

It's not just about the money : taking the hassle out of energy saving

By Gill Owen

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## **Contents**

Executive summary	4
Introduction	7
1.Why consumers don't install energy saving measures	9
2.Lack of knowledge/confusion	10
3.Perceived costs exceed perceived benefits	12
4.Lack of trust	13
5.Provision of information, advice and accreditation	14
6.Community action/delivery	16
7.Government schemes	17
8.Recommendations	18
Conclusions	27
Appendix 1 : Surveys of householders' reasons for installing or rejecting energy saving and renewable energy measures	28
Appendix 2 : Community and area based delivery of energy efficiency	31
Appendix 3 : Databases to assist consumers make decisions on energy saving	33

## **Executive Summary**

To achieve a low carbon and sustainable future will require major action by households, businesses and government. Whilst many households have installed insulation, more efficient boilers and low energy light bulbs, there remains significant potential for greater action. A number of grants and other incentives are available or are planned (e.g. feed-in tariffs, Green Deal) to reduce the cost of energy saving measures. However, there are also other factors inhibiting take up which include :

Lack of knowledge/confusion :

- what makes most sense between the various options (e.g. different forms of microgeneration, wall insulation etc);
- where to get unbiased advice and good quality work

Perceived costs exceed perceived benefits (including “hassle factor”)

- will the benefits outweigh the costs;
- concerns about aesthetics, convenience, reliability, disruption
- will it add to or detract from the value of the property
- concerns that “better for the environment” equals less desirable service

Lack of trust

- will those providing ‘solutions’ to provide the best one for them
- problems with rogue installers, sales techniques etc.

There are therefore many reasons why consumers do not install energy saving measures – it is not just about money. To secure mass take-up – not just by a small number of highly motivated consumers – action will be needed in a number of areas to complement the financial incentives.

## **Recommendations**

### **Engagement and delivery**

- The advice provided under the Green Deal should include the offer of home visits by qualified impartial accredited energy advisors.
- Exemplars or show homes would involve local residents who have had work done hosting visits by others to see the measures in place, hear about the pros and cons, costs, disruption etc.

- A key to securing wider take-up will be local schemes that can provide a personalized service. Components of local delivery could include :
  - A one-stop shop, to assist householders in technology choice, Green Deal finance, grant applications, planning permission, installation, use and maintenance.
  - Private sector and community enterprise suppliers who offer services tailored to customer requirements.
  - Group purchase schemes to reduce the costs of measures.
  - Community scale solutions might work better in some cases as they could take risk away from individuals.

### **Accreditation and information**

It is not straightforward to get useful data on measures and techniques. There is therefore a need to start building up databases on : trials and performance; completed jobs; trusted installers ; appliance energy use.

There are a number of systems of accreditation, certification and consumer codes in the energy efficiency and microgeneration sectors. The Green Deal initiative should build on the existing systems of standard setting and accreditation to enhance their usefulness to consumers through :

- clarity about the various accreditation schemes and their status
- ensuring accreditation schemes use effective compliance methods – auditing, mystery shopping etc (this may need additional resources)
- better promotion so that consumers know how to check whether advisors, installers and sales people are members of appropriate schemes – this is important also to ensure that reputable installers, advisors etc know that it is worth being members of these schemes
- a clear system of accreditation and standard setting for advisors

### **Funding and organisation**

There is a need for clarity over organisation and funding for the range of engagement, delivery, information and accreditation activities which will be essential underpinning for the Green Deal. Some activities may be viable through non-subsidised private sector action; others may be suitable for

voluntary action. For example, community organisations and/or local authorities could organise visits to exemplar homes.

However, with cuts in local authority budgets, local advice and delivery may be difficult to fund. Whilst community groups can be very good at motivating volunteers, they need enough resources to pay for co-ordination of activities. To date funding has been provided largely through pilot initiatives (e.g. Big Green Challenge) or short term grants. If we are to see mass mobilisation of local action then funding sources will need to be more substantial and lasting. Options might include the Big Society Bank or the Green Investment Bank.

For some of the information and accreditation activities, central or local Government funding will be required to provide stability and independence from vested interests and thus to ensure consumer confidence. In some cases there will scope for joint Government and private sector funding.

### **Conclusions**

Effective support for local delivery plus central information and standard setting would enhance consumer confidence and hence should lead to greater willingness to take action. Better informed consumers would drive better standards amongst suppliers and installers and help to create a bigger market for quality installers and suppliers. This should also mean that over time less subsidy would be required for energy saving measures because there would be more of a market.

The measures proposed in this paper are aimed at tackling some of barriers to energy saving by households. However, it is quite possible that the majority or a substantial minority of households still will not install measures or change their behaviour to reduce their carbon emissions. In that case further options might have to be considered to drive take-up.

## Introduction

To achieve a low carbon and sustainable future will require major action by households, businesses and government. For households the major areas are in their use of energy and water in their homes, the transport options they choose, and their efforts to reduce and recycle waste. This paper will focus on energy use in the home, plus some water saving measures. However, effective action on energy use by many more households could open up the potential for more action in other areas, such as transport.

Two main types of actions are required from households to reduce the impact of their home energy use on the environment – changes to their behaviour; investment.

Investment actions :

- energy efficiency measures – wall, floor and loft insulation; draughtproofing, double glazing; efficient appliances and lighting
- water efficiency measures such as low flow shower heads,
- renewable energy supply options in the home – solar PV and thermal, wind (where suitable), biomass, heat pumps etc

Behavioural actions :

- turning down and turning off/not using appliances, heating etc ;
- taking showers instead of baths

Whilst many households have taken action such as installing insulation, more efficient boilers and low energy lightbulbs, there remains significant potential for greater action. For example, in England :

- of the 20 million homes with central heating boilers, only 3.7 million have the more efficient condensing boilers
- of the 15.5 million homes with cavity walls, only 7.4 million (33%) have had them insulated
- 15.7 million homes have full double glazing and 2.9 million have half their windows double glazed (out of 22 million homes in total)
- of the 20 million homes with lofts, only 4.7 million have the recommended 200mm<sup>1</sup> loft insulation<sup>1</sup>

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<sup>1</sup> All data taken from : English Housing Survey 2008-09. Headline Report. Department of Communities and Local Government, 2010.

This paper does not address individual financial support to households. A number of grants and other incentives are available or are planned (e.g. feed-in tariffs, Green Deal). Nor does it address the issue of large scale “above the line” marketing and promotion of climate change or other environmental messages. Both householder incentives and the message are important first steps but, this report will argue, they are unlikely to be sufficient to secure mass take up of measures and behavioural changes. The focus in this report is on the range of other support that will be required alongside individual householder incentives to get mass action. This includes information, advice, standards and quality control, engagement, and “making it simple” – i.e. taking the hassle out of energy saving.

### **It’s not just about money**

“It’s not just about money, it’s helping people know what they could do.”

**“We need people on the ground to help us. How can you change if you don’t know what to change to ?”**

**“We need knowledge and faith in the technologies. If someone like Dave, the expert here today, came to our village and educated people it would make a difference and give us more confidence.”**

The above quotes are taken from the Big Energy Shift report on the findings of a series of citizens forums held in a number of locations in 2008-09.<sup>2</sup> The premise of this paper is that even with financial incentives for energy efficiency and renewable energy (such as the Green Deal and feed in tariffs) we may get limited action if many other issues are not addressed. Many middle and higher income households do not lack access to capital and are very happy to pay large sums of money for home improvements (e.g. kitchens, bathrooms) or other things that they value. As the quotes above illustrate there are other factors that limit environmentally desirable actions, particularly confusion over what to do.

Another factor to be considered is whether financial incentives encourage inappropriate action– e.g. neglect of basic insulation in favour of more visible renewables – creating the risk of a backlash if consumers subsequently do not see the savings promised. There is also the risk of waste of substantial consumer funded subsidies if consumers invest in inappropriate or badly

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<sup>2</sup> The Big Energy Shift. Report from citizens’ forums. IPSOS Mori, 2009;

installed measures – for example, through feed-in tariffs, carbon emissions reduction target, Green Deal etc.

## Key issues that this report will address :

- why consumers do not install energy saving measures
- how to deliver energy saving measures in a way that secures action
- how to enable consumers to take actions that are right for them and right for the environment
- whether and how to encourage collective action between households and within communities

## 1. Why consumers don't install energy saving measures

Although lack of finance can be a barrier, even when substantial subsidies are available many households do not install insulation etc. Energy suppliers report problems with securing take up of loft and cavity wall insulation even when these measures are highly subsidised under the CERT programme (where typically, households can have loft insulation for £100-150 and cavity wall insulation for £200-300) In surveys<sup>3</sup> many people say they are put off for a variety of reasons including :

Lack of knowledge/confusion :

- they don't know what makes most sense for them (environmentally and financially) between the various options (e.g. different forms of microgeneration, wall insulation etc);
- they don't know enough about the various technologies or measures
- they don't know where to get unbiased advice

Perceived costs exceed perceived benefits (including "hassle factor")

- they are sceptical that the benefits will outweigh the costs;
- they have concerns about aesthetics (e.g with solid wall insulation)
- convenience issues (e. g. charging electric vehicles)
- will it add value to the property or will it detract from the value (e.g. external wall insulation and some forms of double glazing might lower values in some areas)

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<sup>3</sup> For example : The Big Energy Shift. Report from citizens' forums. IPSOS Mori, 2009; Willingness to pay. Project de-brief. Energy Saving Trust/DECC, 2009

- concerns that “better for the environment” equals lower or less desirable service (e.g. low energy lighting, low flow shower heads, electric cars)
- risk/maintenance/reliability concerns for some less well established technologies –e.g. many renewables, electric vehicles
- they don’t want the disruption that goes with some measures
- they cannot find installers who will do a complete job (e.g. remove and replace items from a loft before and after insulating it).
- local peer pressure to change is absent and a prevailing culture of ‘it’s all too complicated and difficult’ prevails

### Lack of trust

- they do not know which installers will do a good job;
- they don’t trust those providing ‘solutions’ to provide the best one for them
- problems with rogue installers, sales techniques etc.

These three types of factors are now examined in more detail.

## 2. Lack of knowledge/confusion

Many consumers do not install energy saving measures and renewable energy technologies because they are not familiar enough with them and thus lack confidence in making choices.

**“Participants often compared buying new technologies to buying a new car....They are confident because they have seen a vast number of cars on the road, have access to a world of advice, anecdotal and expert, written and word-of-mouth. They are confident that the technology is tried and tested. This confidence does not yet exist with regards to new energy technologies, and so people constantly asked how they work ... we suggest this reflects their desire for open homes, exemplars, and other evidence that the technologies have been tried and tested – confidence *that it works*, not knowledge of *how it works*.”<sup>4</sup> (original emphasis)**

The lack of knowledge and lack of confidence in the products affects the decision to purchase but also affects how measures are used when they are installed.

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<sup>4</sup> The Big Energy Shift. Report from citizens’ forums. IPSOS Mori, 2009

'Is it better to have the heating on constant and low or timed but higher temperatures? ... Very easy for everything to become "too difficult" and hence we do nothing.'<sup>5</sup>

Customer behaviour can cause major differences in the impact of energy and water efficiency measures and renewable electricity and heat technologies in different properties. Thus figures for average bill savings may bear little relationship to actual customer experience. (see also Appendix 1)

- Switching from baths to showers should reduce water consumption and the need to heat water, but if the household starts to use the shower more frequently than they used the bath and/or to take long showers (common behavioural responses), then the savings on water and energy bills will be lower than expected.
- Insulation measures will lead to the biggest reductions in energy use (and bills) in homes where the indoor temperature and hours of heating were (before insulation), already at the desired level. However, many households (not just the fuel poor) take a significant proportion of the benefit of insulation measures in increased indoor temperatures (average internal temperatures in UK homes in winter are around 18C, whereas 21C is an assumed comfortable temperature in living rooms and tends to be the norm in well insulated modern homes).<sup>6</sup>
- Another factor is that following installation of insulation households may open windows more frequently to reduce temperatures in rooms (notably bedrooms) that have become too warm.<sup>7</sup>

The customer behaviour factors are important for three reasons.

- Firstly, because they may mean that energy, water and carbon savings are lower than expected, thus reducing the benefits to the environment and to others who would find economic value in the savings (i.e. energy or water suppliers or networks).
- Secondly, because they may result in lower benefits to the consumer – although it may just be that the consumer takes the benefits in the way they prefer – more service rather than lower bills.

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<sup>5</sup> Sally Caird and Robin Roy. Consumer adoption and use of household energy efficiency products. Open University, December 2007.

<sup>6</sup> HM Government. 2050 pathways analysis. July 2010, p.96.

<sup>7</sup> Milton Keynes Energy Park Revisited: changes in internal temperatures. AJ Summerfield\*, HR Bruhns, JA Caeiro, RJ Lowe, JP Steadman, & T Oreszczyn. UCL, 2006. [http://eprints.ucl.ac.uk/2305/1/Microsoft\\_Word\\_-\\_CP-UCL-04-NCEUB06-conf-MKEP-Revisited-Temperature-v1.9-04apr06-AJS.pdf](http://eprints.ucl.ac.uk/2305/1/Microsoft_Word_-_CP-UCL-04-NCEUB06-conf-MKEP-Revisited-Temperature-v1.9-04apr06-AJS.pdf)

- Thirdly, because the expectation or experience of lower bill savings can condition consumer action leading consumers to dismiss certain measures because they don't believe they will have lower bills (based on their own or others' experiences).

### 3. Perceived costs exceed perceived benefits

The use of the term “perceived” in respect of costs and benefits is used here as this is what matters in terms of consumers taking action. In some cases actual costs exceed benefits and this may be the case far more frequently than is often acknowledged, particularly when search, transaction and opportunity costs are taken into account (see under the “hassle factor” below). However, from the consumer perspective whether a cost is real or perceived will often be irrelevant – if I believe the cost of something is high and the benefits low then this may prevent me from taking action unless this perception (where erroneous) can be corrected. It is therefore possible to break down the cost issue into three categories :

- actual costs do exceed consumer benefits (e.g. energy bill savings over a reasonable payback period) and this is widely recognised – for example with many new and more expensive measures, which is why governments often subsidise them
- full costs to the consumer exceed the benefits but this may not be widely recognised due to some costs being overlooked or ignored in official calculations of costs and benefits (e.g. costs of redecorating, clearing lofts etc)
- costs do not in reality exceed benefits for most consumers but many consumers may believe the measures cost more than they do, or produce lower benefits than they do

#### **Hassle factor**

**“These findings should not be interpreted to suggest that people simply do not have enough disposable income to invest. When encountering innovation, research participants often cite cost as a barrier for any new innovation. Unwillingness to spend money can often be simply the way that people express the other barriers... such as risk or fear of disruption. When pressed, participants for the most part admitted that these new**

**technologies would simply not be a priority for their disposable income.”<sup>8</sup>**

The hassle factor is often considered a subsidiary or minor issue but in fact, as the quote above from “The Big Energy Shift” report suggests, it is much more significant for a number of reasons. Firstly, many “hassle factor “ issues can actually be viewed as additional costs, that make some measures less cost beneficial. Either the householder would have to pay someone to remove the hassle or they would have to use their own time (which has an opportunity cost – they could be doing something else that they might prefer to do). The solution to this might thus have to be price reductions for the measures or greater subsidies. Secondly, even if not viewed as costs they can be viewed as barriers to action that, without some intervention (e.g. better information and advice) will inhibit take up.

Appendix 1 summarises the results of a project which surveyed UK householders’ reasons for installing - or considering but rejecting – energy efficiency and renewable energy measures. For example, loss of storage space was a key reason why many would not increase loft insulation. The authors, Caird and Roy, concluded that : **“Policies and actions need to go beyond addressing the financial barriers to adoption, which were less important than other barriers for less costly measures such as insulation and lighting.”<sup>9</sup>**

#### 4. Lack of trust

With high pressure sales techniques being employed by some solar thermal and solar PV installers, trust is a key issue.

**‘A salesman came around and wanted me to sign on the spot, a kind of double glazing salesman. I refused saying that I never made decisions like that. I received a brochure from Suffolk Council about grants for solar thermal water heating and I was happy to pursue this.’<sup>10</sup>**

The performance of many technologies can vary greatly between properties, and siting on individual properties can also be an important issue for some technologies. In the case of solar and wind systems for example, they will not

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<sup>8</sup> Big Energy Shift report p.36

<sup>9</sup> Sally Caird and Robin Roy. Consumer adoption and use of household energy efficiency products. Open University, December 2007.

<sup>10</sup> Caird and Roy, op.cit.

be suitable at all for some properties, whereas for others they need to be carefully positioned to secure optimal performance. Competent and reputable installers will take siting factors into account and will not sell technologies at all to households for whom they are unsuitable, but there are some companies who are more concerned with making a sale than in ensuring that the product is suitable. There is also a natural tendency amongst sales people to present their product in the best possible light to secure a sale. This can lead some to make exaggerated claims for performance – e.g. to present maximum potential as the average. Consumers need to be able to trust the advice they are given about specific products if mass take up is to be achieved. As the above quote suggests, some consumers might have more confidence in independent sources such as local councils, community organisations etc.

### 5. Provision of information, advice, accreditation

The main source of independent advice at present is via the Energy Saving Trust (EST). The EST provides useful information and advice on its web site on energy and water saving, using renewable energy and waste reduction and recycling. However, the web site advice is generic and based on average assumptions. Waterwise also has useful generic information on its web site on water saving, but again such a site is not able to provide tailored advice. The EST also provides energy advice to people who call or visit its regional advice centres, but, Matthew Rhodes of Encraft (a renewable energy consultant) has pointed out, these advisers have limited ability to inform individuals about the accurate potential of specific technologies on their property as the advisors largely use simple software tools to answer standard questions with standard answers.<sup>11</sup> Rhodes has also raised the concern that because this advice is free, it inhibits development of a market for more sophisticated technical advice.

The main accreditation schemes include :

- The Microgeneration Certification Scheme (MCS) certifies the technical quality of microgeneration products and competence of installers. MCS registration is required for all companies that wish their products or services to qualify for feed-in tariffs and other government support.

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<sup>11</sup> Matthew Rhodes “Seven coherent policies to create a viable UK energy future. A practitioner’s perspective. Encraft, 2009  
<http://www.encraft.co.uk/ws/publications/Seven%20policies%20to%20create%20a%20viable%20UK%20energy%20future.pdf>

- The REAL Assurance Scheme sets standards for member companies who sell small renewable electricity or heat technologies to households, community buildings or small businesses. The Code covers such matters as sales techniques, information, handling consumer deposits, contract conditions etc. Membership of the REAL Code is required to gain MCS registration.
- National Insulation Association (NIA) Code of Practice sets standards for members on such matters as sales and marketing, contracts, technical training, health and safety.
- Cavity Insulation Guarantee Agency provides an independent 25 year guarantee for defects in materials and workmanship for cavity wall insulation installed by NIA members.

Another source of very useful information are the reports published by Which ? on specific technologies and installations, including the mystery shopping that they carry out to test the consumer experience. However, these reports are only available to those who subscribe to the magazine.

Getting basic information on appliance energy usage is not straightforward and many consumers have limited knowledge about how much electricity different appliances use. Ironically such information was widely available in the 1980s from the old regional electricity boards. But there is no obvious source within the UK (apart from David McKay's book<sup>12</sup>) of the information available on the Energy Australia (an Australian energy supplier) website<sup>13</sup>. This includes :

- a long list of appliances with electrical consumption and running costs information that enables people to see which appliances are most energy consuming
- a booklet showing energy usage of different appliances room by room that compares older and newer appliances in terms of running costs

Good information to consumers on the energy consumption of different appliances, heating systems etc could help consumers make sensible behavioural changes. Presenting information in a simple and standard easy to understand way – e.g. David MacKay converts all fuel uses for all purposes to a kwh/day measure<sup>14</sup> – will make it easier to compare relative energy use e.g. driving 10 miles compared to heating your house by gas for a day; leaving a phone charger plugged in for a week compared to a 10 minute electrically heated hot shower etc . Given that there are so many different tariffs it would be difficult to provide the information that would be most useful to consumers –

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<sup>12</sup> McKay, D. Sustainable energy without the hot air., UIT, 2008. Contains chapters on heating and gadgets that give consumption (in kwh) for many appliances. [www.withouthotair.com](http://www.withouthotair.com)

<sup>13</sup> [www.energyaustralia.com.au](http://www.energyaustralia.com.au)

<sup>14</sup> David MacKay. Sustainable energy – without the hot air. UIT, 2008.

the costs of running different appliances. However, it would be possible to provide electrical consumption figures.

## 6. Community action/delivery

A number of area based initiatives to promote a range of environmental actions, particularly energy saving, have been running for several years. Some have operated on a very small and local scale and have been run largely by groups of volunteers; others have had varying degrees of funding from central and local government and energy suppliers. Such approaches typically involve all households in an area being offered face-to-face energy advice, together with insulation and sometimes other measures such as CFLs, low flow shower heads, “hippo” devices etc. Eligible households may also be offered heating measures under Warm Front and some schemes also promote renewable technologies. Some households (those on low incomes) will be offered measures free of charge (CERT or Warm Front) whilst others will often receive measures at highly subsidised prices (e.g. with CERT subsidy). In some cases other grants are also available. Examples of some schemes are given in Appendix 2. They include Warm Zones, Community Energy Saving Programme (CESP), Energy for Good and The Big Green Challenge. There are many other examples of such schemes which have been described in other recent reports.<sup>15</sup>

It is often suggested that area-based approaches will lead to increased take up of measures. A review for Consumer Focus Scotland found that “although area-based schemes increase the take-up rates for insulation measures, take-up rates remain low” and that “the scale of most area-based schemes is very small.”<sup>16</sup> A previous report found that take-up rates in area-based schemes in Scotland is below 10%.<sup>17</sup> This compares with 13.5% in the Warm Zones schemes in England. However, higher take up rates exist where free measures are provided –e.g. Kirklees (38%) and Hadyard Hill (57%).<sup>18</sup>

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<sup>15</sup> For example : The future is local. Empowering neighbourhoods to improve their communities. Sustainable Development Commission, July 2010.

<sup>16</sup> Review of area-based energy efficiency initiatives in Scotland. Report to Consumer Focus Scotland. CAG Consultants, March 2010.

<sup>17</sup> Street by street, house by house, area-based retrofit for low carbon homes: Best approaches for Scotland. WWF Scotland, 2010

<sup>18</sup> Review of area-based energy efficiency initiatives in Scotland. Report to Consumer Focus Scotland. CAG Consultants, March 2010.

The review identified challenges faced by area based schemes which included:

- The complexity of the advice and assistance packages makes it challenging to identify the most appropriate support for households.
- Dealing with flats, particularly mixed tenure,
- Difficulties in working with homes which are not owner occupied.
- Funding issues make it difficult for organisations to plan effectively.
- Accessing centrally-held data is often problematic.
- Many householders are wary of cavity wall insulation.

The Big Green Challenge demonstrated that there is considerable enthusiasm for such action in some communities and that they can often deliver impressive results. Communities can often “spot and develop opportunities that private business or the public sector could or would not be able to take advantage of”<sup>19</sup> However, the evaluation of the Big Green Challenge did conclude that to be successful, communities need financial support, good leadership and organisational capability.

Thus area based schemes could help to improve take up but it is clear that they do require sufficient resources to be able to deliver and they can still face the problems of lack of householder interest in some measures. And to date such schemes are still available in only a small number of areas.

## 7. Government schemes

### **Green Deal/FITs/RHI**

Feed in tariffs for renewable electricity technologies are stimulating many households to install these measures, particularly solar PV. If some form of renewable heat incentive comes into effect this is likely to have a similar impact on technologies such as heat pumps.

The Green Deal will be a new means of delivery of energy saving measures (likely to start 2012 or 2013), the core feature of which is that households will be able to pay for measures installed via their energy bills over the long term

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<sup>19</sup> The Big Green Challenge. Final evaluation report. NESTA, 2010.

(for example, 25 years), and not have to make any up-front financial commitment. In addition the Green Deal will aim to provide :

- accredited advice and recommendations
- co-ordinated offers (one point of contact)
- reassurance that work is of a high standard

Energy suppliers will deliver the Green Deal to their customers but it is also envisaged that others may become involved such as other businesses (e.g. supermarkets) housing associations, third sector organisations. Some energy suppliers are examining setting up Green Deal style offerings to their customers sooner than 2012.

These incentives could all increase the volume of households looking to install measures and also new entrants into the markets to supply them. There will therefore be an increasing need to provide good advice and quality control to build consumer confidence in the Green Deal. The remainder of this report now explores what is needed to build this confidence and enable more consumers to take up energy saving measures.

## **8. Recommendations**

As this report has illustrated, there is a range of reasons why consumers do not install energy saving and renewable energy measures at present – it is not just about money. If we are to secure mass take-up – not just by a small number of highly motivated consumers – then action will be needed in a number of areas to complement the financial incentives such as the Green Deal, feed in tariffs and renewable heat incentive. The range of support required falls into two main areas :

- engagement and delivery
- accreditation and information

### **8.1 Engagement and delivery**

#### **8.1.1 Personalised advice**

A key message that comes from many recent surveys and discussions with consumers is the need for personalised advice which in many cases will best be

provided face to face or via local information sources such as community or council run web sites. For example, in the Caird and Roy survey consumers wanted more detailed, independent information and advice on:

- The costs, performance and payback time of different manufacturers' systems;
- The suitability of the home, its existing appliances, heating and electrical systems, and the compatibility of renewables with the building structure;
- How to operate systems and/or change lifestyles to maximise carbon reductions.

Individual advice is intended to be a key part of the Green Deal. The advice provided under the Green Deal initiative should include the offer of home visits by qualified impartial accredited energy advisors for those consumers who would like such a service.

A good tailored individual advice session (by a qualified advisor) is likely to cost upwards of £100. Some consumers may be willing to pay for advice, although attempts to date to market such services have not been very successful.<sup>20</sup> There could be scope for advisors to link with installers to offer vouchers to be redeemed against the cost of measures thus in effect creating a free advice service for those who then take action. However, there would be a need to ensure that this does not compromise the independence of the advice. Another option might be to cut costs through community action to "bulk buy" advice for a number of households in a street or neighbourhood – this would reduce travel time for advisors and thus enable them to offer the service at a better price. In a tough economic climate it seems unlikely to be realistic to expect individual advice to be centrally funded by the taxpayer.

### 8.1.2 Exemplars

Exemplars or show homes would be a way for people to see what can be done. This could be organised at local level and would involve local residents who have had work done being willing to host visits by other local residents to see the measures in place, hear about the benefits and discuss what was involved, pros and cons, costs, disruption etc. This will require some

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<sup>20</sup> For example the Green Homes Concierge Service in London, funded by the LDA, which had limited take up and was closed down in 2009. [http://www.lda.gov.uk/Documents/Board-and-committee-papers/board-papers/2009/4-February-2009/Public\\_Item\\_02\\_6\\_1\\_Appendix\\_1.pdf](http://www.lda.gov.uk/Documents/Board-and-committee-papers/board-papers/2009/4-February-2009/Public_Item_02_6_1_Appendix_1.pdf)

organisation as residents may be wary about allowing people they don't know into their homes and also they will want to have the visits only at certain pre-arranged times. So there is a clear role here for community organisations, residents associations and/or local authorities to organise such visits.

### 8.1.3 Delivery

Getting customers to take up measures requires quality installation and making it simple for the householder –removing the hassle factor. The experience of a wide range of area based delivery schemes suggests that a key to securing wider take-up will be local schemes that can provide a personalized service and develop a sense of whole communities taking action together. In the Caird and Roy survey, households who installed solar thermal water heating were very pleased when approved installers brought demonstration models to their home or introduced them to neighbours to view their systems, and several mentioned the need for a trusted official source of advice.

It is clear therefore that people are reassured by schemes such as Energy for Good, that help build trust by providing a complete service, including recommending reputable installers and operate in partnership with local authorities and local Energy Efficiency Advice Centres (EEACs). A report for Consumer Focus Scotland<sup>21</sup> identified a number of factors that can help make area based schemes successful which included :

- Delivering the scheme through an impartial organisation
- Drawing in funding from all available sources
- Giving a central role to local authorities
- A direct mailing which is endorsed by the local authority
- Linking in with the services offered by local organisations
- Intensive marketing which is tailored to the local context
- A streamlined assessment and installation process
- Well-trained and experienced assessors able to inspect properties

Therefore components of effective local delivery could include :

- A one-stop shop, to assist householders in the process of technology choice, Green Deal finance, grant applications, planning permission, installation, use and maintenance.

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<sup>21</sup> Review of area-based energy efficiency initiatives in Scotland. Report to Consumer Focus Scotland. CAG Consultants, March 2010.

- Private sector and community enterprise suppliers who offer services tailored to customer requirements – for example, some customers may need their lofts cleared and items put back before and after loft insulation and be willing to pay extra for this rather than have to do it themselves. Customers opting for solid wall insulation may equally want the installer to do the whole job (including re-decoration etc) rather than have to find different people themselves.
- Microgeneration installers could also offer insulation – or arrange for someone else to do it to make it easier for the customer.
- Group purchase schemes to reduce the costs of measures per household – e.g. if several houses on a street do solar thermal or solar PV at the same time .
- Making it not just about individual action but getting whole communities to take action – encouraging people to be part of the action. This links to the idea of show homes where people can see what other local residents have done.
- Community scale solutions might work better in some cases than those on individual homes as they could take risk away from individuals.

### **8.1.4 Who should provide the local advice and delivery ?**

There is likely to be considerable merit in having different delivery mechanisms for local advice and delivery in different areas, depending upon local circumstances. The main options are as in Table 1 below.

A common requirement will be resources to fund the co-ordination of local advice and delivery. Whilst community groups can be very good at motivating volunteers, they work best (and their effort is sustained) when they have enough resources to pay for co-ordination of activities. To date funding has been provided largely through pilot initiatives (e.g. Big Green Challenge) or short term grants. If we are to see mass mobilisation of local action then funding sources will need to be more substantial and lasting with clarity about where groups can apply for funds. Options might include funding via the Big Society Bank or the Green Investment Bank.

**Table 1 : Engagement and delivery – co-ordination and funding options**

	<b>Personalised advice</b>	<b>Local exemplars</b>	<b>Delivery of measures and finance packages</b>
<b>Who should co-ordinate/ deliver ?</b>	Accredited advisors – could be private or third sector	- Area delivery bodies - Local authorities -Community organisations/residents groups	-Area delivery bodies -Local authorities -Energy suppliers -Partnerships- e.g. LA/energy supplier/community organisations / residents groups
<b>Who should pay ?</b>	Consumers – scope for refund on cost of measures installed ? Scope for community and residents groups to bulk buy advice to cut costs ?	Likely to need only limited funding – Big Society Bank; Green Investment Bank ; local authorities; energy suppliers	Big Society Bank; Green Investment Bank; local authorities; energy suppliers

## **8.2 Accreditation and information**

### **8.2.1 Databases**

It is not straightforward at present to get useful data on appliance energy consumption, energy and water saving measures, microgeneration, low carbon vehicles etc. Whilst there is general information available on a number of web sites, robust data (based on large trials or actual jobs) on costs and benefits and performance standards is not readily available. The EST has been involved in some trials and thus has some real world data, but there is clearly scope for much more of this to be provided. Information on real costs – not estimates or averages which is the basis of most cost information at present - is also needed. For some measures (notably solid wall insulation and many renewable technologies) this lack of data stems also from the fact that there have been very few actual market based installations (as opposed to subsidised trials or one-off special cases). There is therefore a need to start building up a number of databases :

- trials and performance
- completed jobs
- trusted installers
- appliance energy use

Information on the suggested content of these databases is given in Appendix 3.

### **8.2.2 Accreditation and standard setting**

At present there are a number of systems of accreditation, certification and consumer codes in the energy efficiency and microgeneration sectors as outlined earlier in the paper. It is welcome that, as part of the Green Deal, it is proposed that Government accreditation and standard setting will be stepped up to ensure consumers have confidence in the process. However, there are some concerns about how changes to the Office of Fair Trading (which at present oversees some schemes) may affect the status of some consumer

protection schemes. Many of the existing systems of standard setting and accreditation are effective and the Green Deal initiative should build on these to enhance their usefulness to consumers in the following ways :

- clarity over what the various accreditation schemes are, their status (i.e. that they meet appropriate standards, such as compliance with standards set by the OFT) what they cover and don't cover
- ensuring accreditation schemes use effective methods to ensure compliance – auditing, mystery shopping etc (this may need additional resources)
- better promotion of the schemes so that consumers know how to check whether advisors, installers and sales people are members of appropriate schemes – this is important also to ensure that reputable installers, advisors etc know that it is worth being members of these schemes
- easy access for consumers to the accreditation schemes – a one stop shop for such information
- a clear system of accreditation and standard setting for advisors

**Table 2 : Information and accreditation – co-ordination and funding options**

	<b>Accreditation and standard setting</b>	<b>Trials and performance database</b>	<b>Completed jobs database</b>	<b>Trusted and recommended installers</b>	<b>Appliance energy use &amp; cost information</b>
<b>Who should co-ordinate/deliver ?</b>	<p><b>Accreditation schemes</b> - Existing accreditation bodies and new entrants working to Govt set stds</p> <p><b>Accreditation one stop shop info for consumers</b> – EST, Which? or similar trusted source (alongside other databases)</p>	EST, Which? or similar trusted source	EST, Which? or similar trusted source	<p>This is about customer experience (not minimum quality guarantees which would be based on membership of accreditation schemes)</p> <p>Could be left to the market to develop at national (e.g., Tripadvisor) or local level.</p>	<p>EST, Which ? Energy suppliers Comparison web sites</p> <p>Could be left to the market to develop using a recognised metric set by Govt (or EST)</p>
<b>Who should pay ?</b>	<p><b>Accreditation schemes</b> – mainly industry funded but possibly some Govt funding to ensure adequate policing</p> <p><b>Accreditation one-stop shop for consumers</b> – Govt should fund</p>	Mixture of Government and industry funding – but needs a substantial Govt funding element to ensure independence and give credibility	Mixture of Government and industry funding – but needs a substantial Govt funding element to ensure independence and give credibility	Leave to the market – advertising is a likely source as with other such databases in other sectors	Leave to the market

### **8.2.3 Who should manage these central information sources ?**

There are a number of options for collecting and managing such data – Tables 1 and 2 provide more information. The Energy Saving Trust could expand its role to take this on, for example. Or it may be that Which?, an organisation highly trusted by consumers as a source of information, might be able to do so. Or it may be that a new organisation is required. The key requirement however is that an appropriate organisation is properly resourced to take on these tasks. This should form part of the development of the Green Deal initiative.

Agreement on a simple appliance consumption measure that could be widely used would enable consumers to make more informed choices. There would be a role for Government or a Government agency to specify the measure (e.g. kwh) but the private sector (e.g. energy suppliers, price comparison web sites) could then use this measure to provide the detailed information on the costs of using different appliances on different tariffs.

### **8.3 How should all this support be funded ?**

With cuts in local authority budgets and pressure on local advice and community organisations funding local advice and delivery will be challenging. For the centralised services funding for existing schemes is mainly from membership fees paid by companies to those who run the schemes. But this leaves many schemes underfunded to undertake the vital tasks of developing good practice and policing (e.g. audits, mystery shopping, non compliance and disciplinary procedures). The Energy Saving Trust currently receives substantial funding from DECC but this is being reduced. There is a need for clarity over funding for these activities which will be essential underpinning for the Green Deal. Some activities may be viable through non-subsidised private sector action; others may be suitable for the involvement of significant input of voluntary action by local organisations. But for other activities, central or local Government funding will be required to provide stability and independence from vested interests and thus to ensure consumer confidence. In some cases there will scope for joint Government and private sector funding. Tables 1 and 2 provide more information.

## **Conclusions**

Effective support for local delivery plus central information and standard setting would enhance consumer confidence and hence should lead to greater willingness to take action. Better informed consumers would drive better standards amongst suppliers and installers and help to create a bigger market for quality installers and suppliers. This should also mean that over time less subsidy would be required for energy saving measures because there would be more of a market.

Achieving the UK's carbon reduction targets will require mass action by all sectors, including households. The measures proposed in this paper are aimed at tackling some of barriers to energy saving by households. However, it is quite possible that, even with a good nationwide system of local advice and delivery, backed up by good central information and accreditation, the majority or a substantial minority of households still will not install measures or change their behaviour to reduce their carbon emissions. In that case further options might have to be considered to drive take-up.

## **Appendix 1**

### **Surveys of householders' reasons for installing or rejecting energy saving and renewable energy measures**

Two reports by Caird and Roy present the results of a project which surveyed UK householders' reasons for installing - or considering but rejecting – four energy efficiency measures (loft insulation, condensing boilers, heating controls, CFLs and LEDs.) and a number of renewable energy measures (solar thermal, solar PV, wind turbines and wood burning stoves).<sup>22</sup> The surveys also examined the experiences of those householders who had installed any of these measures, asked them to respond to ideas suggested by energy experts and to suggest their own improvements.

The data were gathered during 2006 via an online questionnaire linked to the websites of the Energy Saving Trust (EST) and a BBC/OU television series on climate change. The 400 responses were supplemented : in the case of the energy efficiency measures, with over eighty telephone interviews with the clients of two Energy Efficiency Advice Centres (EEACs); in the case of the renewable energy measures, by twenty eight telephone interviews with householders seeking information from a scheme called 'Energy for Good', managed by the National Energy Foundation (NEF). The respondents to the online questionnaire were self-selected and not unexpectedly were 'greener' and from higher socioeconomic groups than the general UK population. The EEAC clients were also largely middle class but their reasons for adopting energy efficiency measures were more financially and less environmentally driven than the online respondents and included a higher proportion of retired people. Some of the key findings were :

#### **Loft insulation**

Higher levels of loft insulation will be above the level of the joists and thus, to retain use of the loft for storage, requires either expensive work by a professional to raise the joists and lay boarding or the consumer being willing and able to do this job themselves.

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<sup>22</sup> Consumer adoption and use of household energy efficiency products Sally Caird and Robin Roy. Open University, December 2007. Consumer adoption and use of household renewable energy technologies. Sally Caird and Robin Roy. Open University, December 2007 [http://design.open.ac.uk/research/research\\_dig.htm](http://design.open.ac.uk/research/research_dig.htm)

- The most frequently cited deterrents to loft insulation were loss of storage space (37% of non-adopters) and/or trouble clearing the loft (33% of non-adopters).
- 76% of the energy efficiency professionals surveyed also recognised loss of storage space as a significant barrier to higher levels of loft insulation.
- 31% of non-adopters would have installed loft insulation given a better post-insulation storage system..10% of the adopters complained about the loss of storage space and this had led some to remove insulation or compress it under boarding which would reduce the energy savings.
- 60% of households said the main benefit of loft insulation was a warmer house, while about a third said they also had lower fuel bills.

### Heating controls

- Householders decided not to install new heating controls – central heating programmers and/or thermostatic radiator valves (TRVs) - because they were regarded as too much trouble to install (47% TRVs and 17% programmers) and/or the fuel savings were not worth the cost (20% TRV and 26% programmers).
- Most adopters of programmers (71%) and TRVs (58%) find them fairly easy or easy to use. But a few (11%), find electronic programmers with tiny buttons and LCD displays difficult to see and understand. A few mentioned difficulties using TRVs that need to be set on each radiator by trial and error. Such problems may mean that programmers and TRVs may never be used; 29% of interviewees turned their heating on and off using the room thermostat. . This is an issue well recognised by the energy efficiency professional, 68% of whom felt that heating controls were difficult for some consumers to understand and operate.
- Some consumers think it is more efficient to switch water and space heating on and off manually or using a programmer, whereas others (about 30% of interviewed users) leave their heating on constantly and use their thermostat and/or TRVs to achieve desired comfort levels.
- A third of those installing programmers and TRVs noticed reduced fuel bills, but a third noted a warmer house and up to 13% admitted they took the main benefit in additional heating or hot water, suggesting some rebound effects not allowed for in official estimates of energy saving from extra heating controls.

### **Renewable energy measures**

- A majority (80%) of the sample of 'green' householders who considered installing a renewable energy system decided not to go ahead. The key barrier for solar thermal water heating, solar PV and micro-wind turbines is cost.
- Other deterrents to solar thermal were that likely fuel savings were not considered worth the investment (36%), and payback may exceed system life (24%) or even the life expectancy of the owner.
- Non-cost issues were difficulties finding a reputable installer (25%) and uncertainty of the technology's performance and reliability (23%).

Caird and Roy concluded that : "Policies and actions need to go beyond addressing the financial barriers to adoption, which were less important than other barriers for less costly measures such as insulation and lighting. Available subsidies, grants and special offers played a surprisingly small role in encouraging these householders to install energy efficiency measures."

## **Appendix 2**

### **Community and area based delivery of energy efficiency**

There have been many area based delivery schemes for energy efficiency in recent years. Some key examples are as follows.

#### **Warm Zones**

Warm Zones is an area-based programme to deliver energy efficiency improvements to all households in an area plus income maximisation services to fuel poor households. Warm Zones is part of National Energy Action (NEA) and was set up with initial funding from DEFRA and some of the major energy suppliers. There are Warm Zones in 14 cities or counties in England and Scotland. Key features of the Warm Zones approach are:

- The systematic assessment of households in an area to establish energy efficiency standards, income levels and eligibility for grants
- Co-ordinated delivery of energy efficiency and related services
- Integrating different sources of funding

#### **The Community Energy Saving Programme (CESP)**

CESP is an obligation on energy suppliers and generators to deliver energy efficiency measures to the most deprived areas in Great Britain. The schemes developed under CESP involve a 'whole-house' approach, incorporating loft insulation, solid and cavity wall insulation, glazing, replacement boilers and some renewable energy measures such as solar thermal and heat pumps. Most of the schemes have a main focus on social housing but just under half also work in the private sector. Beyond 2012, the government may roll out such an approach much more widely.

#### **Energy for Good**

Energy For Good was a programme that the National Energy Foundation ran in partnership with a number of Local Authorities to help people to install renewable technologies. Each scheme ran for two years and was tailored to the requirements of the local authority and the funding available. NEF provided a telephone advice line for householders, a 'vetting' procedure to create a list of registered installers and a surveying system to provide suitable advice to each enquirer. For example, surveyors told people if their homes were too

shaded to make photovoltaics a good option, or not windy enough for a turbine. For those consumers where a measure did make sense, Energy for Good told them how much it was likely to cost, sent them more information, found a couple of installers to provide quotes and finally followed up to make sure that they were happy with the work.

### **The Big Green Challenge**

The Big Green Challenge was funded by DECC to stimulate and support community-led responses to climate change. From 355 initial applicants (in early 2008) ten communities were chosen to put their ideas for reducing CO2 emissions in their communities into practice over the course of a year. Three winners and one runner up received a share of the £1 million prize fund in February 2010.

## **Appendix 3**

### **Databases to assist consumers make decisions on energy saving**

#### **Completed jobs database**

These data would be based on actual jobs completed in consumers' homes. The data should be anonymised (unless households are willing to be identified) and could be broken down into two types: basic information which could be provided on jobs soon after completion; full information which might be collected from a smaller number of jobs and would need to be built up over time. The full information would however be important for consumers to be able to judge the benefits as well as the costs of measures. The full information would also be very useful to government in assessing the impacts of financial support schemes. The information collected should include :

Basic information :

- type of property – flat or house; age; detached/semi or terrace; solid or cavity wall; size; location (name of town or rural area),
- what was installed and when
- what the measures cost (full costs including any consequential costs such as redecorating – costs could be broken down to identify different costs)

Full information:

- as above plus :
- who lives in the property (number of occupants), whether occupied in the day-time on week days
- size of energy bills before the measures were installed (for one year) and what they have been since (for one year)
- information on impacts on water bills where appropriate
- any particular issues that have arisen

#### **Trials and performance data base**

This would include information on substantial independent trials and independently verified performance of measures such as renewable heat and electricity technologies, electric vehicles etc. widely disseminated results The data base should include details of :

- technology
- numbers involved
- length of trial
- types of consumers
- outcomes of trial – costs and benefits

### **Appliance energy usage**

Details of the energy consumption and costs of running different forms of heating and household appliances. It would be useful to include comparisons of older and newer (more energy efficient) appliances where appropriate.

Metering and information. The provision of more information in the home will help to increase consumer awareness of actions that they can take. The in-home displays being provided with smart meters are one way of doing this for energy use. Similar displays might be provided for water use linked to water meters.

### **Trusted installer database**

A further useful addition would be an installer rating database – like “Trip Advisor” or “Rated People” or “Check a trade” (latter two cover builders, electricians, plumbers etc) but for companies who sell and/or install energy saving measures, microgeneration etc. The “Check a trade” site could be a useful model. For each company covered it includes centrally compiled information on installers (accreditations, insurance, company registration information) plus ratings from consumers for whom they have actually done work. Listing accreditations would be particularly useful for those companies who have more than one accreditation (e.g. those who install insulation and microgeneration). Other information could include details of installers who are willing to offer a complete service (e.g. removing and replacing items in lofts; raising joists etc) for those who want it. The database could help to build consumer confidence in installers who can be trusted to do a quality job at a fair price.