecture and the Built Environment	Ev 174
47	John K Preston	Ev 182
48	Parity Projects	Ev 186
49	PLUS Housing Group	Ev 199
50	Royal Institute of Chartered Surveyors (RICS)	Ev 201
51	Oldham Council	Ev 210
52	The Society for the Protection of Ancient Buildings	Ev 210
53	Friends of the Earth	Ev 211
54	Sustainable Development Commission	Ev 218
55	Mitsubishi Electric UK	Ev 238
56	Groundwork UK	Ev 242
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58	WWF – UK	Ev 250
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68	Centrica plc (Supplementary)	Ev 301
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70	Fuel Poverty Advisory Group (Supplementary)	Ev 315
71	The Chartered Institution of Building Services Engineers (Supplementary)	Ev 316

## List of unprinted evidence

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The following memoranda have been reported to the House, but to save printing costs they have not been printed and copies have been placed in the House of Commons Library, where they may be inspected by Members. Other copies are in the Parliamentary Archives, and are available to the public for inspection. Requests for inspection should be addressed to The Parliamentary Archives, Houses of Parliament, London SW1A 0PW (tel. 020 7219 3074). Opening hours are from 9.30 am to 5.00 pm on Mondays to Fridays.

Houses Under Threat Group

## Reports from the Committee during the current and previous Sessions

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The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

### Session 2007–08

First Report	Coastal Towns: the Government's Second Response	HC 70
Second Report	DCLG Annual Report 2007	HC 170
Third Report	Local Government Finance—Supplementary Business Rate: the Government's Response	HC 210
Fourth Report	Work of the Committee in 2007	HC 211
Fifth Report	Ordnance Survey	HC 268
Sixth Report	Refuse Collection: Waste Reduction Pilots	HC 195
Seventh Report	Existing Housing and Climate Change	HC 432

### Session 2006–07

First Report	The Work of the Committee in 2005-06	HC 198
Second Report	Coastal Towns	HC 351 ( <i>Cm 7126</i> )
Third Report	DCLG Annual Report 2006	HC 106 ( <i>Cm 7125</i> )
Fourth Report	Is there a Future for Regional Government?	HC 352-I ( <i>Cm 7119</i> )
Fifth Report	Refuse Collection	HC 536-I
Sixth Report	Equality	HC 468 ( <i>Cm 7246</i> )
Seventh Report	Local Government Finance—Supplementary Business Rate	HC 719
Eighth Report	Local Government Finance—Council Tax Benefit	HC 718
First Special Report	Local Government Finance—Council Tax Benefit: Government's Response to the Committee's Eighth Report of Session 2006-07	HC 1037
Second Special Report	Refuse Collection: Government's Response to the Committee's Fifth Report of Session 2006-07	HC 1095