

Ashden Awards for Sustainable Energy

From practice to policy



A briefing paper

By the Institute for Public Policy Research
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About the Ashden Awards for Sustainable Energy

The Ashden Awards for Sustainable Energy were founded in 2001 to reward and encourage the widespread use of local sustainable energy in the UK and the developing world. UK Ashden Award winners, numbering more than 40, are delivering innovative local sustainable energy solutions through low carbon technologies, behaviour change and energy efficiency measures. They are drawn from sectors including small businesses, local authorities, charities and schools.

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Foreword

What can the government do to help local sustainable energy become part of the fabric of communities across the UK? The answer to this question will partly determine whether we can create a low-carbon economy and meet the ambitious targets we have set to reduce greenhouse gas emissions.

Some answers to this question lie in this briefing which is the result of detailed consultations with our UK winners - businesses, local authorities, community groups and charities - who suggest ways to overcome the barriers they face in trying to deliver renewable energy, energy efficiency and other forms of local sustainable energy in their communities.

Their responses, which are based on substantial know-how and best practice in their individual fields, give us an idea of the enormous challenges ahead, but also a sense of hope that it is possible, with the political will and appropriate policies, to meet them. Although these practitioners acknowledge that there have been a few policy successes, there are also clear failures. In particular they highlight problems of funding – the amount and the lack of consistency in funding schemes – and planning barriers. They call for continuous funding streams and much stronger policy coherence to promote sustainable energy. All are unanimous in wanting to help improve on the past record and be part of a future that is much brighter.

I set up the Ashden Awards for Sustainable Energy in 2001 to reward sustainable energy champions across the UK and developing world that are bringing social and economic benefits to their communities. Since then, in addition to our annual Awards scheme, we have developed a broader support programme for our winners. In the UK our emphasis is increasingly on promoting the exemplary work of our winners and in particular helping them influence policy on sustainable energy in every way we can. This briefing is part of that effort.

The contributions made in this study show us that the government can learn a great deal by working in partnership with local providers of sustainable energy - like our Award-winners.

This briefing is aimed at policy makers at all levels and anyone else who would like to see local sustainable energy become a visible and integrated part of every community across the country, bringing all the wider social benefits that that means.

This report is the precursor for a larger research-based report we plan to publish early in 2010 which will follow up on these initial findings and recommendations.

A handwritten signature in black ink, reading "Sarah Butler-Sloss". The signature is written in a cursive, flowing style with large loops and a prominent initial 'S'.

Sarah Butler-Sloss, Executive Chair and Founder, the Ashden Awards for Sustainable Energy

Executive Summary¹

This Briefing Paper draws on the experience of the winners of the Ashden Awards for Sustainable Energy to make practical policy recommendations aimed at increasing the scale and scope of sustainable energy in the UK. The paper is based on research carried out with UK winners of the Ashden Awards through an online survey of winners and in-depth interviews with a smaller group of awardees.

Local sustainable energy at the household and community level has a range of potential benefits. The first of these is emissions reduction: 65 per cent of household CO₂ emissions could be saved by distributed generation by 2050 if supportive policies were put in place. Another benefit is improved energy security through reduced demand for imported gas: almost a fifth of UK energy demand could be met through community scale generation with the right support. Community energy can also make the transition to a low carbon economy real for people, with schemes they can see and own in their own neighbourhood, helping build political support for sustainable energy policy.

Many organisations across the UK – from businesses to local authorities and charities – are actively demonstrating the benefits of local sustainable energy. However, despite their good work, the full potential of sustainable energy is far from being realised in the UK. While the energy efficiency of housing in the UK has increased in the last ten years, over four-fifths of UK houses have yet to be fully insulated. Similarly, while installed renewable energy capacity, both large-scale and local, has increased in the UK in recent years, it still accounts for only around two per cent of total UK electricity generation.

Winners of the Ashden Awards have a valuable perspective on bridging the gap between the UK's aspirations and delivery of a sustainable energy. Many were pioneers of sustainable energy well before it became popular and have a wealth and diversity of experience to share. Some focus mainly on energy efficiency, while others are specialists in renewable energy, and within that on renewable heat and renewable electricity. Most who focus on energy efficiency work with households, whereas those who focus mostly on renewable technologies tend to work with organisations such as schools, local councils, businesses, and other institutions. Two are designers or manufacturers of renewable technologies.

Through our research, we have aimed to understand their perspectives on the policies that are working to deliver sustainable energy in the UK and those that are not, and how the barriers that remain to delivering sustainable energy could be overcome.

Policy successes

Some policy interventions have clearly been successful in enabling growth in the sector. The single most important policy for Ashden Award winners has been the Energy Efficiency Commitment (EEC) and its successor the Carbon Emissions Reduction Target (CERT), placing an obligation on energy suppliers to provide funding for carbon saving measures to households. A third of Award winners that were surveyed said that many of their sustainable energy successes would not have been achieved without the programme.

The next most useful set of interventions cited were the support programmes (including funding) of the Energy Saving Trust and the Carbon Trust, along with fuel poverty programmes such as Warm Front. Another useful policy for Award winners has been the Home Energy Conservation Act – largely because it almost instantly created sustainable energy champions within local authorities with housing responsibilities, and ensured that home energy efficiency received a level of resource and political attention at the local level.

¹ References for the executive summary are available in the full report. www.ashdenawards.org

Several interviewees also highlighted the importance that building regulations, such as the Code for Sustainable Homes, have had on increasing the uptake of renewable energy and energy efficiency measures. Changes in the planning regime were also felt to have been useful, particularly the Merton rule adopted by local authorities requiring all new developments to generate 10 per cent of their energy needs from on-site renewables.

The Low Carbon Buildings Programme (LCBP) was also cited as a policy that had helped many Award winners, not always because of the capital grants it has provided (which have been problematic), but because of the requirement for training and certification.

Policy barriers

However, several existing policies and approaches have failed to meet practitioners' needs. Funding - the amount and consistency of it – was cited as the key barrier by 80 per cent of respondents, making it difficult to plan work, and meet expectations.

The 'stop-start' nature of some policies has been particularly problematic. EEC/CERT and the LCBP were both cited as suffering from this flaw. Under EEC/CERT, there have been periods of inactivity when energy suppliers have hit their targets and stopped carrying out energy efficiency works. This has proved very problematic for the installation companies. The LCBP has also posed problems because funding has not been available in a continuous manner. There was concern among some interviewees that the transition from the LCBP to the introduction of the proposed feed-in tariff could cause this to happen again.

Award-winning businesses are finding it difficult to access capital, which is a significant barrier at start-up and when seeking to expand their operations. The credit crunch is exacerbating the situation. Some Award winners have experienced difficulties in securing financing for their own projects. Others fear that business may dry up as clients are unable to access finance or shift their focus away from environmental concerns.

The lack of householder engagement and interest is also clearly a significant barrier to Award winners working to reduce carbon emissions from the household sector, particularly in the absence of regulation to compel action. Levels of public engagement and awareness of sustainable energy and climate change were seen as low and further behind other countries, particularly in Europe.

Planning permission was highlighted as a significant regulatory barrier, particularly for larger-scale sustainable electricity and heat projects. Other barriers were also identified, the most significant being the difficulty faced in retrofitting homes, particularly those which are 'hard to treat' (i.e. those with solid walls or off the gas network). Measures for these homes attract higher costs. The complexity of connecting smaller sustainable electricity schemes to the grid was also cited as a barrier. Several interviewees have also encountered difficulties in recruiting the technical skills needed, pointing to a lack of training opportunities.

Policy solutions

Award winners were asked about their recommendations for future policy, the types of policies which are most needed and which ones they would prioritise to overcome the barriers facing the growth of sustainable energy in the UK.

Not surprisingly, alongside the issues of coherence and continuity, addressing the problems with funding was seen as a priority. The policies which were perceived as most likely to help in the delivery of their work were sustainable energy capital grants and a renewable heat incentive. Several other policies including energy efficiency grants, a feed-in tariff and a soft loans scheme rated a close second.

Many Award winners were keen to see a continuous funding mechanism rather than the

current 'bidding' process which is increasingly being favoured by programmes like the Community Energy Efficiency Fund (CEEF). In particular, funding targeted locally for area based approaches, suitable for off-gas-grid and solid-walled properties, was suggested. In addition, more funding dedicated to capacity building in the sector was requested, including for technical and project design, management support and for training and skills development.

The role of local authorities and the embedding of targets at the local level were seen as an important means of improving the implementation of national sustainable energy policy. Several Award winners were keen to see targets for local authorities to create buy-in and ownership of sustainable energy implementation, accompanied by consistent financial support to ensure effective delivery. Local authorities' role in the supply chain and their procurement capacity were also seen as integral to embedding local sustainable energy. In addition, enhanced training and resources for planning officers on sustainable energy in local authorities was seen as important.

More broadly, most Award winners thought much greater policy coherence to promote sustainable energy was necessary, with a strong, long-term policy framework needed to avoid the problems encountered by the 'stop-start' nature of some policy interventions to date. Many were keen to see greater connection between different policies, providing a more cohesive message to stakeholders, with for example, more integration through education, skills and training programmes, and Regional Development Agency (RDA) business support programmes.

Almost 87 per cent of Award winners stated that they would like greater involvement or input into the development of Government policy on sustainable energy. Winners favoured a range of different options for the form this input should take, including interviews and workshops. However, concerns about the efficacy of the Government's policy consultation processes and how much influence they genuinely have on outcomes would need to be addressed.

Conclusions and recommendations

Looking across all the areas of local sustainable energy, two common themes can be identified. One issue that was emphasised again and again is the importance of government and indeed all political parties committing to a long-term strategy, offering predictable funding flows. The other common theme was the need to develop policies that are not just about the large energy companies, but also about local and often smaller actors, including local authorities, charities and smaller companies. Award winners referred to the importance of partnerships between local authorities and charities, who are often the main intermediaries with community organisations. Government could provide briefings and help on what different partners want, how they operate and what they can offer.

The kinds of organisations that the Ashden Awards celebrate are often highly innovative and creative, but they have to work around a lack of resources and support, largely because the key policy instruments have not been tailored to their needs, but rather to those of the large energy suppliers. This makes it difficult for them to plan and deliver sustainable energy to the communities they work with in a predictable way. Hence a place should be found within the policy framework for these kinds of organisations to play a more active role and access more funding. To help ensure that happens, further research or experimentation is needed into a number of possible changes to policy including:

Energy efficiency

- A regional allocation element could be required in CERT activity by energy suppliers, which would allow local authorities to plan how to work with suppliers better.
- A separate type of programme could be introduced that is more area-based, as the Government is proposing in the Community Energy Saving Programme (CESP). The

Government should experiment with at least part of the CESP being delivered with resources under the direct control of local actors.

- Any new Suppliers Obligation replacing CERT should enable organisations such as local authorities and community groups, not just the large energy suppliers, to play a more active role and to directly control funding, so that wider energy services can be provided. Whatever form it takes, a smooth transition to the next phase of the obligation on suppliers is critical.
- Regulation, rather than engagement, has now transformed the market for condensing boilers, and work is needed to establish whether similar legislation should drive changes in local sustainable energy.
- Work is needed to develop local sustainable energy as a career and to systematise the accompanying training and qualifications in home energy.
- Government should also use its enormous procurement power to require energy efficiency and renewable energy right down the public sector supply chain.

Renewable electricity

- The Government's proposal to open up a feed-in tariff (FIT) for small scale electricity generation, which would give a fixed return for each kWh, will give more certainty for small generators and is broadly welcomed.
- The FIT needs to be set at the right level, high enough to induce growth in each technology given its costs. Good Energy suggested that 9p/kWh is about right for small wind and hydro-power, but that 22p/kWh or more will be needed for solar PV. Also, as with the proposed banding of the Renewables Obligation, the FIT should be introduced as quickly as possible.
- The FIT should not be seen as the sole answer to encouraging small scale renewables. The successful German approach has involved a package that included capital grants and Government-guaranteed loans. With finance currently a problem, the latter is a particularly important area of policy for Government to consider.
- Beyond the economics of schemes, clearer and more supportive policy in other aspects of bringing projects through is also important. The Scottish Renewable Fund's help with planning, finance, and technical support should be replicated in England and Wales, where many community groups have lots of enthusiasm but not all have the necessary skills and knowledge to see projects through.

Renewable heat

- The Government's proposal for a Renewable Heat Incentive was broadly welcomed by Award winners. However, as with a feed-in electricity tariff, winners were keen to stress the importance of maintaining capital grants as part of a wider support package.
- A re-assessment of policy is needed across the full range of areas that affect heat policy, including health and safety, building regulations and planning to ensure the development of renewable heat is fully supported.
- Better ways need to be found to share knowledge about practice elsewhere – in the UK and the rest of the world. The Energy Saving Trust has recently set up a Community Action for Energy programme that includes such information sharing, but its experience should be reviewed and consideration given to more systematic ways of sharing successful experience from abroad within the UK.

The Ashden Awards for Sustainable Energy should continue to act as a conduit between Award winners and policy-makers to help ensure that the types of policy changes outlined above are explored fully and the voice of organisations who really deliver sustainable energy locally is heard. In the coming months, there will be invaluable opportunities to influence policy as the Government develops its plans to meet the carbon budgets set by the Committee on Climate Change, the European 2020 renewable energy target, and the Heat and Energy Saving Strategy. These opportunities should be seized to transform the prospects of sustainable energy at the local level in the UK

1. Introduction

This Briefing Paper aims to take the experiences of winners of the Ashden Awards for Sustainable Energy and make practical policy recommendations in order to increase the scale and scope of local sustainable energy in the UK. Winners of the Awards share a common commitment to achieving a significant reduction in carbon emissions in the UK. Award winners carry with them a wealth of experience which they are keen to input into the development of new Government policy on sustainable energy. This experience could significantly benefit policy development and should be used effectively.

This Briefing Paper has been prepared by the Institute for Public Policy Research for the Ashden Awards for Sustainable Energy. It is based on research carried out with UK winners of the Ashden Awards for Sustainable Energy from 2003 to 2008. This research included an online survey of winners and in-depth interviews with a smaller group.

The aims of the research were to:

- Understand and use the experiences of the Ashden Award winners in delivering local sustainable energy to input into policy decisions on household energy efficiency, sustainable heat and sustainable electricity, and local sustainable energy more broadly;
- Understand the immediate policy barriers to implementing sustainable energy programmes;
- Explore the factors which are critical to a successful project; and,
- Inform the development of a larger piece of work on the role of local sustainable energy in meeting the 80 per cent carbon emissions reduction target.

Local sustainable energy

Sustainable energy for the purposes of this Briefing Paper includes energy efficiency, sustainable heat and sustainable electricity. It incorporates a range of technologies from those which are currently cost-effective, such as cavity wall and loft insulation, through to renewable heat and electricity generation technologies, such as biomass, solar, wind and heat pumps. It also covers a range of sizes from installations at the individual household level, through to community schemes and larger scale generation.

Local sustainable energy, both at the household and community levels, has a range of benefits.² The first of these is clearly emissions reduction. A study for London by PB Power claims that carbon emissions could be reduced by over 25 per cent by 2025 on a decentralised scenario.³ A report for the Energy Saving Trust suggests that 65 per cent of household CO₂ emissions could be saved by community distributed generation by 2050 if supportive policies were put in place.⁴ These savings arise both from the use of local sustainable energy and from the greater efficiency of fuel use.

Meanwhile, with nearly 45 per cent of an average UK citizen's contribution to CO₂ emissions coming from heating space and water alone, heat conservation measures can also play a significant role in emissions reductions.⁵ If everyone in the UK simply installed cavity wall insulation, for example, CO₂ emissions could be cut by over seven million tonnes a year – enough to cut overall household emissions by four per cent.⁶

² Element Energy (2008) *Power in Numbers: The benefits and potential of distributed energy generation at the small community scale. A report for the Energy Saving Trust*, London: EST; Greenpeace (2005) *Decentralising Power: An Energy Revolution For The 21st Century*

³ PB Power (2006) *Powering London into the 21st Century* (London: Mayor of London/Greenpeace).

⁴ Power in numbers, the benefit and potential of distributed energy generation at the small community scale, EST (2008)

⁵ Ippr (2006), *Positive Energy: harnessing people power to prevent climate change*, London: ippr.

⁶ <http://www.energysavingtrust.org.uk/Resources/Useful-statistics>

In addition to the environmental benefits of decentralised energy generation using renewables, proponents argue that such projects will improve energy security (by reducing the demand for imported gas), and will reduce new investment requirements in electricity transmission and distribution networks.⁷

The culture of UK electricity generation is decidedly large scale, and it is clear that many in industry and Government find it hard to believe that community scale projects could play anything but a marginal role in energy supply, despite counter-examples from Scandinavia and Germany. The recent Element Energy/EST study which suggested, with supportive policies, up to 18 per cent of UK energy demand could be met through community scale generation is therefore important.⁸

However, perhaps even more decisive than the potential for carbon reduction is the political potential of low and zero carbon energy projects. Energy production is a distant and abstract issue for most people, so local energy schemes have the potential to make the transition to a low carbon economy much more real for people, with schemes they can see, and own, in their own neighbourhood. This factor has been important for building political support for renewables policy in Germany.⁹

Ashden Award winners

The purpose of the Ashden Awards has been to bring to light the inspiring sustainable energy solutions being delivered in the UK and in the developing world and to help ensure that they are spread more widely. Most winners of the Ashden Awards for Sustainable Energy have been demonstrating the benefits of local sustainable energy on the ground for in excess of five years, and many for up to 15 to 20 years.

There is a wealth of experience amongst Ashden Awards winners, many of whom were pioneers of sustainable energy well before it became popular. While most recognise that the world's response to climate change and sustainable energy is very different now than it was ten years ago, their experiences over this time are insightful and instructive for the development of policy and practice.

This study focuses on the Ashden Awards for Sustainable Energy winners in the UK, excluding schools (a summary of UK Award Winners is contained in Appendix 1). Award winners are diverse in both their organisations and their work (see Table 1). The current Award process distinguishes between different types of winner – local authority, charity or business. However, they can be usefully categorised in two other ways.

One is the primary focus of the projects that they work on and have been awarded prizes for. Some (many local authority winners, for example) focus mainly on energy efficiency, while others are specialists in renewable energy, and within that on renewable heat and renewable electricity. Some organisations straddle all of these areas.

There are some common policy concerns that affect all of these sectors, and the Ashden approach to 'local sustainable energy' is of course desirable in encouraging joined-up thinking across energy saving and renewables. However, the policy landscape and to some extent the barriers facing organisations working in these different areas are nevertheless distinct, and this must be recognised if effective recommendations are to be developed on the basis of Ashden Award winners' experience.

⁷ Greenpeace, Green Alliance *Grid 2.0*, Awerbuch

⁸ Element Energy (2008) *Power in Numbers: The benefits and potential of distributed energy generation at the small community scale. A report for the Energy Saving Trust*, London: EST;

⁹ E.g. DTI (2005) *Community benefits from wind power: A study of UK practice and comparison with leading European Countries – Report to the Renewables Advisory Board and the DTI by CSE and Garrad Hassan* London: DTI

A second distinction is the scale and nature of activity. Most Ashden Award winners who focus on energy efficiency are working with households, whereas those who focus mostly on renewable technologies tend to work more with organisations like schools, local councils, businesses, and other institutions. Two are designers or manufacturers of renewable technologies.

Thus winners range from a local authority taking an innovative approach to energy saving by households (Arun District Council) to a company making ground source heat pumps (Kensa Engineering). There may be connections and common concerns (for example Arun District Council may buy ground source heat pumps from Kensa to use with fuel poor households), but the issues they identify as priorities are also likely to be different.

Methodology

This Briefing Paper is based on data gathered from the following research:

1. Policy landscape review

A brief review of the policy landscape was undertaken in order to identify key decisions and processes to influence, particularly those relating to household energy efficiency, renewable heat and community renewables, and broader local sustainable energy issues.

2. Quantitative analysis

An online questionnaire was designed for all UK winners (excluding schools¹⁰) to complete. This questionnaire provided a level of direction for the qualitative analysis which followed as well as providing a high-level overview of the barriers and issues faced by Award winners in successfully delivering their projects. It also explored the key factors necessary for successful delivery.

3. Qualitative analysis

In-depth telephone interviews with a selected group of nine Award winners were conducted across the key areas of energy efficiency, sustainable heat and sustainable electricity (these Award winners are indicated in Table 1 by the green shading). The in-depth interviews provided further detail on the higher-level findings of the quantitative analysis, including a better understanding of the policy barriers and priorities, success factors, and experiences in delivering sustainable energy programmes. The results of the interviews form the substance of this paper.

¹⁰ Schools were not included in this study due to different policy agendas.

**Table 1
Ashden Award Winners**

| | Micro/ household | Community/ business/ organisation | Manufacture |
|---|--|--|-------------------------------------|
| Energy efficiency | Arun District Council | Arun District Council | Second Nature UK Ltd |
| | Community Energy Plus (CEP) | ENWORKS | |
| | Energy Agency, Ayrshire Energy Audit Company (EAC) Gloucestershire Warm and Well | | |
| | Leeds City Council | | |
| Energy efficiency and renewable energy | BioRegional Development Group (BedZED) | Centre for Sustainable Energy | |
| Energy efficiency and waste reduction | | Global Action Plan | |
| Renewable electricity | Good Energy | Solarcentury | Renewable Devices Swift Turbines |
| | Kirklees Council | Cwmni Gwynt Teg Cyf Miles and Gail Fursdon South Somerset Hydropower Group Ecotricity | |
| Renewable energy | | ALLenergy - Argyll, Lomond and the Islands Energy Agency | Dulas Ltd |
| Renewable heat | BioRegional Development Group | Barnsley Metropolitan Borough Council | Kensa Engineering |
| | Carbon Descent | BioRegional Development Group | |
| | Rural Energy Trust | Nottinghamshire County Council | |
| | | Rural Energy Trust TV Bioenergy/Thames Valley Energy Wood Energy Ltd | |

2. Policy landscape review

The Government has a range of policies aimed at improving energy efficiency and increasing the uptake of renewable electricity and heat. Here, we provide a brief overview of the most relevant policies and indicate the level of success of the policies to date. A more detailed description of the policy landscape is set out in Appendix 2.

At a high level, policy in this area is driven by a number of targets. These include a long-term domestic target to reduce UK greenhouse gas emissions by 80 per cent by 2050 (below 1990 levels), a European Union target for 15 per cent of energy to be from renewable sources by 2020 and five-year carbon budgets set out by the Committee on Climate Change from 2008 until 2022.

The adoption of these new and demanding targets has prompted a review of many of the policies relating to sustainable energy and the Government is expected to produce a strategy later in 2009 which will outline how the carbon budgets set by the Committee on Climate Change as well as the European 2020 renewable energy target will be met. The Government consulted on a Renewable Energy Strategy in 2008 and is currently consulting on a Heat and Energy Saving Strategy (HESS).

The Government has also announced that all new homes should be 'zero carbon' by 2016 and non-domestic buildings should be zero carbon from 2019. A consultation is currently underway to determine how new homes will be judged to be 'zero carbon'. In order to meet the standard, new homes will be likely to be required to have high levels of energy efficiency and on-site renewable energy supply as well as a range of off-site solutions for tackling remaining emissions (HM Government 2008a).

Energy efficiency policies

The main policy measure for increasing energy efficiency among households is the Carbon Emissions Reduction Target (CERT). This places an obligation on energy suppliers to reduce carbon emissions from households. CERT is currently due to come to an end in 2011 (although the HESS consultation document proposes that it should be extended in its current form until 2012) (HM Government 2009a). The Government has announced that the successor to CERT will be another Supplier Obligation and that this will continue until 2020.

However, the HESS announced an intention to revisit the household energy efficiency delivery model and proposes two options. The first is a supplier-led obligation which will include some kind of outcome target (in terms of reductions in CO₂ emissions achieved). The second is to move away from a supplier-led approach and to use a central coordinating body to deliver on energy saving targets. The consultation period closed in May 2009.

The Government has also announced the introduction of a Community Energy Saving Programme (CESP) as part of its Home Energy Saving Programme (HM Government 2008b). This will be an additional obligation on electricity suppliers and on electricity generators to provide measures that will reduce both CO₂ emissions and energy bills for people living in deprived areas. CESP will aim to encourage measures that have a large impact and will focus efforts on a smaller number of households than the more incremental and widespread approach taken under CERT.

Many of the other policies that aim to encourage energy efficiency among households (except for building regulations) seek to encourage voluntary behaviour change. These include the 'Act on CO₂' advertising campaign and carbon calculator, the roll out of smart

meters to all households, and the Energy Performance Certificates on dwellings, and the Warm Front scheme (see Appendix 2 for more information).

Energy efficiency impact

One of way of assessing the impact of government policy in this area is to examine the average energy efficiency (SAP) rating of housing in the UK. This has increased over the last decade from 42.1 in 1996 to 49.8 in 2007 (CLG 2009).¹¹ Table 2 shows the number of properties in each energy efficiency band.

| Energy Efficiency Rating (EER) Band | Number of properties in 2007 (thousands) |
|-------------------------------------|--|
| Band A/B (81-100) | 35 |
| Band C (69-80) | 1,710 |
| Band D (55-68) | 7,316 |
| Band E (39-54) | 8,859 |
| Band F (21-38) | 3,389 |
| Band G (1-20) | 881 |
| Total | 22,189 |

Table 2: Number of properties in each energy efficiency band. Source: CLG (2009a)

Table 3 shows the extent to which energy efficiency measures have been deployed in the housing stock in Great Britain. Measures like loft insulation and hot water tank insulation now have a very high uptake. However, measures like cavity wall insulation and double glazing still lag behind.

| Measure | Percentage of eligible dwellings |
|--|----------------------------------|
| Loft insulation | 94% |
| Cavity wall insulation | 37% |
| Double glazing (some rooms) | 83% |
| Double glazing (80% or more of rooms) | 43% |
| Draught proofing (including double glazing) | 86% |
| Hot water tank insulation | 95% |
| Full insulation (loft insulation, cavity wall insulation and 80% or more double glazing) | 15.7% |

Table 3: Ownership of energy efficiency measures in dwellings in Great Britain 2004. Source: Utley and Shorrocks 2006

Renewable electricity

Many measures aimed at increasing generation of renewable electricity have been targeted at large-scale electricity generators. These include the European Emissions Trading Scheme (ETS) and the Renewables Obligation (RO). In response to criticism that the RO did not provide a sufficient incentive for small-scale renewable electricity generation, the Government proposed introducing a Feed-in Tariff for small-scale electricity generation (up to 5MW) in its Renewable Energy Strategy consultation in 2008 (HM Government 2008c) and the Energy Act provided powers for the Secretary of State to introduce such a measure (HM Government 2008d).

Other measures to encourage the uptake of small-scale renewable energy include the Low Carbon Buildings Programme (which provides capital grants) and the use by some local authorities of the 'Merton Rule' (see Appendix 2 for more information). Targets for all new homes to be 'zero carbon' by 2016 should also aid the uptake of on-site renewables.

Renewable heat

¹¹ This is measured on a scale of 1-100 where a score of 1 indicates a dwelling with poor energy efficiency and a score of 100 indicates a completely energy efficient property.

There are currently no policy measures specifically focused on delivering renewable heat, but several existing policy mechanisms do already cover this area. These include CERT, the Low Carbon Buildings Programme and the Code for Sustainable Homes. In the future, the Carbon Reduction Commitment and zero carbon homes target should also help to stimulate renewable heat measures.

In addition to these policies, the HES consultation document sets out proposals for the introduction of a Renewable Heat Incentive (RHI). In very broad terms, a RHI would operate in a similar way to feed-in tariffs used for renewable electricity and would pay revenue on the basis of the quantity of heat generated. The RHI would apply to all generators of renewable heat, including households, communities and industrial scale operators. A full consultation on the proposals is planned for later in 2009 with the aim of having the RHI in place by April 2011 (HM Government 2009a).

The Government is also investigating ways to promote district heating systems. The Government is convening a ‘Summit on Community Energy and Heating’ with local government alongside the HES consultation. The consultation also proposes establishing a ‘Heat Markets Forum’ to better understand how barriers to district heating can be overcome and to consider regulatory arrangements.

Renewable energy impact

Installed renewable energy capacity has increased in recent years, both in terms of large-scale installations and microgeneration technologies. However, renewable energy still accounts for only around two per cent of total UK energy generation (BERR 2008). Tables 4 and 5 show the scale of installed capacity in the UK in 2007.

| Technology | Installed capacity in 2007 (MWe) |
|--------------------|----------------------------------|
| Onshore wind | 2,083 |
| Offshore wind | 394 |
| Shoreline wave | 0.5 |
| Solar PV | 14 |
| Small scale hydro | 166 |
| Large scale hydro | 1,359 |
| Biomass and wastes | 1,682 |

Table 4: Renewable energy capacity in the UK, 2007. Source: BERR 2009d

| Technology | Estimated number of installations |
|--------------------------------|-----------------------------------|
| Solar PV | 2,300 |
| Micro-CHP*mostly not renewable | 200 – 1,000 |
| Micro-wind | 1,100 |
| Micro-hydro | 65-75 |
| Solar thermal | 90,000 |
| Biomass boilers | 500-600 |
| Ground Source Heat Pumps | 745-2,000 |
| Air Source Heat Pumps | >150 |
| Total | 95,000 – 98,000 |

Table 5: Approximate number of microgeneration installations in England, Wales and Scotland, 2007. Source: Element Energy (2008)

The Low Carbon Buildings Programme has committed grants to over 8,000 projects under the four streams of phase 1 of the programme (see table 6). The vast majority of these have been for solar thermal projects. No grants have been committed for air source heat pumps and only five for small scale hydro (see Figure 1).

| Stream | Total committed | Number of grants |
|--------|-----------------|------------------|
|--------|-----------------|------------------|

| | | |
|---|--------------------|--------------|
| Stream 1 – Household grants | £11,027,000 | 8,345 |
| Stream 1 – Communities grants | £320,780 | 11 |
| Stream 2A – medium grants (up to £100,000) | £4,293,000 | 194 |
| Stream 2B – large grants (up to £1 million) | £5,565,000 | 23 |
| Total | £21,206,000 | 8,573 |

Table 6: Grants awarded under phase 1 of LBCP. Source: BERR (2009a)

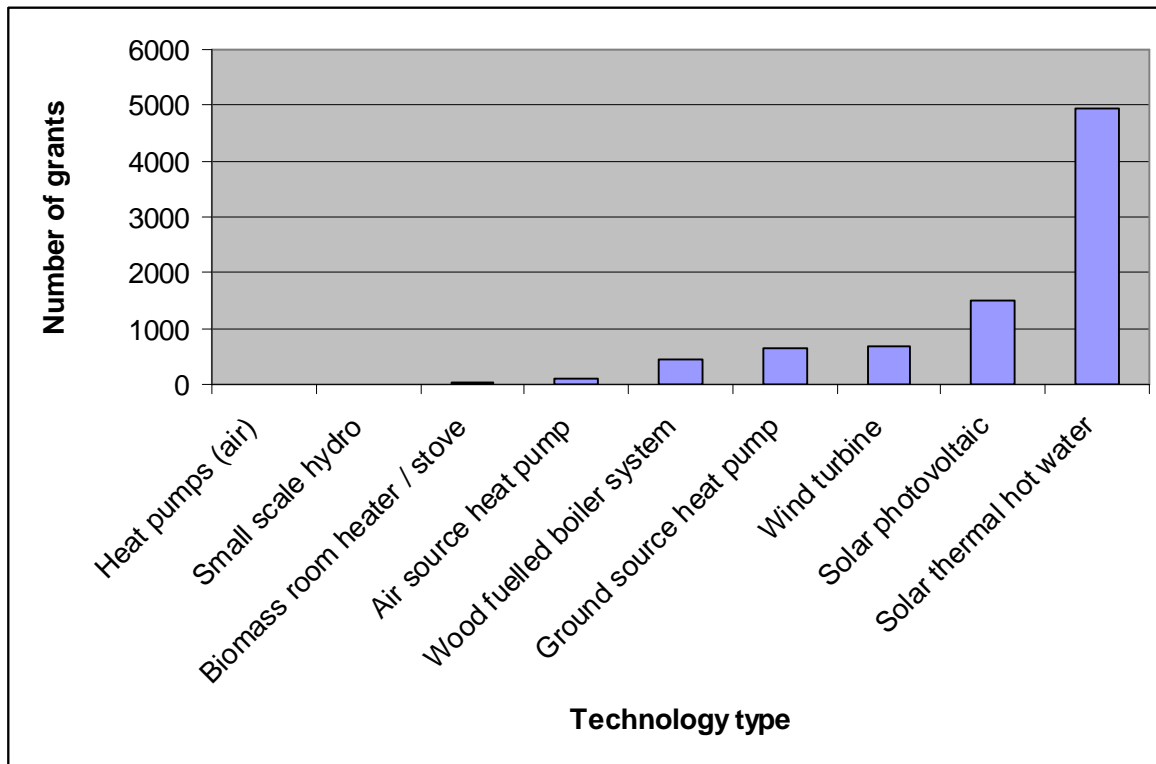


Figure 1: Number of Low Carbon Building Programme household grants given for different technology types under stream 1. Source: BERR 2009b.

3. Policy successes

In order to develop effective policy on sustainable energy, it is important to reflect on policies and programmes which have proved helpful in delivering measures on the ground.

Our quantitative research highlighted the importance of the Energy Efficiency Commitment and its successor, the Carbon Emissions Reduction Target (see Figure 2). While the programme has attracted some criticism for the peaks and troughs it has created in the market, 32 per cent of respondents acknowledged that much of their sustainable energy successes would not have been achieved without the programme.

The next most useful set of interventions cited were the support programmes (including funding) of the Energy Saving Trust and the Carbon Trust, along with fuel poverty programmes such as Warm Front. Another useful policy for Award winners has been the Home Energy Conservation Act with 20 per cent of respondents citing it as most helpful. This is largely due to the fact that it almost instantly created sustainable energy champions within local authorities with housing responsibilities and ensured that home energy efficiency received a higher level of resource and political attention at the local level.

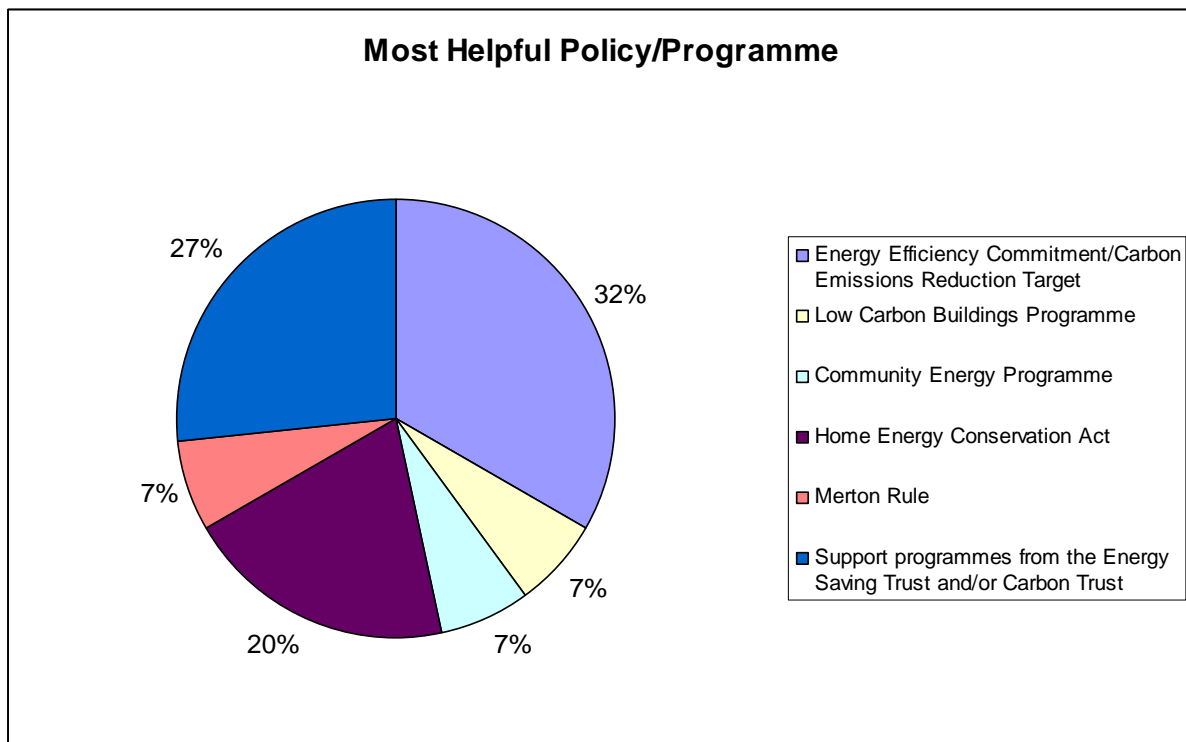


Figure 2: Most helpful Government policy or programme. Source: Online Survey, December 2008.

When we examine respondents' three most helpful policies and programmes, EEC/CERT remains the most helpful (see Figure 3). However, fuel poverty programmes such as Warm Front rate more highly, along with support programmes (including funding) from the Energy Saving Trust and Carbon Trust.

“The Energy Efficiency Commitment programme and CERT cannot be understated in terms of their benefits to take-up at a local level. However, it is important that they are managed and delivered in a such a way that they don't cause substantive peaks and troughs.” (Alan Jones, Leeds City Council).

“CERT is a really good initiative.” (Richard Freeborn, Kensa Engineering).

Several interviewees also highlighted the importance that building regulations have had on increasing the uptake of renewable energy and energy efficiency measures.

“[Regulations] have helped in the sense that where new buildings and certain major refurbishments have to comply to new energy standards, often the uptake of biomass will be required in order to comply.” (Richard Harvey, Rural Energy Trust).

“Take things like the Code for Sustainable Homes, the fact that feed-in tariffs will be introduced to help people buy renewable energy or BREAM¹² standards - these are all great opportunities for us.” (Ian Draisey, Dulas Ltd).

“The European legislation that’s come in, such as the European Performance of Buildings directive, have been helpful to us as a business.” (Chris Dunham, Carbon Descent).

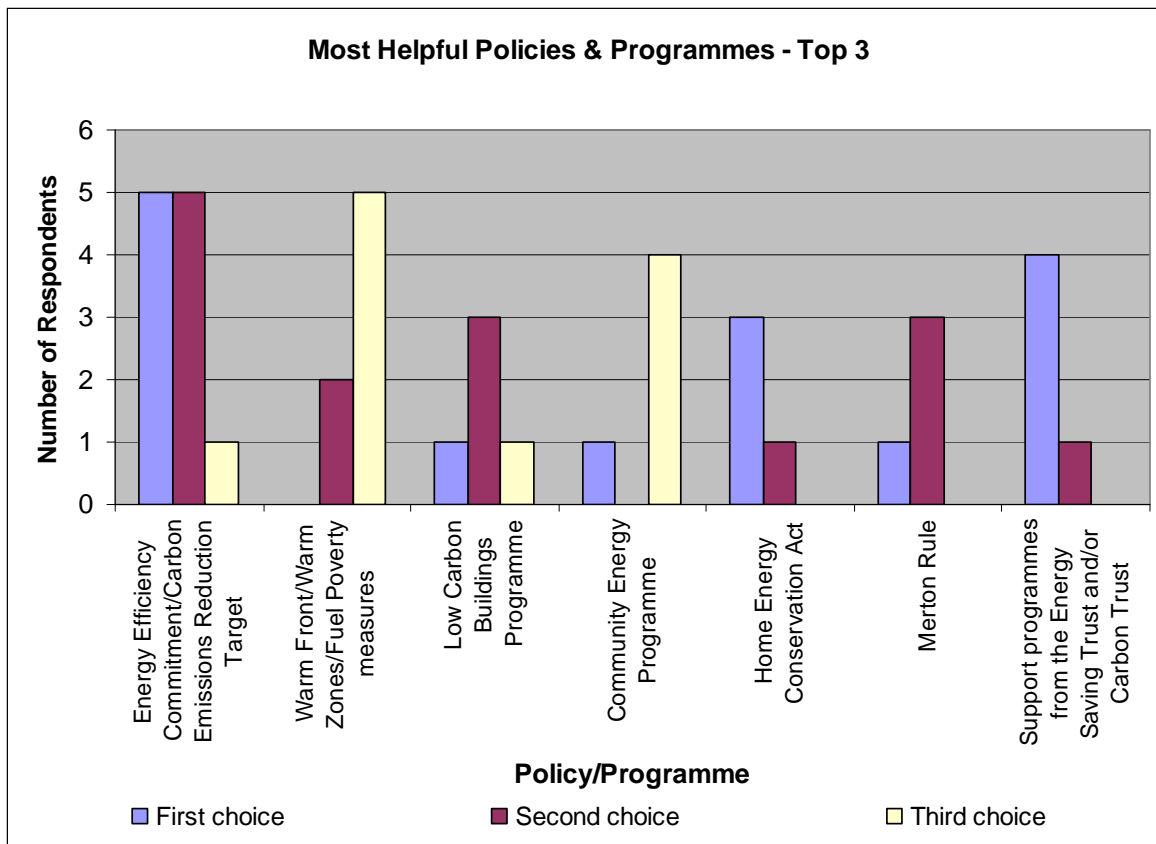


Figure 3: Three most important policies and programmes. Source: Online Survey, December 2008.

Changes in the planning regime were also felt to have been useful.

“I think it’s fairly clear that potential influence of the planning process is huge and having a big impact in terms of the uptake for renewables because it’s an easy way of influencing things. [For example] the Merton rule and the latest London plan requirement for all new schemes, new developments to connect to district heating if they’re within a certain distance of an existing scheme.” (Chris Dunham, Carbon Descent).

¹² Building Research Establishment Environmental Assessment Method.

“I think things like the Merton rule have definitely put it on the agenda of local planners, and local planners are now really much more aware of what’s going on.” (Juliet Davenport, Good Energy).

The Low Carbon Buildings Programme was also cited as a policy that had helped many Award winners, although there have also been a lot of problems with the programme, which are described in more detail in the next section.

“The Low Carbon Buildings Programme has been significant for us.” (Ian Draisey, Dulas Ltd).

“The Low Carbon Buildings Programme [has helped the growth of the business] but that’s a very mixed bag. The best thing that’s come out of the LCBP is not the grant funding, it’s actually the requirement for training and certification.” (Richard Freeborn, Kensa Engineering).

Other policies mentioned by interviewees included:

- The renewables obligation, which has given greater confidence for investment in renewables (Ian Draisey, Dulas Ltd)
- Funding from Regional Development Agencies (RDAs) and the European Regional Development Fund which has enabled support to help businesses increase energy efficiency in the Northwest (Sam Nicholson, ENWORKS)
- The proposed re-banding of Renewable Obligation Certificates (ROCs) (Juliet Davenport, Good Energy)
- National Indicators for local authorities (Alan Jones, Leeds City Council)
- Warm Front (Alan Jones, Leeds City Council).

4. Policy barriers

The primary policy barriers and the solutions to them that were cited by Ashden Award winners fall within four main categories:

1. Funding
2. Engagement and Awareness
3. Policy and Regulation
4. Technical

The quantitative research undertaken for this project highlights funding, both the amount and consistency, as the key barrier, cited by 80 per cent of respondents as the biggest hurdle they encountered (see Figure 4).

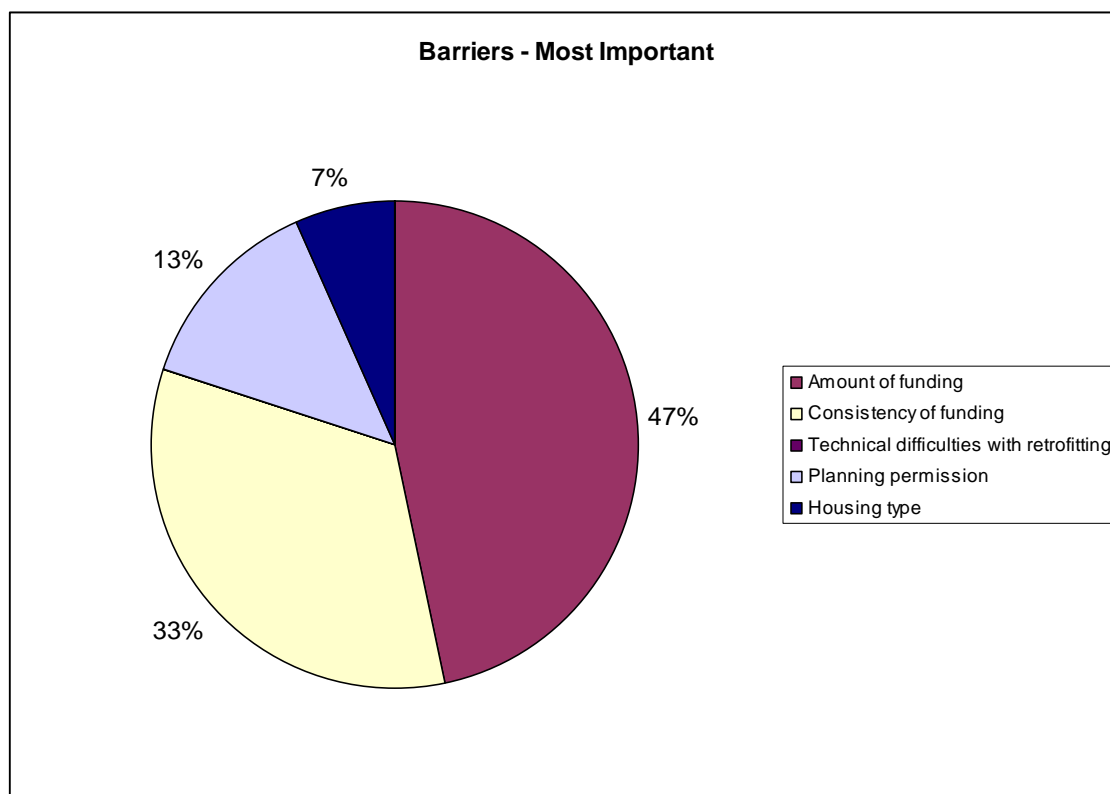


Figure 4: Most important barrier faced in carrying out sustainable energy work. Source: Online Survey, December 2008.

Once again, when respondents were asked to cite the three main barriers to their work, the amount and consistency of funding were at the top of the list (see Figure 5). These were followed by the lack of householder engagement and interest, which is clearly a significant barrier when seeking to address carbon emissions from the household sector, particularly in the absence of any regulation to compel action.

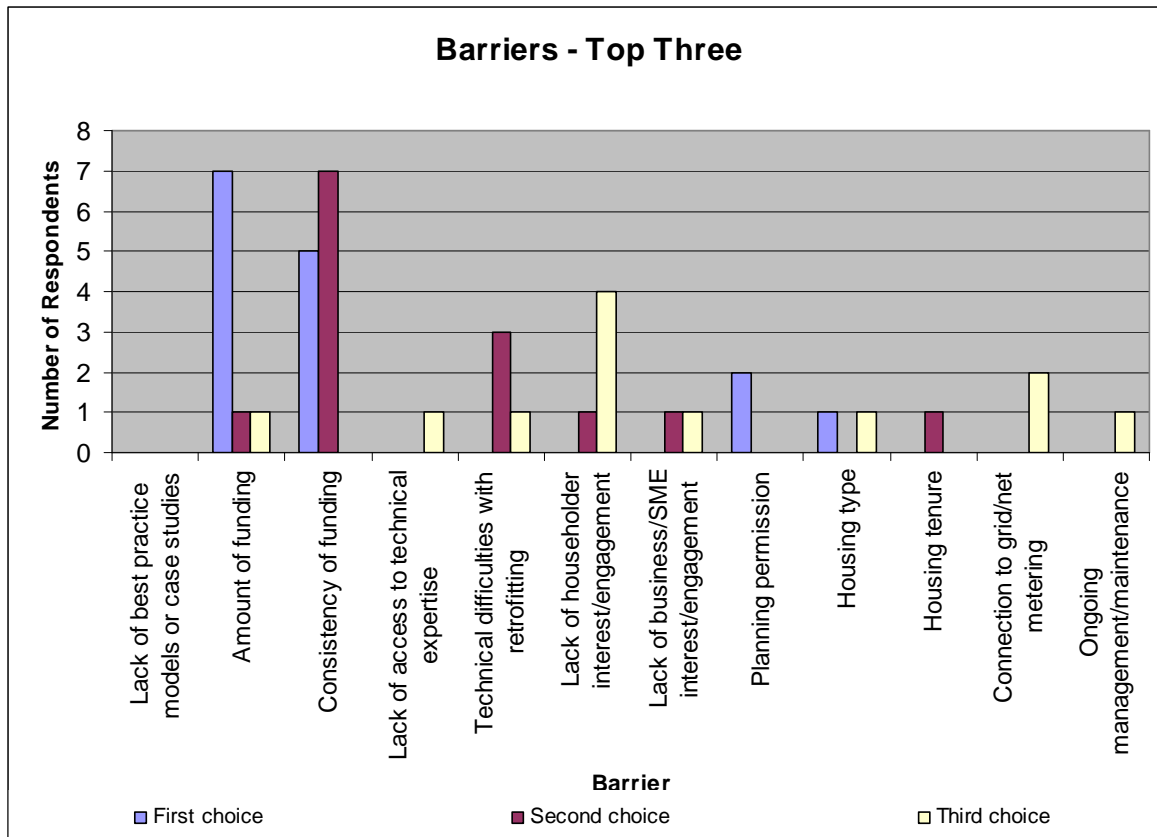


Figure 5: Top 3 barriers faced in carrying out sustainable energy work. Source: Online Survey, December 2008.

Funding

Funding was consistently the biggest barrier faced by Award winners. This was generally seen as a combination of the amount of funding available and the stop-start nature of it. This was particularly the case with grant programmes, such as the Low Carbon Buildings Programme, and the Energy Efficiency Commitment (EEC) (Phases 1 and 2). Most respondents expected a similar situation to arise in the third year of CERT as a result of the significant carry-over of credits from EEC2. The inconsistent and short-term nature of funding has made it difficult to plan work and manage expectations, let alone meet them.

“The extent of funding that will come from CERT particularly in its third year has got to be a serious concern at the moment.” (Ian Smith, Community Energy Plus).

“The bad side of the LCBP was phase two, which has just been a disaster. Glen Dimplex, which is a German heat pump manufacturer, are the only company that the Government have approved to give out phase two funding...so Glen Dimplex can offer 50% off...and we just quite simply can’t compete.” (Richard Freeborn, Kensa Engineering).

“In principle [the LCBP is] helpful, but...in terms of the structure, when it was set very high, they used to run out of funds all the time. When it was set much lower, then you didn’t see as much take-up.” (Juliet Davenport, Good Energy).

Some Award winners have found it difficult to secure consistent funding as many funders often want to fund new or innovative schemes rather than build on existing knowledge and proven technologies. Others have found the initial cost of many technologies to be a barrier, especially when the cost and carbon savings are not of the same order. Many sustainable energy technologies are only marginally financially viable, if at all.

“There are two things which affect the viability [of projects], one is the capital cost and the other is the return that you get on an ongoing basis so a grant reduces the former and heat incentive increases the return of the latter and in some cases you need both.” (Richard Harvey, Rural Energy Trust).

Business Award winners also found it difficult to access capital, which proved a significant barrier at start-up and when seeking to expand their operations.

The credit crunch is also beginning to have an impact for a variety of reasons. Some Award winners have experienced difficulties in securing financing for their own projects. Others fear that business may dry up as clients are unable to access finance or shift their focus away from environmental concerns.

“In terms of the credit crunch... the banks seemed to be very reluctant to lend us money in a way that they hadn't been before. Luckily we didn't need the money in the end...but the credit crunch could have had a very severe effect.” (Richard Freeborn, Kensa Engineering).

“We also work with businesses and again that's quite a challenging conundrum at the moment in terms of if you're struggling you really need to save some of your energy bills [but this is] balanced against 'I'm just fire fighting here, I might not have a job tomorrow'...I think we're actually hitting quite a big area of uncertainty.” (Ian Smith, Community Energy Plus).

“It mustn't happen too quickly or the whole thing will collapse, for example, the housing sector at the moment can't really adopt expensive new technologies because it's not building any houses.” (Richard Harvey, Rural Energy Trust).

Engagement and awareness

Levels of engagement and awareness of not only sustainable energy but also climate change more generally were seen as low and further behind other countries, particularly those in Europe. For many, climate change is still abstract and people have not yet recognised local impact.

A large proportion of Award winners are targeting sustainable energy in households and have found their lack of engagement and awareness to be a significant barrier, particularly as there is no regulation compelling them to action. Having to deal with them all individually is time and resource intensive and does not yield significant results. Some have found dealing with social landlords to be a more effective means of increasing the scale of sustainable energy, however, this does not address private households. The private-rented sector has also proved problematic as a result of the split-incentive whereby a landlord pays for the installation of sustainable energy measures but the tenant reaps the financial benefits of reduced energy bills. A significant incentive is needed to engage landlords.

“Lack of public perception in this country... of the need for renewable energy [is a barrier].” (Richard Harvey, Rural Energy Trust).

“People won't take action unless there's a grant to do it, they actually expect there to be a grant before they take action even though it is [in] their immediate financial interest.” (Ian Smith, Community Energy Plus).

Initially, barriers within the building supply chain proved problematic but have been overcome with time and increased awareness within the industry.

A small number of Award winners are also targeting energy saving within the business sector. This has proved difficult particularly in the current economic situation which has resulted in businesses not recognising the benefits of increased resource efficiency.

Policy and regulation

Policy and regulation have proved to be barriers themselves in some cases. Some respondents felt that Government was often behind industry on policy and had taken too long to catch up. Others stated that policy frameworks were inconsistent and too short-term in their approach, making it difficult to plan beyond a three year horizon.

“Incoherent, short-termism in relation to policy is a major barrier because you can't plan beyond the three-year funding round.” (Ian Draisey, Dulas Ltd).

Another aspect that has been particularly problematic is the 'stop-start' nature of some policies. EEC/CERT and the LCBP were both cited as suffering from this flaw. Under EEC/CERT, there have been periods of inactivity when energy suppliers have hit their targets and stopped carrying out energy efficiency works. This has proved problematic for the supply companies.

“What we're seeing with the EEC programmes is because they're [energy suppliers] reaching targets far sooner than they anticipated, we saw a period of where it was switched off for nearly eighteen months and that created a black hole where people were saying 'we want... to do something' and everybody was having to say 'hang on a second, there's nothing available' and that's disappointing.” (Alan Jones, Leeds City Council).

“The CERT programme... is problematic for us in terms of it is incredibly useful private sector match-funding which gets things done in a very efficient way, that's the good side, the bad side is (1) it is a political football as far as I can tell and (2) as a market mechanism it tends to get turned on and off rather too quickly.” (Ian Smith, Community Energy Plus).

The LCBP has also posed problems because funding has not been available in a continuous manner. This means that demand for renewable energy and energy efficiency measures dries up at times when funding is not available and peaks when the funding is 'switched on' again. There was concern among some interviewees that the transition from the LCBP to the introduction of the feed-in tariff could cause this to happen again.

“We had a period where, for instance, when they were about to bring in the grant programme everyone knew it was coming in but it wasn't coming in for three months and so nobody does anything for three months because everybody is waiting for the grant programme to start.” (Chris Dunham, Carbon Descent).

“We're just about to hit another of the UK's famous hiatuses where funding, to all intents and purposes, will disappear for six months in between the end of the Low Carbon Building Programme in June 2010... and when the feed-in tariff can possibly be brought in... there's still this huge amount of uncertainty and there will be a lot of very nervous installers ...who will be very, very worried about this lack of clarity.” (Ian Draisey, Dulas Ltd).

Planning permission was highlighted as a significant regulatory barrier, particularly for sustainable electricity and heat projects. Whilst acknowledging improvements with microgeneration becoming permitted development, there was still a strong sense that gaining planning consent for large scale developments was problematic. It was even suggested that the UK had stagnated whilst other countries had taken the lead, in large part due to the difficulties of achieving planning permission.

“There’s planning problems...people might want to go ahead with having a system installed but find there are planning restrictions.” (Chris Dunham, Carbon Descent).

“We certainly have a planning issue especially [when] we get slightly off the home insulation and [start] looking at larger scale technologies and renewables.” (Ian Smith, Community Energy Plus).

“Things like planning restrictions, building regulations, health and safety regulation, all these kinds of things which can be huge barriers with the uptake of this technology.” (Richard Harvey, Rural Energy Trust).

Technical

Technical barriers did not feature as prominently as might be expected. However, the most significant technical barrier was the difficulty faced in retrofitting homes, particularly those which are considered ‘hard to treat’ (ie those with solid walls, off the gas network, flat roofs or using a non-traditional construction). Therefore, measures for these homes attract much higher costs.

“We [have] housing issues because we have... a large number of solid wall properties.” (Ian Smith, Community Energy Plus).

The cost and complexity of connecting smaller sustainable electricity schemes to the grid was also cited as a barrier.

“We’ve still got a lot of complexity, particularly to do with connection – how can we connect into the grid? And how much is it going to cost us? And how do I find that information out? And how can I find it out in a timely and cost-effective manner?” (Juliet Davenport, Good Energy).

Several interviewees have also encountered difficulties in recruiting the technical skills needed and a lack of training opportunities.

“Being able to recruit engineers, technical engineers, and to a degree people with commercial acumen. That’s one of the major barriers.” (Ian Draisey, Dulas Ltd).

“One thing that’s disappointing is that there still isn’t a real career progression, there still isn’t the training, the qualifications for my staff in any kind of systematic way.” (Ian Smith, Community Energy Plus).

5. Policy solutions

Ashden Award winners were asked about their recommendations for future policy: the types of policies which are most needed to make implementation of government policy on sustainable energy easier and more effective, and which ones they would prioritise. Their responses largely fell within three main categories:

1. Funding
2. Local authority role
3. Policy coherence

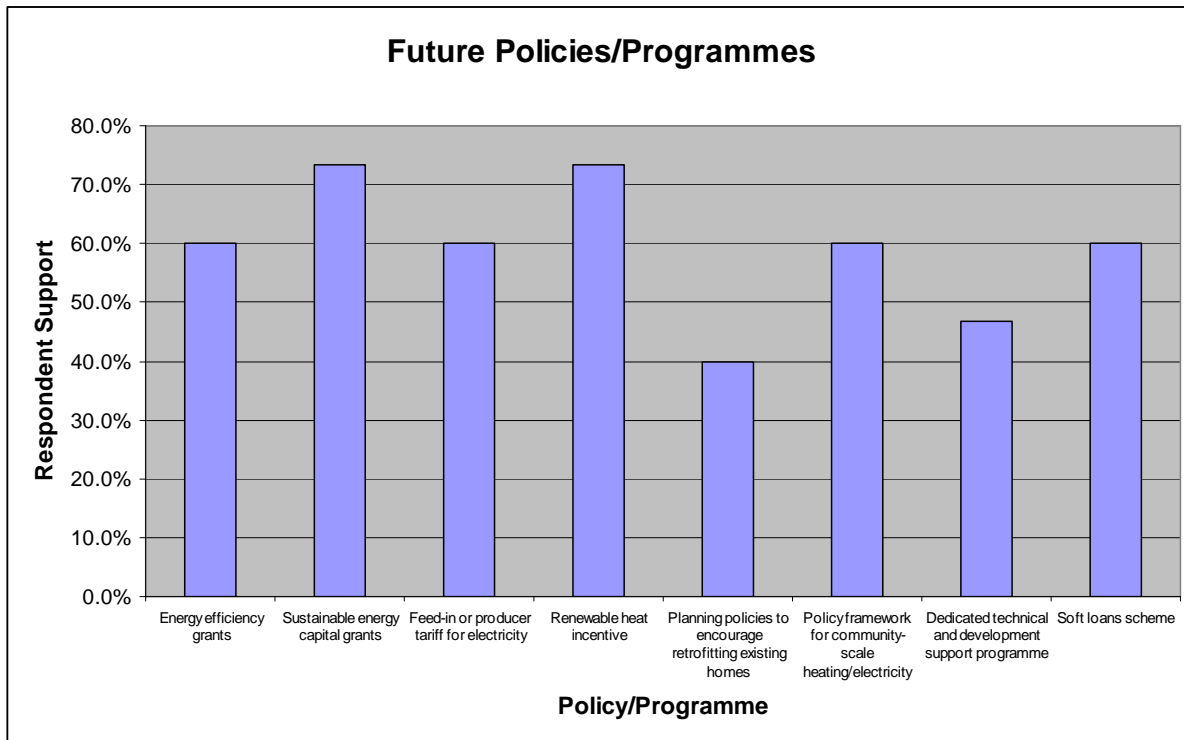


Figure 7: Potential policies and programmes which would be most helpful to sustainable energy work. Source: Online survey, December 2008.

Funding

Not surprisingly, funding was seen as a priority. The policies which were perceived as most likely to help in the delivery of their work were sustainable energy capital grants and a renewable heat incentive (see Figure 7). Several other policies including energy efficiency grants, a feed-in tariff, and a soft loans scheme rated a close second.

Given that the amount and consistency of funding was the primary barrier to sustainable energy programmes, many Award winners were keen to see a continuous funding mechanism rather than the current 'bidding' process which is increasingly being favoured by programmes like the Community Energy Efficiency Fund (CEEF). In particular, funding targeted locally for area based approaches - suitable for off gas and/or solid walled properties was suggested. Generally, however, more overall funding dedicated to local sustainable energy was requested, including for technical and project design, and management support. It was also suggested that government should provide more funding for training and skills development.

“[We need] a loan scheme for individuals, where individuals can go and borrow money, but it’s underwritten by government, [along similar lines to] the Small Business Loan Scheme... which reduces the risk of the banks... and allows them to lend more.” (Juliet Davenport, Good Energy).

“One thing the Government could pay for would be training and certification. If you look at the Microgeneration Certification Scheme, the fees to comply with MCS are £1,800. To comply with CORGI it is about £500 or £600. At a time when you’re trying to encourage plumbers to go into the renewable energy business, why hasn’t the Government paid that £1,800 for them?” (Richard Freeborn, Kensa Engineering).

Local authority role

The role of local authorities and the embedding of targets at the local level were seen as an important means of improving the implementation of national sustainable energy policy. In particular, local authority buy-in and support for renewable energy resource assessments and the opportunity for them to identify key renewable energy development sites were cited.

“What you are getting in national, regional and local policy is that words are getting written into the strategies now, like for the first time now we have national indicators. We never had any performance management, key performance indicators or anything like that in the past that were meaningful.” (Ian Smith, Community Energy Plus).

Several Award winners were keen to see targets for local authorities to create buy-in and ownership of sustainable energy implementation. It was suggested that these targets should be accompanied by financial support to ensure effective delivery. Local authority staff needed consistent resources in order to implement sustainable energy targets locally. Local authorities’ role in the supply chain, and their procurement capacity, were also seen as integral to embedding local sustainable energy.

“It’s interesting that we [local authorities] have the responsibility but we don’t have the powers to administer at a local level... it would be nice to see [a] regional allocation of CERT resources or other resources that we were working to as an apportionment of local authorities so we knew where we were and we could best facilitate that rather than having a situation that we are just arbitrary partners at a table where other people hold the purse strings.” (Alan Jones, Leeds City Council)

The other key role for local authorities in sustainable energy is their planning powers. Enhanced training and resources for planning officers on sustainable energy was seen as important in overcoming a key barrier.

Policy coherence

Most Award winners thought much greater policy coherence around sustainable energy was necessary. There were a variety of ways in which they were keen to see this manifested, however, a strong, long-term policy framework was a common theme. Many were keen to see greater connectivity between different policies providing a more coherent message to stakeholders. Several felt that Government policies needed to be changed from the top down in order to make a serious difference at the local level.

“More integration through education, skills and training and higher education would be really good so we can build a section of the economy by investing in it.” (Ian Smith, Community Energy Plus).

Again, there was a plea for a more sustained, continuous approach to avoid the problems encountered by the ‘stop-start’ nature of some policy interventions to date.

“What we want is long term interventions. The worst thing is you could have huge grant programmes but if they were stopping and starting all the time and changing

then that is really bad for the industry because you can't predict and you can't grow long-term." (Ian Draisey, Dulas Ltd).

"Any drop or any halt in [resources coming out of CERT] is going to dis-enable quite a number of agencies and local authorities out there who are trying to facilitate action in households. It's important that when something is started it's consistent and it carries on." (Alan Jones, Leeds City Council).

A policy framework which makes sustainable energy technologies financially viable, and provides the right support at the right phase of market development for individual technologies was seen as a useful addition.

One respondent felt that Government should realise its limitations and create the framework and tax environment but recognise that it is the private sector that delivers the measures on the ground. Whilst this view was not commonly held, it does indicate that clarification of roles and collaborative policy would support sustainable energy delivery.

"Government also needs to know what it can and cannot do. For the public sector to hold a debate about how to deploy renewables, just shows that it doesn't know what it can and cannot deliver. Government [has] got control of tax and legislation in simple terms. And that's all. It doesn't control delivery, it doesn't control the market and it doesn't set the prices." (Richard Freeborn, Kensa Engineering).

Involvement in policy development

All respondents said they had been very or moderately involved in policy development processes. However, almost 87 per cent stated that they would like greater involvement or input into the development of Government policy on sustainable energy.

They favoured a range of different options for the form this input should take, including interviews and workshops (see Figure 6). However, several concerns were raised about the efficacy of the Government's policy consultation processes and how much influence they genuinely have on outcomes. The other key issue for Award winners was a lack of time and resources to adequately and effectively contribute to policy development. It was perceived as a process which required a significant time commitment in order to effect change.

"I think if industry is properly consulted at the development stage of these programmes then you'll end up with something that will work well." (Ian Draisey, Dulas Ltd).

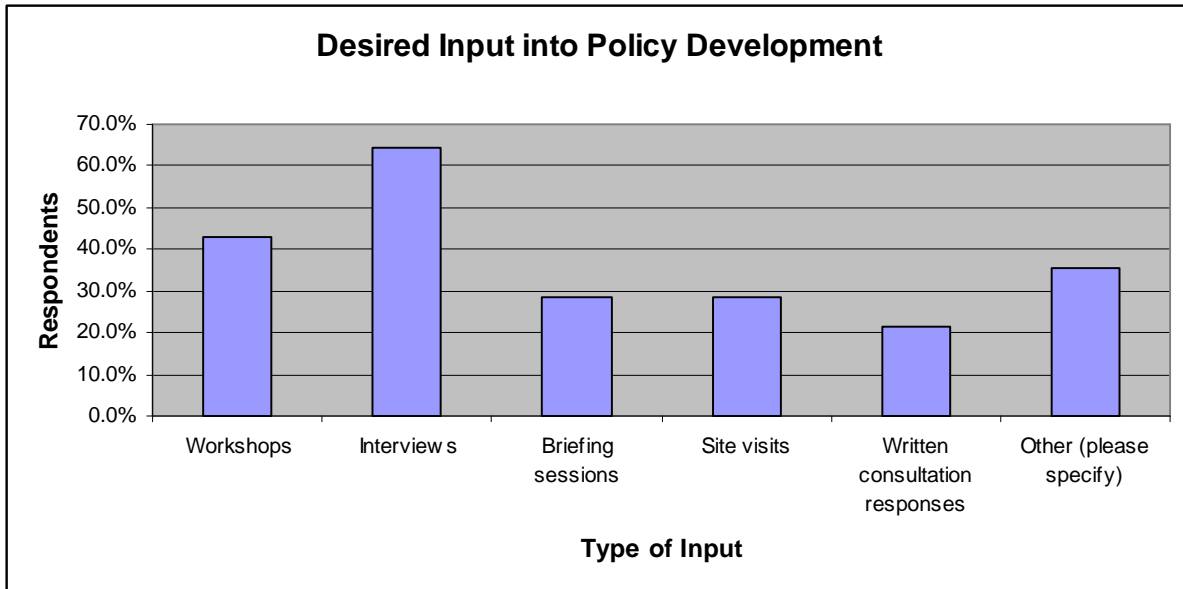


Figure 6: Desired form of input into Government policy development. Source: Online Survey, December 2008.

6. Conclusions and recommendations

Looking across all the areas of local sustainable energy, two common themes can be identified. One issue that was emphasised again and again is the importance of government and indeed all political parties committing to a long-term strategy, including predictable funding flows. The other common theme was the need to develop policies that are not just about the large energy companies, but also about local and often smaller actors, including local authorities but also charities and smaller companies.

One of our interviewees summed it up well:

“Be consistent and be long-term. Think long-term, don't think short-term programmes.... think about reliable, secure jobs, and think about the small guys.”
(Ian Draisey, Dulas Ltd).

To help ensure that happens, further research or experimentation is needed into a number of possible changes to policy.

Energy efficiency

The majority of Ashden Award winners work with households. As noted above, the context of energy saving policy is changing, which presents some opportunities for local sustainable energy practice. One issue concerns what kind of organisation policy is designed for. At present, the main two instruments for improving the energy efficiency of households – CERT and Warm Front – have been designed for two particular primary delivery agents, the large energy suppliers and the Warm Front contractor (in most cases the Eaga Partnership), respectively. Organisations typified by Ashden Award winners – i.e. local authorities and charities working with community groups – are often brought in by these delivery agents, but the policies are not tailored around them, and this often makes it difficult for them to plan and deliver energy efficiency to the communities they work with in a predictable way.

This is partly because CERT provides targets for energy suppliers, and when suppliers meet those targets (which is often before the date expected), the involvement of suppliers (and their resources) are suddenly withdrawn. This is likely to be a problem again in the next 18 months as the current phase of CERT (2008-2011) draws to a close. This really matters because while local authorities have an obligation to improve energy efficiency in households in their area through the Home Energy Conservation Act (HECA), they do not have any additional resources or powers to do so, which makes them dependent on relationships with energy suppliers to achieve anything at scale.¹³

This situation can create huge uncertainty, sometimes leaving local authorities and charities in the position of having to put people on waiting lists, which in turn creates bad feeling and undermines the wider credibility of energy saving programmes. The problem also arises because CERT rules are constructed in such a way as to encourage the delivery of a few measures to many households over large geographical areas, rather than a whole house and local area approach, that would build better relationships with householders in an area and have a positive impact on perceptions in that area.

¹³ Local authority winners are concerned about the future of the Home Energy Conservation Act (HECA). The Act was originally passed in 1995, but the Government recently consulted on repealing and changing it. Although it did not create extra resources and powers, interviewees from local authority winners working on energy efficiency see the Act as a useful “peg” on which to hang their work and get wider buy-in from their colleagues and local politicians. The new National Indicators on climate change and fuel poverty may also play a similar role, although as with HECA, they bring no extra resources or powers. The situation with HECA should be clarified as soon as possible, and if HECA is to be reformed, then it is essential that continuity is ensured.

One possible alternative would be to introduce a regional allocation element to CERT activity by energy suppliers, which would allow local authorities, at least, to plan how to work with suppliers better. This is an area that future research by the Ashden Awards might investigate.

A second possible response is to have a separate type of programme that is more area-based. This is precisely what is being proposed by Government in the form of the Community Energy Saving Programme (CESP), which was put out for consultation in January 2009. The CESP focuses very much on areas of deprivation with a high proportion of hard-to-treat properties. However, the CESP proposals are still built around energy suppliers (and now generators), not local actors. Although the CESP proposals recognise the key roles of local authorities and community-based organisations, the Government is not currently planning to require the delivery agents to work with local actors. This could be a lost opportunity. The Government should experiment with at least part of the CESP being delivered with resources under the direct control of local actors.

A different issue is that programmes like CERT and Warm Front have focused on the low-cost delivery of individual measures like cavity wall insulation and low-energy light-bulbs. They have not taken a whole house approach. The emphasis has been on numbers rather than quality of service or engaging the householder about further steps they can take. There is now an increasing recognition in Government that this is a crucial issue, and the long-term direction of policy is now shifting towards developing an *energy services* approach, while not losing the cost-effectiveness of delivery to date. This is an important development for the Ashden Awards, because an energy services approach has much greater potential to bring energy efficiency together with renewable energy in a more integrated focus on sustainable energy.

In the short term, the Government is introducing new measures into the CERT which should help with engagement and behaviour change, including meters with displays that give people real-time feedback on their energy use. It is also introducing face-to-face advice. In the longer term, the Suppliers Obligation is intended to create incentives for the delivery of wider energy services. However, the same issue of delivery agents still applies – energy suppliers will be the main actors. This approach misses an opportunity. The local authorities and community groups amongst Ashden Award winners are highly innovative and creative, but have to work around a lack of resources. A place should be found within the new framework for these kinds of actors to play a more active role and directly control funding.

In addition to the relationships with suppliers, several Award winners referred to the importance of partnerships between local authorities and charities, who are often the main intermediaries with community organisations. Partners can often have unrealistic expectations of each other, and partnerships can suffer from a lack of mutual understanding of how the other party works. There may be a role here for the Government (or possibly the Carbon Action Network) providing briefings and help on what different partners want, how they operate and what they can offer.

One Award winner working in this field also argued that there should be more sticks to go along with the carrots, i.e. regulation. Regulation, rather than engagement, has now transformed the market for condensing boilers, and it may be the case that similar legislation should drive changes in areas where an energy services approach cannot be expected to work. Further research on this balance with Ashden Award winners may be useful.

Regardless of the specific framework, a further policy need is for continuity and certainty. Whether this is about avoiding the stop-start experience with CERT and targets, the future of the HECA (see footnote 1 above) or the fate of particular grant schemes, several winners said that this was a key barrier, and that they would like to see a clear long-term

strategy for reducing carbon put in place that would guarantee continuity and certainty beyond the individual policy level. High-level policy statements (such as Gordon Brown's recent commitment to insulating every home in the country by 2030) need to be translated into a strategy, with forward planning over a time frame longer than two to three years. In immediate terms this may mean extending the current phase of CERT to 2012, and designing a smooth transition to the next phase.

A final recommendation relates to the development of sustainable energy as a career. There are few well-defined career paths, along with accompanying training and qualification, in local sustainable energy. Although there are no rigorous, up-to-date studies on the employment potential, growth in the sector will create new jobs, which is especially important at a time of recession and growing unemployment. Government should work together with energy suppliers and organisations like the Ashden Awards to systematise training and qualifications.

One Award winner we interviewed works with a different set of energy saving partners and issues, focusing not on households but on businesses. However, it is clear that, just as with households, awareness that there are energy saving opportunities is not enough on its own – businesses need long-term handholding through the whole process of becoming more efficient. Another similarity is that the absence of a long-term, predictable strategy means that funding can be unpredictable, with decisions suddenly reversed.

The main policy lesson pointed to here is about the importance of avoiding duplication and re-learning, by having a more systematic and strategic approach. Government should ensure that each RDA has a programme of business support for energy saving, being transparent about what they are delivering and what the impact is, and most of all, learning from each other and working together, not working competitively. Critically, more leadership from central government is needed in evaluating and collating all the learning from the activity that does take place.

Government could and should also use its enormous procurement power to require and drive resource efficiency right down the public sector supply chain.

Renewable electricity

The renewable electricity scene has been dominated by the Renewables Obligation, and the actors we interviewed (Good Energy and Dulas) actually saw the RO as having played a useful and important role, despite the frequent criticisms made of it. For some technologies (e.g. wind, biomass, hydro), at community scales and above, Award winners feel a healthy market exists. The main potential problem – a lack of finance – has only been amplified by the recent economic situation. Government underwriting of loans to companies active in the market may be needed. This is an area where future Ashden Awards research could play an important role in assessing the need and looking at loan scheme options.

However, the micro-renewables market is quite different. Award winners feel that policy has been weak and has moved slowly, and practice has always been ahead of policy. The Government is now proposing to open up feed-in tariffs (FITs) for micro- and small generation (up to 3 MW) which would give a fixed return for each kWh. This is widely seen as giving more certainty for small generators, and broadly welcomed. However, there are some concerns.

The first is that the FITs need to be set at the right level, high enough to induce growth in each technology given its costs. Good Energy suggested that 9p/kWh is about right for small wind and hydro-power, but that 22p/kWh or more will be needed for solar PV.

A second concern is that the 3 MW ceiling for FITs is quite high, and that there are community level schemes below this level for which the RO works fine. The proposals for a

FIT may therefore create a delay in new projects. They may also create a delay in smaller projects as people wait to see what kind of a deal they will get. Thus it is important to bring policy through as quickly as possible. This also applies to the banding of the RO for larger community level schemes.

A third issue is not seeing FITs as the sole answer to encouraging small-scale renewables. The successful German policy has involved a package that included both capital grants and Government-guaranteed loans. With finance currently a problem, the latter is a particularly important area of policy for Government to consider.

Beyond the financing of schemes, clearer and more supportive policy in other aspects of bringing projects through is also important. Good Energy contrasted the number of successful community wind farms in Scotland, where the Scottish Renewable Fund has helped on planning, finance, and technical support, and the lack of farms in England and Wales. This contrast confirms the impression that many community groups have lots of enthusiasm but not all have the necessary skills and knowledge to see projects through. Again, a FIT alone will not help solve this need. Further research could usefully be undertaken to produce a detailed set of recommendations in this area.

Renewable heat

Most Ashden Award winners are active in the renewable heat sector work at the level of communities and organisations, rather than individual households. The exceptions were the Solar for London project and Kensa Engineering.

By contrast, larger scale renewable heat seems to have been a stronger, more viable market in the last few years, especially for biomass and ground-source heat pumps (GSHPs), despite the perceived complexity of some of the technology. However, it is still reliant on funding from a diverse range of sources, including RDAs, DEFRA's bio-energy grants, and Building Schools for the Future budgets. However, as with funding in other areas, the problem with this arrangement is the lack of predictability, and (unlike renewable electricity which has the RO) the lack of a long term policy framework for renewable heat.¹⁴

For this reason, the development of a heat strategy and the proposal for a Renewable Heat Incentive was broadly welcomed by Award winners. However, as with a feed-in tariff for renewable electricity, winners were keen to stress the importance of maintaining capital grants as part of a wider support package.

Even more than renewable electricity, then, the policy framework for renewable heat has been weak, and slow to change. One winner commented that woodfuel heat has been held back by regulation across areas, including health and safety, building regulations, and planning. This is because regulations have evolved over the years in relation to fossil fuel heating systems which makes it difficult for the arrival of new technologies and fuels, which can be carbon neutral, difficult. There is thus a need for re-assessing of regulation and policy.

One project that faced few barriers and that was successful from the beginning was Barnsley's biomass programme. This Ashden winner learned a lot from visits to Austria and Switzerland, and it was this knowledge that seemed to be the key to success. This points to the importance of sharing knowledge about practice elsewhere, either in the UK or other parts of Europe and the world. The Energy Saving Trust has recently set up a Community Action for Energy programme that includes such information sharing, but the Ashden Awards should review this, and maybe also consider more systematic ways of getting successful experience from abroad shared within the UK,.

¹⁴ The same point applies to the Government's support mechanism for combined heat and power and district heating, the Community Energy Fund, which was discontinued in 2007.

The role of the Ashden Awards for Sustainable Energy

The Ashden Awards for Sustainable Energy are well-placed to act as a conduit between Award winners and policy-makers to help ensure that this message is heard. At present there is a significant gap, and although Award winners would like to be more involved in the policy-making process, they often lack the time or the capacity to do so. The Ashden Awards could act as the collective voice of Award winners, communicating key lessons from the experiences of delivering local sustainable energy programmes and ensuring that policy benefits those players that are key to delivering a more sustainable energy future. It may also be useful to connect specific winners to policy makers working on specific areas of policy.

In the coming months, there will be invaluable opportunities to influence policy as the Government develops its plans to meet the carbon budgets set by the Committee on Climate Change, the European 2020 renewable energy target, and the Heat and Energy Saving Strategy. These opportunities should be seized to transform the prospects of sustainable energy at the local level in the UK.

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Appendix 1: Summary of UK Ashden Award winners

2008 winners

Dulas Ltd, Powys, Wales

Dulas, based in mid-Wales, is a 25-year-old employee-owned business. It focuses on micro-hydro (design and installation); wood-fired heating (design, installation and management) and wind (monitoring and environmental impact assessment, as well as installation of small systems). In solar energy, Dulas installs PV systems in the UK and provides wholesale supplies to other installers. It also supplies about three quarters of the world demand for PV-powered vaccine refrigerators, to organisations such as the WHO and UNICEF.

Kensa Engineering, Cornwall

Kensa Engineering, designs, manufactures, and tests heat pump systems for installation throughout the UK. Most are small-scale ground-source heat pumps (up to 32 kW), which are supplied in kit form so that they can be installed by non-specialist plumbers and builders. Larger and specialist systems are also supplied. To date over 1,000 systems with a total capacity of over 16 MW have been sold, providing about 26 GWh/year of heat and saving 3,600 tonnes/year CO₂.

Energy Agency, Ayrshire, Scotland

The Energy Agency in Ayrshire has used a community fund from the Hadyard Hill wind farm to promote energy efficiency very intensively in three local villages. This has resulted in very high take-up rates (over 63% of households) for major energy efficiency measures such as cavity wall and loft insulation, as well as specialised insulation and solar water-heating in some households. Energy supply companies are now funding the Energy Agency to replicate the work in other villages and deprived urban areas.

Global Action Plan, London

Global Action Plan is a charity which works with businesses and other organisations to reduce energy consumption and waste production through behavioural change. Since 1997 it has trained and motivated 1,200 people in 69 organisations as 'Environment Champions', indirectly influencing over 86,000 employees. The work has promoted team working, and resulted in estimated reductions of 4.4 GWh/year energy and 1,600 tonnes/year waste for participating organisations. Similar behavioural change outside the workplace is also widely reported.

Arun District Council, West Sussex

Arun District Council has improved energy efficiency in its own estate (using extensive metering, and behavioural campaigns in partnership with a trade union); in council housing (through a continuing upgrade policy that has reached 99% of homes); in houses with multiple occupants (through support to landlords and liaison with student groups); and in religious organisations (through the Ecofaith group). Specific council policies and the Arun Carbon Management Action Plan have led and coordinated this work.

Leeds City Council, West Yorkshire

Leeds City Council's Fuelsavers programme developed a strategy which has improved the energy efficiency of housing by over 21% since 1996. It currently provides major insulation installations, improved heating and glazing upgrades to 25,000 households per year. A new programme is providing home energy assessment visits to 32,000 homes. Improved energy metering and condensing boilers have been installed in council buildings, and a combined heat and power unit at a sports centre.

2007 winners

Solarcentury, London

Solarcentury specialises in developing mounting systems and installation procedures for integrating solar systems into a wide variety of buildings including industrial estates, schools, prisons, hospitals and houses. Solarcentury has designed and installed over 550 large installations and thousands of home installations, including 30 installations for schools, 150 for public sector or charitable organisations and 300 for businesses. These installations add up to 3.3 MWp of solar power, generating around 2,370 MWh/year, which prevents the emission of about 1,350 tonnes of CO₂ a year.

Ecotricity, Stroud

Ecotricity is an installer of wind turbines in the UK. By the end of 2006 Ecotricity had 11 wind farms of 27 MW, which is about one in ten of all onshore wind projects in the UK. The company's turbines are delivering 46 GWh/year of renewable electricity and avoiding around 46,000 tonnes of CO₂ emissions a year. Ecotricity also runs a 'Merchant Wind Power' scheme, whereby turbines are installed to supply electricity directly to the distribution network of a business instead of to the national grid. By getting the power directly, the business avoids the losses and costs associated with grid transmission and any excess can still be sold. This means that the turbines can be economic at sites with a lower wind speed than is usually possible. The company invests its profits back into the development of wind power.

ENWORKS, Manchester

ENWORKS works with businesses in the Northwest of England to increase their resource efficiency and reduce their carbon footprint by carrying out audits, bringing in specialist advisors and finding ways to save energy, water and materials through simple changes in behaviour, manufacturing processes and building services.. Up to March 2009, the impact of the 651 energy efficiency measures taken through ENWORKS has been a saving of over 53GWh/year of electricity, over 66GWh/year of gas and over 789,000 litres/year of petroleum products. These savings have reduced CO₂ emissions by 44,200 tonnes a year and saved the businesses over £8.2million per year. Further improvements are being implemented that could save an additional £27million and 175,000 tonnes of CO₂ each year.

Cumbria Energy Efficiency Advice Centre

In the past two years Cumbria Energy Advice Centre has insulated over 9,000 homes with cavity walls and put loft insulation into over 5,000 homes, saving around 12,500 tonnes of CO₂ a year and reducing fuel bills by over £1.6 million a year. The scheme - run by the Cumbria Energy Efficiency Advice Centre (CEEAC) - provides an integrated service of advice, funding and installation. It targets one area at a time, promoting the advantages of energy efficiency, arranging funding for discounts on installations, and managing contractors.

Nottinghamshire County Council

The Nottinghamshire County Council has introduced a programme to bring back wood as a sustainable fuel. Schools across the County are converting their old boilers from coal to wood - a cleaner, more sustainable source of fuel. The scheme is saving around 2,400 tonnes of CO₂ a year and catalysing a local wood pellet industry. Already 17 schools have benefited, with 27 more schools converted by the end of 2008. Nottinghamshire County Council was the first in the UK to set up a Local Public Service Agreement, committing it to cut CO₂ emissions from council buildings by 25% or 3,500 tonnes a year. Their aim now is zero net emissions by 2050.

Wood Energy, Devon

Wood Energy is a wood-fuel heating business. To date the company has installed around 100 commercial boilers with a total heat capacity of 28 MW - more than one third of the

total wood-heat capacity in the UK. These installations include the National Assembly of Wales, and the first biomass system in a UK prison as well as schools, hospitals, national parks, plant nurseries, local authorities and community developments. In addition, over 100 domestic boilers have been installed. The company also has helped set up three local wood-fuel supply businesses in the South West and Wales, and supported the setting up of the only accredited wood fuel training course for professionals, IGNITE.

2006 winners

Barnsley Metropolitan Borough Council

Barnsley is situated in an old coal-mining area and many properties are still heated by coal-fired boilers. In June 2004, Barnsley MBC adopted a Biomass Implementation Policy, committing it to considering biomass heating systems for all new and refurbished buildings. It has already completed a 470 kW wood-fuelled district heating scheme for 166 flats, and a 500 kW scheme for the council depot. Both of these replaced old coal boilers, but the next scheme will use 800 kW of wood-fuelled district heating in new office buildings, in preference to gas. This work has enabled a small wood-chip supply business to start up, and Barnsley MBC is also starting its own wood-chip supply from Council waste.

Bio Regional Group, Surrey

Legislation in the London Borough of Croydon and other boroughs requires all significant new building developments to generate 10% of their energy from on-site renewable sources. The BioRegional Development Group brokered a deal between tree surgery business, City Suburban Tree Surgeons Ltd, and Croydon Council to manage and dispose of all the Council's wood waste. BioRegional established a TreeStation – a centre where waste wood is received from many sources, turned into wood-chip and delivered for use as a fuel for heating and combined heat-and-power. The TreeStation now has the capacity to process 15,000 tonnes per year.

Energy Audit Company, Northumberland

The Energy Audit Company (EAC) has managed a successful programme in which cavity wall insulation was installed free to all householders whose homes could benefit, in three districts of rural Northumberland. The housing in this area is largely old and much of it is off the gas grid so a high proportion is well below modern standards of heating. 1,700 cavity walls and 555 lofts were insulated through the programme. Eligibility for free insulation was based on whether the property could benefit from cavity wall insulation, rather than on the financial means of the house-holder. The scheme brought the benefits of improved comfort, reduced energy bills and reduced CO₂ emissions.

Kirklees Council

Kirklees Council, based in Huddersfield, took part in a major European project to supply electricity from PV in city buildings. The EU-funded SunCities Project contributed to the installation of 351 kWp of PV (also solar thermal systems) on a range of private and public-sector housing and residential homes in Huddersfield. This is the largest domestic PV programme in the UK, and represents about 5% of installed PV capacity. All buildings were either refurbished or newly built to high environmental standards, so households gained the benefits of energy efficiency as well as the more visible PV.

Good Energy, Wiltshire

Good Energy has set up the 'Home Generation' scheme, which gives payments to small-scale renewable energy generators for all the electricity which they generate, thus encouraging more renewable generation at a local level.

The scheme provides a payment of 4.5p per kWh to small renewable generators for all the electricity they generate. To join, generators must buy the rest of their electricity from Good Energy, and must install a simple meter to measure the total kWh generated. Home Generation customers typically earn about £100 per year through the scheme. There are

currently 200 generators in the Home Generation scheme, representing a total installed capacity of 440 kW.

Gloucestershire Warm and Well

The Severn Wye Energy Agency set up the 'Gloucestershire Warm and Well' partnership, linking seven local authorities with a range of organisations working on health and community support. The scheme is run throughout Gloucestershire and offers energy saving measures and advice to homeowners and private rented tenants. Discounts and advice are offered to everyone, and free installations are offered to those on low incomes, with health problems, or aged over 70. Strong links with health and social sectors have helped to identify the neediest households. Between 2001 and March 2006, the scheme has made improvements including insulation, draught-proofing and central heating in 8,957 properties, or 3.6% of all housing in Gloucestershire.

2005 winners

ALIEnergy, Scotland

Argyll, Lomond and the Isles is a vast landscape of scattered, mainly rural communities. ALIEnergy is a local agency which has created an array of energy innovations in the community, including wood chip heating for flats, geothermal heat pumps for houses and a community-owned wind farm, known locally as the 'Dancing Ladies'. Its three windmills are expected to generate up to £100,000 per year in revenue for the island community, sending out a clear message about the viability of wind power and setting a promising example for other communities to follow.

Centre for Sustainable Energy, Bristol

For the past 25 years The Centre for Sustainable Energy (CSE) has been carrying out a range of education, advice and policy work, promoting the case for energy efficiency, and for renewables. One of their initiatives has been the Energy Matters education programme, enabling children to carry out simple energy audits of their schools and homes. CSE found that over 75% of families involved had taken some energy-saving action as a result. Another initiative involves local sixth-formers in a Climate Change Challenge, engaging them on issues of energy use and carbon emissions, and encouraging them to challenge local authorities on what they are doing to meet carbon reduction goals.

Community Energy Plus, Cornwall

Community Energy Plus (CEP) set up the Home Health programme to provide free energy efficiency advice and efficiency measures to communities in deprived areas of Cornwall. It has installed efficiency measures in over 3,000 homes. Home Health has reached out to people in the most deprived areas of Cornwall by working within a specific community and providing information in a range of different ways, most importantly through a local community and health service referral network. This collaboration with trusted people within the community has encouraged large numbers of households to have their efficiency needs surveyed.

Renewable Devices Swift Turbines, Scotland

Renewable Devices Swift Turbines Ltd (RDST), a small company based in Edinburgh, has designed and brought to market the 'Swift' roof-mounted wind turbine, which has a rated power output of 1.5 kW. Installations started in August 2004, and over 200 Swifts have now been supplied. The Swift turbine is one of the first micro-wind turbines on the market, and RDST has raised interest in micro-wind worldwide.

Second Nature, Cumbria

Second Nature UK Ltd is a small company based in the Lake District, which has developed and brought to market Thermafleece, a roof-insulation material made from sheep's wool. Second Nature has sold enough Thermafleece to insulate about 2,100 lofts. Some advantages of Thermafleece over conventional mineral alternatives include being safer to

handle, helping to create breathable structures, much lower embodied energy, mostly renewable materials, ultimately biodegradable, and converting a waste (coarse wool) into a resource thus helping to sustain rural livelihoods. The sheep it is supporting are unique indigenous breeds which maintain the upland environment.

South Somerset Hydropower Group

South Somerset Hydropower Group (SSHG) is a group of water-mill owners based in South Somerset. They have installed small hydropower turbines at old water-mill sites to generate electricity. They have minimal impact on water flow, or local ecology. The hydropower installations generally promote the preservation of the historic mill buildings that house them, because mills used to generate electricity will be kept in a good state of repair. Mill owners earn an income from the sale of electricity.

Thames Valley Bioenergy,

TV Bioenergy trades in fuelwood, buying wood from suppliers, processing it, and selling to users. In 2005 they supplied over 6,200 tonnes of wood. TV Bioenergy collects wood residues (such as from tree surgeons), supports the return of woodland into regular management, establishes short rotation coppice (SRC) plantations (through TV Bioenergy, Coppice), and has built up a customer base, including the combined heat and power (CHP) plant at Slough Heat and Power, and a number of biomass heating systems in schools and other buildings.

2004 winners

Miles and Gail Fursdon, Devon

Miles and Gail Fursdon designed and built a 90 kW micro-hydro scheme at Old Walls, their family farm which lies within the Dartmoor National Park in Devon. It generates about 400 MWh/year of electricity, equivalent to the consumption of 80 homes, which is sold back into the grid. Local school-children studied the construction and now use the facility for parts of the curriculum. Colleges and universities are also encouraged to use the project for a variety of educational purposes. The plant has made a significant contribution to environmental protection and to the economy of a local farming community.

Rural Energy Trust, Rutland

The Rural Energy Trust (RET) works to promote the sustainable production and use of wood-fuel for heating. Activities include advice, training, demonstrations and presentations. Set up by a local farmer, RET works closely with its commercial counterpart, Rural Energy Limited (REL), which supplies wood-fuel and wood-burning equipment. By replacing fossil fuels with renewable biomass the project plays an important role in 'decarbonising' our energy economy while a locally based sustainable wood-fuel industry helps to create a sustainable rural economy.

2003 winners

BioRegional Development Group, Surrey

BioRegional's two main projects, the 'Z-Squared project' and the 'Continuing Professional Development Programme' (CPD), aim to expand on the experience of designing and building BedZED, the UK's largest 'carbon-neutral' eco-village, and to disseminate this experience within the housing and construction industries.

Z-squared is a design for a 2,000 home, 'zero waste - zero carbon' community for the Thames Gateway, east of London. If built it will contain a mixture of social and private housing, shops selling local goods, office space, a healthy living centre and a primary school. All the buildings will be highly energy efficient and will be powered by renewable energy sources. The development will have a car free core, with all basic amenities designed to be within walking distance of the houses, and will operate car clubs for those

who need to leave the community. Z-squared will have a long-term aim of sending no waste to landfill - all waste being recycled, composted, or converted to energy.

The Continuing Professional Development Programme is a series of 'One Planet Living' seminars that are held at BedZED. These look at the issue of 'eco-footprinting', a way of measuring our impact on the earth's resources, and demonstrate the feasibility, and viability, of building a 'green lifestyle' development like BedZED.

Cwmni Gwynt Teg Cooperative, Wales

Cwmni Gwynt Teg is a cooperative formed of three Welsh hill-farming families, who have developed, financed and built a wind farm on their own land. Moel Moelogan now has two operational wind turbines that are producing electricity for the local grid system in Conwy County, Wales. The combined output of these turbines is 2.6 megawatts per hour - enough to supply 1,600 homes. Moel Moelogan is the first community project of its kind in the UK, being 100% locally owned and with all income generated remaining in the area. The second phase of the project proposes to build a further nine turbines. If it goes ahead this will produce 30.7MW of energy per year, enough for a further 7,300 homes.

Carbon Descent (formerly Sustainable Energy Action), London

Solar for London (SFL) is a five-year programme that is installing solar water heating systems in London houses. The project aims to help reduce carbon emissions, and to reduce the number of people living in 'fuel poverty'. In its first year SFL focused on private households, making 29 installations. This latest part of the project will concentrate on social housing, targeting both housing providers and their tenants. SFL raises awareness of solar water heating systems and their suitability for the London climate. At the same time it offers a service that provides advice and technical information, guidance on potential sources of funding, and then introductions to a network of accredited manufacturers and installers.

Appendix 2: Policy landscape

| Policy | Lead department / organisations | Category | | | Sector | | | | | |
|---|---------------------------------------|-------------------|----------------|-----------------------|-------------------|-----------|-----------------|----------|-------------|-------------|
| | | Energy efficiency | Renewable heat | Renewable electricity | Micro / household | Community | Local Authority | Business | Large scale | Manufacture |
| Targets | | | | | | | | | | |
| Climate Change Act The Climate Change Act, passed in 2008, sets two domestic greenhouse gas reduction targets for the UK: <ul style="list-style-type: none"> • A reduction of at least 80 per cent (on a 1990 baseline) of greenhouse gases by 2050 • A reduction of at least 26 per cent (on a 1990 baseline) of greenhouse gases by 2020 (HM Government 2008e). | Secretary of State for Climate Change | x | x | x | x | x | x | x | x | x |
| Committee on Climate Change budgets The Committee has proposed the UK's first three carbon budgets to 2022. It recommends a UK domestic target of a 31 per cent reduction of greenhouse gases in 2020 (below 2005 levels) once a global deal is reached and a target of a 21 per cent reduction by 2020 (below 2005 levels) until a deal is reached (CCC 2008). | Committee on Climate Change | x | x | x | x | x | x | x | x | x |
| European Renewable Energy Directive The Directive sets renewable energy targets for member states. The UK's target is for 15 per cent of energy to be from renewable sources by 2020. | DECC | | x | x | x | x | x | x | x | x |
| Information provision | | | | | | | | | | |
| Act on CO₂ The Government's advertising campaign encourages people to save money and save energy by reducing their carbon footprint. It also includes an online carbon | DECC | x | | | x | | | | | |

| | | | | | | | | | | |
|---|---------------------|---|---|---|---|---|---|---|---|---|
| calculator to help provide information about the size of household emissions from transport, heat and electricity use (Direct Gov 2009). | | | | | | | | | | |
| Energy Saving Trust (EST) The Energy Saving Trust is a non-profit organisation funded by the UK government, devolved administrations and the private sector. It provides information and tailored advice to households, community groups and local authorities on how to save energy, renewable technologies and available grants and loans. | Energy Saving Trust | x | x | x | x | x | x | | | |
| Carbon Trust The Carbon Trust is a private company, which was set up by the Government in 2001. It aims to accelerate the move to a low carbon economy by helping businesses to reduce their carbon emissions and supporting the development and commercialisation of new low-carbon technologies. The Carbon Trust provides interest free loans for small businesses for energy saving equipment as well as funding for the development of new low-carbon technologies through seed-funding, as well as incubator and technology accelerator programmes. | Carbon Trust | x | x | x | | | | x | x | x |
| Energy Performance Certificates Energy Performance Certificates (EPCs) were introduced in the UK in 2007-08. An EPC describes the energy efficiency of a building using a rating scale from A to G and must be made available to prospective owners/tenants every time a building is constructed, rented or sold. Public buildings must also display energy certificates. EPCs were introduced in accordance with the European Directive on Energy Performance of Buildings (CLG 2009b). The Government is currently consulting on whether requirements to display the EPC on marketing material for properties should be strengthened (HM Government 2009a). | CLG | x | | | x | | x | | | |
| Smart Meters The Government plans to roll out smart meters to every household between 2010 and 2020 and to larger business from 2009. (BERR 2009c). Proposals to use CERT to encourage energy suppliers to provide real-time displays are currently out for consultation (HM Government 2009c). | DECC | x | | | x | | | x | | |
| Home Energy Advice Service The Home Energy Advice Service aims to roll out a tailored household energy advice service that will be delivered by Domestic Energy Assessors. | DECC | x | x | x | x | | | | | |
| Carbon pricing | | | | | | | | | | |

| | | | | | | | | | | |
|--|--------------|---|---|---|---|--|---|---|---|---|
| <p>European Emissions Trading Scheme (ETS) The EU ETS applies to all power stations and large emitting industries across Europe. The total CO₂ emissions from participating industries are capped and tradable permits to emit CO₂ are issued to participants who must present sufficient permits at the end of each reporting period to cover their emissions. The cap is set to get progressively tighter over time and so the price of permits should in theory increase, stimulating demand for low-carbon energy.</p> | DECC | x | x | x | | | | | x | x |
| <p>Climate Change Levy The Climate Change Levy is a tax on the use of energy that is applied to industry, commerce and the public sector. It aims to encourage energy efficiency (HM Government 2009a).</p> | DECC | x | | | | | x | x | x | x |
| <p>Climate Change Agreements Climate Change Agreements are for energy intensive industries and allow them to receive a reduction (of up to 80%) of their Climate Change Levy payments in return for setting energy efficiency or carbon reduction targets.</p> | DECC | x | x | x | | | | | x | x |
| <p>Carbon Reduction Commitment (CRC) The CRC was announced in the 2007 Energy White Paper and is planned to come into operation in 2010. It will be a new emissions trading scheme for large commercial and public sector organisations that are not covered by the EU ETS. It will apply to larger local authorities and business/industry with annual electricity bills in excess of £500,000. This will include for example, some local authorities, hospitals, supermarkets etc.</p> | DECC | | | | | | | | | |
| Requirements on energy suppliers / electricity generators | | | | | | | | | | |
| <p>Energy Efficiency Commitment The Energy Efficiency Commitment (EEC) was a statutory obligation on energy suppliers to provide energy efficiency measures to households. It ran in two phases from 2002-2005 and 2005-2008. The target for the first phase was an energy saving of 62 TWh and was estimated to cost energy supply companies £486 million. The second phase target was 130 TWh and was estimated to cost £1,250 million (EST 2007). Half of the measures had to be targeted at 'priority groups' (such as those on low incomes and the elderly). In 2008, EEC was replaced by the Carbon Emission Reduction Target (see below).</p> | Defra | x | | | x | | | | | |
| <p>Carbon Emissions Reduction Target</p> | Defra / DECC | x | | | x | | | | | |

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| <p>The Carbon Emission Reduction Target (CERT) came into force in 2008 and runs until 2011. CERT puts an obligation on energy suppliers to provide energy efficiency measures to households resulting in emissions reductions of 154 MtCO₂. A total of 40 per cent of this activity is targeted at vulnerable groups such as the elderly. Energy companies were expected to spend £2.8 billion to meet this obligation. In September 2008, the Government announced that CERT would be extended by a further 20 per cent (subject to consultation) as part of the Government's Home Energy Saving Programme, increasing the expected cost to energy companies by £560 million (Number 10 2008, HM Government 2008c). The Government is currently consulting on the proposed changes to CERT.</p> | | | | | | | | | | |
| <p>Successor to CERT: Suppliers Obligation The HES consultation sets out plans to extend CERT until 2012 (it is currently scheduled to end in 2011). Government is reviewing options for what a successor to CERT might look like. The consultation suggests that a cap-based supplier obligation is not desirable and proposes two models for meeting energy efficiency targets:</p> <ul style="list-style-type: none"> • Supplier-led model with an outcome target: the number of measures suppliers have to install would depend on whether emissions exceed or are within a cap. Or, suppliers would be required to demonstrate emissions reductions from their customers • Delivering through a central coordinating body: an independent central body would coordinate activities to meet energy saving targets, allowing greater targeting of vulnerable groups, easier partnership with local authorities and a clearer interface for members of the public. <p>(HM Government 2009a)</p> | DECC | x | | | x | | | | | |
| <p>Home Energy Saving Programme/Fuel bills package The Government announced a package of measures aimed at helping households to save energy and money from their fuel bills in September 2008. The package consists of three measures:</p> <ul style="list-style-type: none"> • Increasing the CERT targets by 20% • Setting up a new Community Energy Saving Programme • Increasing government funding for the Warm Front programme | DECC | x | | | x | x | | | | |
| <p>Community Energy Saving Programme (CESP)</p> | DECC | | | | | | | | | |

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| <p>The CESP was announced in September 2008 as part of the Government's Home Energy Saving Programme. The CESP will be an additional obligation on electricity suppliers and electricity generators to provide measures that will reduce carbon emissions and energy bills for low income households. The CESP will aim to focus on measures that deliver significant improvements (rather than the most cost effective CO₂ reductions as CERT does) and will encourage companies to take a 'whole house approach' and fit multiple measures in one property. The measures must be offered to households in areas that fall within the lowest decile of the Index of Multiple Deprivation's income domain.</p> | | | | | | | | | |
| <p>Renewables Obligation (RO) The RO requires electricity suppliers to obtain an increasing proportion of their electricity from renewable sources each year (6.7% in 2006-07). Generators of renewable electricity are awarded a Renewables Obligation Certificate (ROC) for each MegaWatt hour (MWh) of electricity generated. These are then passed on to electricity suppliers at the point of sale. ROCs are tradable and suppliers must present sufficient ROCs to the Regulator to meet their requirements each year. If suppliers are not able to meet their obligation, they must pay a 'buyout price', which is then returned to all suppliers according to the level of ROCs they have provided. The buyout price is set each year by Ofgem and is adjusted to reflect changes in the Retail Prices Index (Ofgem 2009).</p> | DECC | | x | | | | | x | |
| <p>Renewable Heat Incentive (RHI) The Renewable Energy Strategy Consultation proposed the introduction of a financial incentive for renewable heat. Of the two options offered – a Renewable Heat Incentive (RHI) and a Renewable Heat Obligation – the RHI emerged as the preferred model. The Energy Act 2008 provided powers for Government to introduce an RHI and Government is now developing detailed plans for how the RHI would operate in practice. A full consultation on the proposals is planned for later in 2009 with the aim of having the RHI in place by April 2011 (HM Government 2009a). An RHI would operate in a similar way to feed-in tariffs used for renewable electricity and would pay revenue on the basis of the quantity of heat generated. The RHI will apply to all generators of renewable heat, including households, communities and industrial scale operators. The Government is consulting on some aspects of the RHI as part of the Heat and Energy Saving Strategy, such as:</p> | DECC | x | | x | x | x | x | x | |

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| <ul style="list-style-type: none"> • How the incentive should be banded – whether by technology or customer group • How to minimise suppliers’ administrative costs • How assistance can be provided to small scale heat generators to finance the initial capital costs • How demand for renewable heat can be maintained prior to the introduction of the Incentive. | | | | | | | | | | |
| Public spending | | | | | | | | | | |
| <p>Warm Front Warm Front is a government-funded programme operating in England to provide grants to low income and eligible pensioner households to improve home central heating and insulation measures. In September 2008, the Government pledged to increase spending on this programme by £74 million over the next two years, taking the total spending for the next three years under this programme to £874 million (HM Government 2008d).</p> | DECC | x | | | x | | | | | |
| <p>Decent Homes Standard The Government has set a standard for Council-owned social housing, and expects 95 per cent of all social housing to meet this standard by 2010. The standard includes thermal comfort as a criterion and has led to investment in energy efficiency measures from local authorities (CLG 2009c)</p> | CLG | x | | | x | x | | | | |
| <p>Low Carbon Buildings Programme (LCBP) The LCBP provides grants for micro-renewable technologies. Householders can apply for a grant of up to £2,500 towards the cost of installing micro-renewables. Community groups, public and non-profit sector organisations can also apply for grants under phase two of the scheme (BERR 2009).</p> | DECC/BERR | x | x | x | x | x | | | | |
| <p>Community Energy Efficiency Fund (CEEF) The CEEF was launched in 2007 and provided grants of a minimum of £20,000 for campaigns to provide advice to vulnerable households about energy efficiency measures they could take and any available grants or loans. A bidding process was used to award grants and a total of 49 were awarded in 2007. The scheme ran only in England and applicants had to provide evidence of commitment from local authorities (Defra 2009).</p> | Defra | x | | | x | x | | | | |
| Regulation | | | | | | | | | | |

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| <p>Building Regulations The Government has set energy efficiency and carbon requirements for new homes that tighten progressively over time until in 2016 all new homes should be zero carbon. A consultation on the definition of zero carbon is currently underway. Government has also announced an ambition for all non-domestic buildings to be zero carbon by 2019 (HM Government 2008a).</p> | CLG | x | x | x | x | | x | x | | |
| <p>Product Standards Product Standards are set at a European level and include minimum standards for some electrical equipment.</p> | EU | x | | | x | | | | | |
| Local Authorities | | | | | | | | | | |
| <p>Home Energy Conservation Act (HECA) The HECA is an obligation on local authorities to identify practicable energy efficiency measures in residential accommodation in their area and to report to the Secretary of State on progress towards implementing these measures.</p> | DECC | x | | | x | | x | | | |
| <p>Nottingham Declaration on Climate Change The Nottingham Declaration has been signed by over 300 local councils in England. By signing up, councils pledge to develop local plans to tackle climate change and to prepare their communities to deal with the consequences of unavoidable climate change (EST 2009).</p> | EST | x | x | x | | | x | | | |
| <p>Merton Rule The 'Merton Rule' is a planning policy that was developed by Merton Council in 2003. It requires all new developments to generate 10 per cent of their energy needs from on-site renewables. Other local authorities have since emulated this policy.</p> | Local Authorities | | x | x | x | | x | x | | |
| <p>National Indicators Government has published a set of 198 indicators that local authorities must report on. This includes NI 185: reduction in CO₂ emissions from local authority operations, NI 186: per capita reduction in CO₂ emissions in the LA area and NI 187: tackling fuel poverty – for people receiving income based benefits living in homes with a low energy efficiency rating.</p> | CLG | x | x | x | x | x | x | x | | |