Public Understanding of Sustainable Energy Consumption in the Home

A research report completed for the Department for Environment, Food and Rural Affairs by Brook Lyndhurst.

November 2007

BROOKLYNDHURST

defra
Department for Environment
Food and Rural Affairs

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Final Report to the Department for Environment Food and Rural Affairs

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Written by:
Brook Lyndhurst Ltd.
London House,
271-273 King Street,
London, W6 9LZ.
www.brooklyndhurst.co.uk
Tel: 020 8233 2972
Email: contact@brooklyndhurst.co.uk

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Glossary

Defra	Department for Environment, Food and Rural Affairs
Micro-generation	The production of heat and/or electricity on a small scale, i.e. for homes or small commercial premises from a low carbon source
Renewables	Energy that flows naturally and continuously (such as those from the wind, waves or tide). These sources are essentially inexhaustible and electricity generated from them emit lower levels of carbon dioxide than fossil fuels.

Executive Summary

Introduction

Energy consumption in the home was recognised in the Sustainable Consumption Roundtable's (SCR) report "I will if you will" as one of five key areas of behaviour that has the greatest and potentially most negative impact on the environment (alongside food, leisure, finance & investments and transport)[1].

The period since the early 1970s – when energy prices last prompted concerted effort to restrict consumption – have seen, on the supply side, the rise and peak of North Sea oil and gas, the near-total deregulation of the energy market and, more recently, the emergence of renewable energy technologies, significant geo-political shifts in the distribution of energy supply, and – it would seem - the rehabilitation of nuclear. On the demand side, consumption has risen remorselessly, driven by ever-falling prices and ever-increasing numbers of electricity-dependent household goods (the demand for which, in turn, has been a function of steadily rising living standards, falling prices and "lifestyles"). Indeed, since 1990, domestic energy consumption has increased by 18% (and by 30% since 1970)[2].

In short, powerful forces have contrived over a prolonged period of time to ensure that typical householders in Britain in the early twenty first century do not merely expect limitless cheap energy to support their lifestyles – many barely give the matter a thought. This "carbon-dependent" consumer world has been the subject of sustained criticism from a minority of voices for many years, but it is only in the recent past that mainstream political opinion has acknowledged that there may be a problem associated with national energy habits (rather than the problem merely being how to support such habits). Whilst the Renewables Obligation and the commitments made in the 2002 Energy White Paper began the process, it is policy developments in the past couple of years that seem to represent a break with the past, notably the Stern Review, the latest IPCC review as well as the recent Carbon Emissions Reduction Target (CERT) 2008-2011.

Aims and methodology

In February 2007, Brook Lyndhurst was commissioned by Defra to conduct qualitative research into public understanding of sustainable energy consumption in the home. The aim of the research was to unpack current consumer attitudes towards energy, for example: Do they accept the need to consume energy sustainably? Does energy register in their purchasing decisions? What do they assume a 'good' energy appliance to be? What do they expect government to be doing? How do these differ according to varying demographics?

Particular emphasis was placed upon five possible behaviour change goals, as defined through Defra's previous research with Green Alliance[3]: 1) buying/installing energy efficient products/appliances; 2) better energy management and usage in the home; 3) installing insulation products; 4) installing domestic micro-generation; and 5) switching to a green energy tariff.

The project was divided into four main qualitative research phases:

- A brief, concise literature review on consumer energy habits;

- 12 focus groups of 8-10 people (114 people in total). Suburban residents across a mix of housing types were recruited in four distinct geographical locations according to Defra's 'environmental segmentation model' (this is described in more detail below);

- Energy audits and in-home advice (24 people). Two people from each group participated in 'action research' and underwent an energy audit of their home with a specialist energy consultant; and

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[1] Sustainable Consumption Roundtable (2006). *I will if you will. Towards sustainable consumption*.
[2] DTI (2006). *Energy – its impact on the environment and society*.
[3] Defra (2006). *An Environmental Behaviours Strategy for Defra: Scoping Report*.

- Depth interviews with audit participants (23 people). Each participant was asked to consider the advice over the course of one week and discuss the barriers and motivations behind implementing what they had learnt through an in-depth interview.

Defra's 'environmental segmentation model'

Previous Defra research[4] segmented the population into seven major groups according to their environmental values and pro-environmental behaviours, namely: Greens; Consumers with a Conscience; Wastage Focused; Currently Constrained; Basic Contributors; Long-Term Restricted; and Disinterested. The Brook Lyndhurst research focused on the first six of these, and has confirmed that these groups do appear to exist in the general population[5].

Differences in attitudes towards energy are not as pronounced for each segment as was expected, although the groups definitely demonstrated a hierarchy of pro-environmental behaviour (starting with the Greens and gradually reducing to the Long-Term Restricted).

The research process

The research process highlighted the positive impact focus groups and audits can have on people's attitudes to energy consumption; people are much more likely to engage in a process (and change their behaviour) if this is done in a trusted group setting with their peers (more often than not, individuals act on the personal recommendations of friends, family and acquaintances).

Group settings allowed participants the opportunity to debunk myths, complain about common gripes and discuss the merits of pro-environmental behaviour (with 'like-minded' people) without being intimidated. Both the focus groups and audits showed that people could be dissuaded from negative opinions on issues like energy saving light bulbs and cavity wall insulation by participating in this process.

Moreover, the process worked so well because the groups were local and tailored individually to their own needs and homes (through the audits). This chimes with current thinking (such as the recent IPPR report on energy[6] or the Climate Group's "We're in this Together" campaign) that energy audits can have a dramatic impact upon public behaviour.

The current 'state of play'

It was expected that recent shifts in public awareness of environmental issues (in part due to the proliferation of media coverage) would have resulted in profound changes in the public's understanding and acceptance of climate change/global warming.

On the one hand, consciousness of climate change issues among research participants did indeed appear high. On the other, however, our research suggests there is a very significant disconnect between this change in attitudes and any changes in behaviour. The well-known "attitude-behaviour" gap seems particularly acute in the case of energy – we hypothesise that this is related to the deeply embedded nature of energy within modern lifestyles – and this poses a particular challenge for policy.

The participants exhibited the following characteristics from our research:

- <u>They are confused and sceptical about environmental issues</u>, in particular: 1) whether climate change is actually man-made or part of a naturally occurring cycle; 2) whether individuals in the UK can really have an impact on a global problem; and 3) whether the government is using the green debate as a ploy to raise taxes.

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[4] COI and Defra (2006). *Environmental Segmentation: Qualitative Research.* COI Ref: 277544
[5] More explanation regarding the differences in these groups is provided throughout the report – the 'disinterested' group were not used as a segment in this research.
[6] Retallack, S, Lawrence, T and Lockwood, M (2007). Positive Energy: Harnessing People Power to Prevent Climate Change

- <u>They are unwilling to 'take on' climate change</u>, partly due to a perceived lack of effort by the government as well as others in the public eye. In the focus groups, there were signs of a public backlash against climate change (even amongst the **Greens**).

- <u>They are highly cost-conscious</u> (this is the strongest behavioural driver for most people – many do not consider energy or environmental issues);

- <u>They are distrustful of government, local authorities and big business in general</u> and in particular of their motives in helping the public to change their behaviour to 'save the planet'. They believe the motivations to be more likely political and economic - to reduce dependency on fossil fuels or increase taxes;

- <u>They do not think that 'being green is normal'</u> (particularly if 'being green' is owning your own wind turbine and signing up to a green energy tariff). Being 'green' is still perceived as a niche activity (except unsurprisingly by some of the 'greens'); and

- <u>They are sceptical about the use of taxation to change behaviour</u>, preferring incentives rather than taxes (although if green taxes are used the consensus was that they should be safeguarded solely for green issues). Grant schemes appear to be the most positive incentives for encouraging measures to reduce energy consumption (by all segments).

Moreover, participants did not recognise the links between their lifestyle, energy consumption and the environment, exemplified by the following issues:

- They were mostly unaware of how much energy they used on a daily basis (and how much energy different appliances consume) and mostly took unlimited access to it for granted;

- Few participants thought about energy issues that often (with the possible exception of some of the **Greens**) and consequently, did not know from which sources UK energy is derived;

- Many participants didn't tend to know how much they spend on energy on a monthly basis (**Wastage Focused** and **Long-Term Restricted** were a notable exception);

- They tended to assume all modern appliances were 'good' (consuming low amounts of energy), e.g. plasma screen televisions;

- Some aspired to own high-energy consuming appliances in addition to simply owning *more* appliances (many which other groups take for granted such as washing machines or dishwashers);

- Energy consumption rarely featured on a purchase decision list (environmental and social factors are seldom taken into account)

- Very few people were prepared to pay more for anything 'green'; and

- Cost was by far the biggest driver for reducing energy consumption (although participants tended to only consider initial outlay costs rather than longer term 'whole-life' costs, e.g. 'how much is this washing machine today?' rather than 'how much will this washing machine cost to run for the next few years?').

The five behavioural goals

The research findings advocate (as indeed do others) that a mixture of regulation *and* individual behaviour change is best placed (and indeed necessary) to reduce domestic energy consumption.

All five goals were considered in terms of their ability to reduce domestic energy consumption (and therefore carbon emissions) against the potential cost of doing so. This 'bangs per buck' criterion was then considered against the public responses identified throughout the research. To this end, the findings suggest that Defra would be best placed to prioritise the goals in the following order:

<u>Priority 1 (joint) – better energy management and usage in the home</u>.

- This goal is one of the most effective in reducing energy consumption in the home, is relatively inexpensive and was highly accessible to the majority of participants. (For example, **Wastage Focused** and **Long-Term Restricted** participants already appear to be doing this for cost reasons and **Greens** for environmental).

- People responded well when receiving this information in informal, intimate settings in a group dynamic which allowed them to explore issues, debunk myths and participate socially. To this end, this goal would be least well served through mass advertising.

Priority 1 (joint) – install insulation products.

- Although this goal involves installing relatively expensive insulation measures, it is the most effective one at reducing carbon emissions and therefore very cost-effective (in terms of 'bangs per buck').

- After thirty years of grant schemes, most (if not all) participants were familiar with insulation products and had undertaken several measures themselves with favourable outcomes.

- To this end, it was the most accessible goal for participants, the only drawback being the need for long-term investment as well as doubts about the payback period. (The **Currently Constrained** and **Long-Term Restricted** are unable to personally effect change of this nature because they live in homes managed by landlords).

Priority 3 – buy/install energy efficient products/appliances.

- The energy ratings scheme was universally considered a good concept; it was the only means participants had to identify an energy efficient product (**Basic Contributors, Long-Term Restricted** and **Currently Constrained** were least likely to recognise the scheme).

- In the past decade, regulation has been highly effective in increasing the market share of A-rated appliances through the energy ratings scheme. Moreover, there was an expectation that manufacturers should only be providing 'good' energy efficient appliances (providing this does not result in mass 'choice editing' where they are keen to retain some choice over the types of products they purchase).

Priority 4 – install domestic micro-generation.

- Most participants were very open to the idea of micro-generation in principle. **Greens, Consumers with Conscience** and **Currently Constrained** were most keen but **Basic Contributors** and **Long-Term Restricted** were 'passively willing' (i.e. supportive but someone else would have to install it for them).

- However, it still remains an intangible concept for the majority of participants, i.e. they were unaware of different types of micro-generation, where to go to install it, how much it costs, payback periods and who to trust for reliable information.

- The initial cost and the long payback period was the single biggest obstacle (particularly for **Wastage Focused** individuals who feel they are less likely to recoup the costs).

- Information on the technology and available grants was perceived to be the single most important driver.

- However, the 'bangs per buck' were not so advantageous for this goal (as opposed to insulation) where participants still have a long way to go before they accept micro-generation as the 'norm' (many people associate it with wide open countryside, the coast or southern Europe)[7].

- Moreover, many had a fear of the unknown with regard to new technologies and often unfounded fears regarding negative aesthetic, noise and wildlife impacts.

- Three suggested areas of action were identified across the board as acceptable uses of micro-generation to the public. Moreover, it was suggested that these were necessary pre-requisites before they would even consider domestic micro-generation themselves (i.e. these three things would act as demonstration projects and increase familiarity), namely: a) Community micro-generation schemes (run by independent bodies not local authorities); b) Installation of micro-generation into all new builds; and c) Use of micro-generation in government and local authority buildings.

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[7] The situation does not appear to have changed much since Brook Lyndhurst's recommendations for London Renewables in 2003. This advocated an evolutionary approach to encourage 'take up' of micro-generation where there was much goodwill but low demand.

Priority 5 (if at all) – switch to a green energy tariff.

- This was the least favourite goal – mirroring by the slow take up in the wider population.

- Very few people had heard of GETs nor did the vast majority understand how they work. Some participants were supportive of the concept (although **Basic Contributors** and **Long-Term Restricted** are less likely to see the value).

- Most participants did not think it was their responsibility to source GETs (except *some* **Greens**) and most participants were unwilling to pay more for it.

- Moreover, there was some distrust behind the concept and many people were unwilling to change energy tariffs due to the perceived hassle.

Possible interventions

- Smart meters may help to reduce energy consumption in UK homes by 3-15%[8] and many participants were keen to have them in their own homes to increase the visibility of possible cost and energy savings. Some thought they may be an intrusion and may not facilitate behaviour change after the novelty wears off. Most are unwilling to pay for the meter themselves nor their installation.

- Differential tariffs can help to reduce the energy curve as well as carbon emissions and may possibly make people more aware of energy in the process (if combined with smart meters they can reduce costs even further). Most participants thought these were a good idea – due to cost savings rather than environmental concerns (**Wastage Focused** and **Long-Term Restricted** in particular) - although few have heard of them. **Basic Contributors** were less keen on the idea as they thought it incompatible with their lifestyle and appeared more unwilling to make changes (some individuals are distrustful of whether or not these tariffs would actually be cheaper).

- Energy performance certificates were not well received (except by **Currently Constrained** and **Greens**). It was seen as an infringement of civil liberties and it was resented because of the cost implications and the mandatory element.

- Personal carbon allowances (PCA) were the least popular intervention across the entire sample because of its perceived threat to civil liberties, the perception that it would be impossible to administrate, police and operate such a scheme and that it will negatively impact upon the disadvantaged.

Conclusions

It is clear that it has taken thirty years of subsidised insulation programmes across the country, for the public to become familiar with - and receptive to - the idea of insulation. Even then, the public do not associate insulation with energy consumption, 60% of homes with cavities in the UK still need cavity wall insulation[9] and some people still feel unfamiliar with the technological 'know how' involved. With this in mind, it would have been highly unlikely that the bulk of the British public would be installing photo voltaic cells on their own roofs or switching to green energy tariffs anytime soon. It appears that the day when solar panels become the 'norm' and are accepted into British daily life is some way away.

The reality is that there is no 'silver bullet'. The most effective policies to combat global warming already exist (in terms of insulation etc) and this research merely advocates a continuation of some of these historical initiatives, albeit at a far more rapid rate than ever before. (Figure 1 – below - details the key recommendations from the research). It may not be the most interesting answer to climate change, but it will certainly be the most effective.

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[8] Green Alliance (2007)
[9] DTI (2006). *Energy – its impact on the environment and society.*

	Figure 1: Recommendations from key report findings *Source: Brook Lyndhurst*
1	To avoid confusion and gain trust, any national and local climate change/global warming/environmental messages must be transmitted with the same information, and if possible supported by independent organisations. There *still* appears to be a need for more information acknowledging the existence of climate change/global warming with a positive tone.
2	The government (as well as local authorities) must dramatically alter the perception commonly held by members of the public in regard to their perceived indifference to environmental issues: • Regular feedback should be provided by government/councils on positive environmental decisions and outcomes; and • Politicians/ key figures must 'walk the walk' as well as 'talk the talk', e.g. turning building lights off at night, installing micro-generation on their own buildings first etc.
3	Lower taxes on pro-environmental behaviour and products, e.g. reduce VAT on energy saving light bulbs.
4	Ring-fence green taxes for green issues (which will help the public to trust that the government is not using the green debate as a means of raising revenue but in order to 'save the planet').
5	Wherever possible, grants should be used to encourage measures to reduce energy consumption, e.g. for installing insulation or micro-generation. In all cases, these must be advertised widely and clearly (by energy suppliers).
6	Use existing community groups and social networks to introduce the idea of sustainable energy consumption (as per focus group), e.g. energy 'Eco-Teams'.
7	Increase availability of grant schemes for insulation measures. In areas where local residents are more sceptical of local authorities' motives behind becoming involved in such a scheme, ensure that grants are perceived to be independent of all local authority involvement.
8	Priority must be placed on homeowners and private landlords (rather than social housing landlords).
9	Implement legislation to expand the existing labeling scheme to include other electrical appliances, e.g. computers, televisions.
10	To highlight (at point of sale) the average running costs for each product (as part of the labeling scheme) over the course of one year.
11	Tackle poor perceptions of energy saving light bulbs through focus groups and audits.
12	Information must be much more specific. The public want evidence on the effectiveness of current technologies, where to access grants (and eligibility) and most importantly, information on cost-specific savings resulting from more sustainable energy consumption measures.
13	Signpost the public to information on both general and specific queries on domestic micro-generation (ideally an independent body).
14	Implement community micro-generation schemes.
15	Install micro-generation on all new builds (as much as possible) as well as government and local authority buildings (to act as demonstration projects before domestic micro-generation is likely to be fully trusted).
16	Do not market GETs to consumers but focus efforts on supplying green energy through energy companies and the Renewables Obligation Commitment (ROC).
17	Dependent upon the findings from the current trials, explore the installation of smart meters in UK homes.
18	Advertise differential tariffs more widely focusing on potential cost savings, lack of 'hassle' in changing providers and reasons they are cheaper (so the public is not led to believe there is 'a catch').
19	Manage any potential hostility to HIPs (and EPCs) by emphasising the positive elements and ensuring a smooth transition.
20	The public did not appear ready for PCAs at the current time. Further research is needed to explore the concerns raised in this research (a major education/public engagement/consultation would be necessary before PCAs could feasibly be introduced).

1 Introduction

1.1 In February 2007, Brook Lyndhurst was commissioned by Defra to conduct qualitative research into public understanding of sustainable energy consumption in the home. This report discusses the outcomes of this research drawing together important conclusions and offering recommendations for the future.

Background

1.2 Energy consumption in the home was recognised in the Sustainable Consumption Roundtable's (SCR) report "I will if you will" as one of five key areas of behaviour that has the greatest and potentially most negative impact on the environment (alongside food, leisure, finance & investments and transport)[10]. Indeed, since 1990, domestic energy consumption has increased by 18% (and by 30% since 1970)[11] and out of four main household behaviour changes that would drastically reduce carbon reductions, three are related to domestic energy consumption:

"If the [average household] did four major things, they would be able to reduce their carbon footprint by nearly a third… changing to a hybrid car, installing cavity wall insulation, fitting a wind turbine and solar panels (David Miliband, 2006).

1.3 Energy consumption remains complicated and it is clear that public awareness and the debate around energy efficiency is not very advanced. This is particularly true in regard to renewable energy; consumers are confused when it comes to new technologies (which few feel they understand) or in assessing the costs/savings (which are poorly defined). Moreover, this is compounded by the difficulty in understanding different technologies where for instance solar water heating is relatively straightforward in comparison to photo voltaic cells.

1.4 To meet this challenge it is essential for Defra to rely on a robust evidence base to support its policymakers by collecting and understanding evidence on how consumers view this important area of their lives.

Objectives

1.5 The aims of the research were therefore, seven-fold:

- To unpack current consumer attitudes towards energy and understanding of the concept of sustainable energy consumption;

- To understand consumer aspirations with specific relationship to both appliances and other energy use/consumption behaviours in the home (including current assumptions of what is a 'good' energy appliance);

- To understand consumers' acceptance of the need, and ability, to consume energy in sustainable ways (what could they do; what would they be willing to do; what are the motivators/barriers?);

- To understand consumer expectations of the role for government, retailers and producers in facilitating and encouraging sustainable energy use and introducing energy efficient appliances;

- To identify possible differences in understanding, assumptions, aspirations and expectations according to varying demographics;

- To identify trusted advisors to help householders to make their homes more energy efficient and the type of information that might influence their purchasing decisions (i.e. are they prepared to incorporate environmental and social factors?); and

- To explore the potential impact that new information (and different ways of presenting new

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[10] Sustainable Consumption Roundtable (2006). *I will if you will. Towards sustainable consumption*
[11] DTI (2006). *Energy – its impact on the environment and society.*

information) on environmental and social effects would have on consumers.

1.6   Whilst these objectives will address domestic energy issues as a whole, particular emphasis will be placed upon issues relating to Defra's five possible behaviour goals (as defined through their previous work contributing to the development of a Pro-Environmental Behaviour Framework [12]):

- Buying/installing energy efficient products/appliances;
- Better energy management and usage in the home;
- Installing insulation products;
- Installing domestic micro-generation; and
- Switching to a green energy tariff.

Overview of the Report Structure

1.7   This report proceeds as follows:

- Overview of the methodology used to conduct the research (2);
- Current energy and behaviour change policy context (3);
- Current 'state of play' regarding public attitudes to energy and environment (4);
- Responses to the five behavioural goals (5);
- Possible interventions and roles (6); and
- Conclusions and recommendations (7).

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[12] Defra (2006). *An Environmental Behaviours Strategy for Defra: Scoping Report.*

2   Methodology

2.1   The project was divided into four main qualitative research phases:

- A brief, concise literature review on consumer energy habits;

- 12 focus groups of 8-10 people (114 people in total);

- Energy audits and in-home advice (24 people); and

- Depth interviews with audit participants (23 people).

Concise literature review on consumer habits

2.2   Brook Lyndhurst undertook a brief, concise literature review of the existing evidence base on consumer attitudes to energy (the documents reviewed are listed in *References*). Findings from this review fed into the design of the focus groups and depth interview topic guides and are referred to throughout the report.

Focus groups

2.3   Twelve focus groups were conducted between 12th March and 4th April 2007. The groups lasted for approximately 2.5 hours involving 8-10 participants; each person was paid £50 as a 'thank you' for attending.

2.4   Previous Defra work[13] developed an 'environmental segmentation model' which divided the UK population into seven segments relating to their environmental values and extent of pro-environmental behaviour. It was hoped that this project would be able to test *six* of these seven segments. The full recruitment specification used by Brook Lyndhurst is provided in Annex A and a brief outline of the segmentation model is provided below (figure 2).

2.5   The seventh segment – 'disinterested' (those displaying no interest or motivation to change current behaviours and make their lifestyle more pro-environmental) – were deliberately screened out[14].

2.6   Recruitment of these individuals was undertaken by Viewpoint Field under instruction from Brook Lyndhurst. Participants were recruited according to a recruitment questionnaire agreed between Brook Lyndhurst and Defra (Annex B).

2.7   This segmentation approach is innovative and previously untested. It is clear that the recruitment process proved successful in providing the right number of individuals for each group with the corresponding outlook and attitudes – participants, by and large, fitted into each of their intended population segments. Findings relating to using the segmentation approach and each of these population segments in detail are reported throughout the report.

2.8   In addition to segment type, focus group participants were recruited along the following lines and for the following reasons:

- Whilst there is little variation on the amount of energy consumed regionally[15], focus groups <u>were held in four distinct geographical locations</u> to take into account potential differences in *attitudes*. To this end, three groups were each held in each of the south-east (Dorking), the south-west (Exeter), the North (Halifax) and the Midlands (Lichfield);

- Recruitment focused <u>on suburban residents</u>, which typically have higher carbon emissions (where understanding the motivations behind energy consumption choices may provide 'quicker wins' for Defra);

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[13] COI and Defra (2006). *Environmental Segmentation: Qualitative Research*.
[14] People in this segment will be the focus of future Defra engagement as a secondary target.
[15] The average weekly household expenditure on energy ranges from £11.80 in the North East to £12.90 in the East (ONS, 2007).

- Each focus group was <u>consistent with the general UK population at large in terms of ethnicity and gender</u>; and

- Participants were recruited across <u>a mix of housing types</u> (as people are likely to be constrained in their behaviour by the type of housing they live in). This will allow the views of social housing renters (possibly 'fuel poor'[16]) to be represented along with homeowners in terraced or detached housing.

Figure 2: Brief outline of segmentation model used for recruiting participants
Source: Defra

Segment	Description
Greens	Driven by belief that environmental issues are critical, well-educated on green issues, positively connected to arguments, don't see environmentally friendly people as eccentric.
Consumers with a Conscience	Want to be *seen* to be green, motivated by environmental concern and seeking to avoid guilt about environmental damage. Focused on consumption/ making positive choices.
Wastage Focused	Driven by a desire to avoid waste of any kind, good knowledge about wastage/local pollution, although lack awareness of other behaviours. See themselves as ethically separated from greens.
Currently Constrained	Want to be green; they just don't think there is much they can do in their current circumstances. Focus on balance, pragmatism and realism.
Basic Contributors	Sceptical about the need for behaviour change, tend to think about their behaviour relative to that of others and are driven by a desire to conform to social norms. Low knowledge of environmental issues/ behaviours.
Long-term Restricted	Have a number of serious life priorities to address before they can begin to consciously consider their impact on the environment. Everyday behaviours are often low impact for reasons other than environmental.

2.9 A topic guide was used to structure the discussions, designed by Brook Lyndhurst. The session was divided into two distinct parts; the first focusing on the current 'state of play' such as attitudes, behaviours and responses to current energy trends; the second focusing on the 5 behavioural goals and options for policy interventions. The guide is provided in Annex C.

Follow-up energy audits and in-home advice

2.10 It is well documented that focus groups, whilst providing a good understanding of public opinion, are not always representative of 'real-life' actions, e.g. people who are thoroughly supportive of installing insulation or renewables in a focus group may be constrained back in their homes by a variety of factors that it is impossible to 'un-pick' in a group setting, e.g. cost, family objections, time, knowledge etc.

2.11 For this reason, two participants from each group were asked to participate in 'action research' and undergo an energy audit of their home with a specialist energy consultant (organised through subcontractors SE^2). Each auditor spent a couple of hours with each household discussing current energy consumption and possible energy efficiency measures.

2.12 To this end, 24 people underwent energy audits approximately one week after the focus groups (between 19th March and 9th April, 2007). Each was provided with a (manually generated) report detailing the issues discussed during the audits and the potential energy savings as a result.

Follow-up interviews with audit participants

2.13 Each audit participant was asked to consider the tailored advice over the course of one week (with telephone support provided by our subcontractors SE^2 to answer any follow up questions they may have had).

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[16] The accepted definition is 'individuals who spend more than 10% of their income on energy costs'

2.14   At the end of this week, each person participated in a depth interview with Brook Lyndhurst (conducted between 26th March and 16th April, 2007). The aim was to understand the barriers and motivations behind implementing what they have learnt and their views on each behavioural goal in turn (in terms of ease, cost etc). The depth interview topic guide is listed in Annex D.

2.15   Only one person dropped out of the process, although 'drop outs' were limited by offering a further £80 payable upon completion of the depth interviews.

Research limitations

2.16   This research suits a qualitative approach where the scope is too broad and the issues too complex for a quantitative survey. Qualitative research is designed to be illustrative not statistically representative (providing insights into attitudes rather than factual evidence from a robust sample of people). Therefore, these results report on the *perceptions* of small groups of carefully selected individuals and the small sample sizes require that reporting is based on *observations* rather than firm conclusions.

2.17   There is always a risk during focus groups that some respondents will influence others, resulting in a 'group dynamic' that is not actually a fair representation of the views of those attending. This was overcome as much as possible by ensuring successful segmentation (restricting each group to 'like-minded' people) and by taking clear control of each group.

2.18   Verbatim comments from the participants are documented throughout the report. Whilst these are unlikely to represent the majority view in all cases, quotes have only been used where they were repeated and/or supported by a number of other people.

2.19   This research was conducted immediately after the airing (on March 9th 2007) of a Channel Four documentary, 'The Great Global Warming Swindle' which presented climate change as hyperbole[17]. It posited that global warming was not a man-made phenomenon but caused by naturally occurring fluctuations in solar activity (over which humans have little control).   It was clear that this film had influenced many of our participants. This was overcome (as much as possible) by allowing time for group debates after all the evidence had been offered (including material *supporting* the evidence for man-made global warming, such as 'An Inconvenient Truth').

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[17] More information can be found at www.channel4.com/science/microsites/G/great_global_warming_swindle

3 Policy context

3.1 In the context of this research project, there are three reasons warranting a brief review of the broad public, political and policy context:

- Firstly, current attitudes necessarily have their origin in the evolution of attitudes over a period of time, and cannot fully be understood without an appreciation of that evolution;

- Secondly, the recent explosion of interest in, and concentration upon, climate change issues means that attitudes (and, potentially, behaviours) are in a (potentially opportune) state of flux; and

- Thirdly, the policy implications arising from this (and, indeed, related) research occur within a particular milieu that has been taken on board by the Brook Lyndhurst research team in formulating our recommendations.

3.2 Looking back over the past few decades, a broad pattern can be discerned, in which energy policy and consumer behaviour with respect to energy can be seen as interlocking parts of the general movement away from state-planning of the economy towards laissez-faire, market oriented solutions. Phenomena such as the promise of limitless free nuclear power in the 1950s, the Central Electricity Generating Board in the 1960s and the oil-crisis and electricity supply problems of the 1970s seem like the relics of a lost time.

3.3 The period since the early 1970s – when energy prices last prompted concerted effort to restrict consumption – have seen, on the supply side, the rise and peak of North Sea oil and gas, the near-total deregulation of the energy market and, more recently, the emergence of renewable energy technologies, significant geo-political shifts in the distribution of energy supply, and – it would seem - the rehabilitation of nuclear. On the demand side, consumption has risen remorselessly, driven by ever-falling prices and ever-increasing numbers of electricity-dependent household goods (the demand for which, in turn, has been a function of steadily rising living standards, falling prices and "lifestyles").

3.4 In short, powerful forces have contrived over a prolonged period of time to ensure that typical householders in Britain in the early twenty first century do not merely expect limitless cheap energy to support their lifestyles – many barely give the matter a thought[18].

3.5 This "carbon-dependent" consumer world has been the subject of sustained criticism from a minority of voices for many years, but it is only in the recent past that mainstream political opinion has acknowledged that there may be a problem associated with national energy habits (rather than the problem merely being how to support such habits). Whilst the Renewables Obligation and the commitments made in the 2002 Energy White Paper began the process, it is policy developments in the past couple of years that seem to represent a break with the past. Key items that have contributed include:

- the latest IPCC review;
- the Stern Review;
- the Climate Change Bill;
- the Carbon Emissions Reduction Target (CERT) 2008-2011;
- the Low Carbon Building Programme;
- the Code for Sustainable Homes;
- Budget '07 announcements including exemption from stamp duty for zero carbon homes;
- the Energy White Paper; and
- The London Climate Change Action Plan.

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[18] Further research would be needed to provide a statistical expression of this remark (itself based on qualitative research and the judgements of the Brook Lyndhurst research team).

(The last of these has initiated a programme of subsidised insulation available to all householders in London – a programme outshone only by Kirklees Council, which has embarked on a programme to provide free insulation to all its homeowners[19].)

3.6   It is not the place of this research to present full detail of the many targets and ambitions associated with the various policies and proposals: rather, it is to highlight that, whilst policy may have leapt ahead in many respects, it is doing so in a slightly curious environment. On the one hand, consciousness of climate change issues among the general public has risen sharply, and even though much confusion (and some cynicism) remains, an expectation that action is required seems reasonably well developed.

3.7   On the other hand, as much of our research suggests, there is a very significant disconnect between this change in attitudes and any changes in behaviour. The well-documented "attitude-behaviour" gap seems particularly acute in the case of energy – we hypothesise that this is related to the deeply embedded nature of energy within modern lifestyles – and this poses a particular challenge for policy.

3.8   It certainly positions "behaviour change" as a pre-eminent mechanism for addressing a large proportion, if not all, of the challenge; but it is not clear, and further work would be required to achieve such clarification, to what extent price and/or supply side changes can be expected to contribute to macro changes in consumer behaviour in the next few years.

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[19] Green Futures, May/June 2007

4   The current 'state of play'

Summary
Public attitudes (and participant responses) to environmental and energy issues. Participants appeared confused and sceptical about environmental issues, in particular: 1) whether climate change is actually man-made or part of a naturally occurring cycle; 2) whether individuals in the UK can really have an impact on a global problem; and 3) whether the government is using the green debate as a ploy to raise taxes.
Making the links between lifestyle and energy consumption. Participants lacked awareness of how much energy they use and how much it costs (few people frequently think about energy issues).
Is behaviour changing? Consciousness of climate change issues has risen sharply but this is not translating into more sustainable energy behaviours in the home, partly because of the hassle, partly because participants perceived this as 'missing out' or 'cutting back'.
Cost as a major driver. Participants were highly cost-conscious (this is the strongest behavioural driver for most people – many do not consider energy or environmental issues);
Differences by segment. This work has confirmed that six of the groups identified in Defra's 'environmental segmentation model' do appear to exist in the general population. Differences in attitudes towards energy were not as pronounced for each segment as was expected, although the groups definitely demonstrated a hierarchy of pro-environmental behaviour (starting with the **Greens** and gradually reducing to the **Long-Term Restricted**).
Offering encouragement. The research showed that people are much more likely to engage in a process (and change their behaviour) if this is done in a trusted group setting (tailored locally to their own needs and homes) with their peers.

4.1   This section discusses current public attitudes to energy and the environment (taken from existing research in addition to these findings) and evaluates if participants are making the links between energy consumption and their own lifestyle. It examines whether there has been a shift in people's behaviour (as a result of increased awareness) and the reported major drivers behind more sustainable energy consumption in the home. Finally, it explores the differences between each population segment type and how the research process itself has highlighted potential methods for offering encouragement and support for public behaviour change in the area of energy.

Public attitudes (and participant responses) to environmental & energy issues

4.2   Research shows that in the past twenty years, the public's awareness of environmental and energy issues has undoubtedly increased, but never more so than in the past year or two. Energy prices have risen substantially (to the point where they may actually be sending a financial signal to households), consumer devices such as the energy efficiency label have become mainstream and B&Q and Curry's now sell kits for domestic micro-generation. Al Gore's "An Inconvenient Truth" complements meteorological disaster fiction in the "The Day After Tomorrow", each of the political parties are seemingly lining up to install wind turbines on Number 10, while The Sun offers its readers the chance to 'Go Green with Keely'.

4.3   In tandem, the public has been encouraged to pursue more sustainable behaviours, for example through the proliferation of kerbside recycling services or national advertising campaigns such as those to 'save your 20%'[20] and 'Act on CO_2'[21]. Previous research demonstrates that nearly three quarters of people report a growing pressure to change the way they live to reduce the impact of climate change[22].

4.4   However, despite the media frenzy and increased access to services and information, it is well documented that the public is confused and/or sceptical about the current environmental debate[23].

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[20] Energy Saving Trust Campaign to 'Save your 20%' – see www.energysavingtrust.org.uk
[21] A joint Defra/DfT campaign – see www.dft.gov.uk/ActOnCO2
[22] Energy Saving Trust (2007) Green Barometer: Measuring Environmental Attitude. April 2007.
[23] See Rogers, S (2007). *Climate Change: Why we don't believe it.* The New Statesman as one such example.

4.5   These findings were supported by this focus groups research.   Indeed, all participants mentioned the environment (unprompted) when first discussing energy issues, demonstrating an awareness of the current debate, even if they were unsupportive.

4.6   Moreover, it was clear from the research findings that many participants were unable to distinguish terms such as the ozone layer, greenhouse gases and carbon emissions from the perceived 'science babble'. Whilst only a small minority openly doubted that global warming is happening, people's understanding of climate change has not increased with awareness[24]. Across the entire sample there was a great deal of scepticism over 3 main issues[25], (even amongst the **Greens**, the most environmentally conscious group) namely whether:

- Climate change is caused by human activity rather than a result of naturally occurring cycles. People's perceptions are constantly being challenged by conflicting opinions from different bodies, scientists and television programmes. Many participants cited the ideological gulf between 'An Inconvenient Truth' and the recent 'Great Global Warming Swindle' as difficult to reconcile in their heads, unsure of which to trust as a result (the issue of trust is discussed further in section 6):

"I think there is a problem, but I don't believe we are being fed the correct information",
(Green, Female, Dorking)

"*How much of a reality it is, is difficult to determine*",
(Basic Contributor, Male, Exeter)

- Individual actions by Britons can't really make a difference. All groups cited the global nature of climate change as an obstacle to increased involvement. It was perceived that a lack of effort on the part of other countries such as China, India and the USA detracts from their own individual efforts. Regular comments were made in all groups about the fact that "we're such a small country" and "how can I make a difference?"

"China produces god knows how many tonnes of CO_2. We could stop producing CO_2 and it wouldn't make a jots worth of difference to the world",
(Consumer with Conscience, Female, Dorking)

- The current green debate is just a ploy by government to raise the tax burden or win votes. Again, this was an issue in all the focus groups:

"*I believe the government is into making money out of it*"
(Consumer with Conscience, Female, Halifax)

"It's like they have got this huge worry list and now this is at the top along with disease, war and taxes", (Basic Contributor, Female, Exeter).

Making the links between lifestyle and energy consumption

4.7   The public's detachment from the current environmental debate is compounded by the fact that many do not make the links between their own lifestyles, energy consumption and the environment. According to a recent survey, Britons are the worst energy wasters in Europe with 71% admitting they leave electrical appliances on standby.[26]

4.8   Undoubtedly, energy is still a low salience issue for many participants[27] illustrated in the focus groups by the following three points:

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[24] Department of Trade and Industry (2006). *Energy – its impact on the environment and society*. DTI, London.
[25] This agrees with recent research by Haq, G et al (2007) Greening The Greys: Climate Change and the Over 50s. Stockholm Environment Institute, University of York.
[26] Randerson, J and Adam, D (2006) *Energy-wasting Britons rank top for failing to see the light*.
[27] This was reported in research conducted by Brook Lyndhurst in 2003 on *Attitudes to renewable energy in London: public and stakeholder opinion and the scope for progress.*

- A large amount of people (possibly as high as 37% of the UK population[28]) are <u>unaware of how much energy they use on a daily basis</u>. Most participants claimed they did not often think about the energy they use in the home. This does not appear to have changed since 2003, when only 10% of London residents thought about it 'a great deal' and close to half (46%) thought about it 'a fair amount'. A significant proportion (18%) 'never' thought about it[29];

- Many participants <u>didn't know how much they spend on electricity or gas</u> at home (a recent survey placed this figure at 47% of Britons[30]) but are aware of the cost of driving or mobile phones. This can be due to one of two reasons: first, many energy bills are estimates (rather than a reflection of accurate usage) which makes it difficult to determine how much is actually spent; and second, people who pay their energy bills by direct debit tend to be less aware of the cost of their energy bills (as the money is automatically transferred from accounts); and

- Participants <u>tended not to think about where energy comes from or how it is replenished</u>. Many, regardless of segment, were unclear about from where UK energy is derived (e.g. what percentage comes from North Sea gas etc). Those that are less engaged in the environmental debate (**Basic Contributors, Long-term Restricted**) tended to believe oil reserves are larger than the estimated 40 years[31]:

"You take it for granted (energy). It's there and you get really humpy when it damn well isn't working",
(Wastage Focused, Female, Dorking).

Is behaviour changing?

4.9 It is apparent, therefore, that whilst there is increased awareness of environmental and energy issues in general, this has not translated into more sustainable energy behaviours in the home. Indeed, despite feeling growing pressure to change their behaviour, a recent poll indicates that 40% of the population are doing nothing.[32] Research has long discussed this 'value-action' gap, where individuals understand and support changes but are unwilling/ unable to make them in real life. It is true therefore, that "even among those who know about climate change, there is a yawning gap between what people say and what they do".[33]

4.10 This detachment from environmental issues is evident in a recent survey - whilst 70% of people believe that action needs to be taken to address global warming, only 13% of the same people listed the environment as one of the three most important issues facing the UK at present[34] (i.e. it is only important when it doesn't impact on other issues such as crime, health and education).

4.11 Moreover, many people simply don't want to do anything if it will cause them extra work or hassle. (It may be the case that scepticism over climate change /global warming offers individuals an excuse not to act and allows them to continue unchanged in their current lifestyles). A recent ICM survey found that half the UK population are very clear about their unwillingness to do anymore than they are already[35].

4.12 This corresponds with the perception amongst many participants that more sustainable energy behaviours in the home and increased environmental responsibility are equal to 'missing out' or 'cutting back':

"*The trouble is everyone has been used to the good life and we have all got to cut back a little*", (Consumer with Conscience, Female, Dorking)

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[28] Logica CMG (no date). *Energy efficiency and the consumer – a European survey.* White Paper.
[29] Brook Lyndhurst (2003) ibid.
[30] Ibid.
[31] The World Energy Council thinks that we can supply oil at the current rate for 40 more years. After that we could use gas, but only at current levels for a further 15 years.
[32] Energy Saving Trust (2007). *Green Barometer. Measuring environmental attitude.*
[33] Rogers, S (2007). *Climate Change: Why we don't believe it.* The New Statesman.
[34] Curry, TE et al (2005). *A Survey of Public Attitudes towards Energy & Environment in Great Britain.*
[35] Ibid.

4.13   This was more pronounced in the **Basic Contributors**, **Long-term Restricted** and **Wastage Focused** groups who felt they had been forced into taking up recycling behaviours and are less keen to do more. In contrast, **Greens, Consumer with Conscience** and **Currently Constrained** were much more willing to acknowledge the need to make an individual effort to tackle climate change, with comments such as 'it's everyone's problem' commonplace.

Cost as a major driver

4.14   Rising energy costs have undoubtedly made a difference to people's energy attitudes and behaviours.   (This research may well have resulted in very different findings two years ago, prior to the increased awareness of energy resulting from the sharp increase in energy bills and current price wars).   This research agrees with the view that 'money continues to be the single strongest driver and a continued steep rise in energy prices would have the biggest impact on actual behaviour'[36] - in a recent survey only 15% of respondents cite environmental concerns as a reason to cut energy consumption[37].

4.15   This was borne out though the focus groups and energy audits. Cost was by far the biggest factor to drive energy consumption figures regardless of segment. For the **Wastage Focused** and **Long-Term Restricted**, this emphasis on cost appears higher, in part because of income considerations. However, it is also true of **Greens** (where – in both groups - cost was cited before environmental considerations as a reason for saving energy) and **Consumers with Conscience**:

> *"They (*energy saving measures*) are all valid things to do but I think people do it because it saves them money, not because they think they are being extra green and friendly to the environment. Because it hits you in the pocket",*
> (Consumer with Conscience, Female, Dorking)

4.16   Members of the **Wastage Focused** groups seemed far less willing (than other groups) to tackle energy issues when these are promoted as environmental (rather than cost/efficiency savings). In acknowledgement of their status as part of the 'baby boomer generation', they also appeared to be aware that they have had a detrimental impact on the environment, which they believe is now the responsibility of the younger generation to rectify:

> *"In respect of our generation you could actually at best say we are amoral, because we didn't know until the last ten years what sort of problems we were causing… however, the younger generation, anybody in their thirties and below cannot say that, so if they continue they will be immoral",*
> (Wastage Focused, Male, Dorking)

Differences by segment

4.17   The research has shown that these groups, (identified by Defra's environmental segmentation model) by and large, do exist. It has been possible to segment members of the public according to their environmental beliefs and behaviours and their proclivities to behave more sustainably in the home.

4.18   Interestingly, differences in energy attitudes are not as pronounced for each segment of the population as might have been expected (and which may likely be the case for an issue such as food or transport where attitudes and behaviours tend to be far more diverse).

4.19   On the whole, there was a hierarchy of pro-environmental behaviour and knowledge. **Greens** were at the top, followed by **Consumers with Conscience/Wastage Focused** (who were mostly on equal footing for different reasons – the former driven only slightly more by environmental considerations, the latter more by cost). **Basic Contributors** and **Long-Term Restricted** were at the bottom as predicted (with a couple of exceptions). **Currently Constrained** individuals fell into two camps where half seemed likely to become Greens or

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[36] Logica CMG (no date). *Energy efficiency and the consumer – a European survey*. White Paper.
[37] Department of Trade and Industry (2006). *Energy – its impact on the environment and society*.

Consumers with Conscience in the future, the other will likely become Basic Contributors[38]. Figure 3 summarises these findings (although attention should be given to the small sample sizes – these results can provide an indication of each group rather than firm conclusions).

4.20   There were porous boundaries between the groups, e.g. some Consumers with Conscience portrayed Green characteristics and vice versa, but only to the magnitude of one group; Long-Term Restricted may demonstrate behaviours of the Basic Contributors at times, but never the Greens or Consumers with Conscience.

4.21   There were noticeable geographical differences in attitudes observed between the focus groups in the Midlands and the North and those in the South.   Whilst sample sizes are too small to make conclusions, individuals in Halifax and Lichfield were far more sceptical generally but particularly of the environmental debate.

4.22   This research is unable to determine how large each segment is (in terms of population size) nor where to find them (or more importantly, how to target them cost-effectively) – this is outside the remit of this project. It might be fair to say, however, that assumptions can be made based upon the recruitment process and attitudes discovered in the focus groups, e.g. whilst the Greens did fall into this category, many were not as 'dark green' as supposed, suggesting that a category of 'uber greens' may exist that this research was unable to locate.

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[38] Currently Constrained individuals were the most transient segment. Further research may be useful to determine how Defra might predict which group they will evolve into in the future – Basic Contributors or Greens/Consumers with a Conscience.

Figure 3: Summary of characteristics of different segments
Source: Brook Lyndhurst

Segment	Description based upon Defra's previous research	Age	SEG	Housing type	Behavioural characteristics reported from groups	Representative quotes from groups	Proclivity for 'green' behaviour
Greens	Driven by belief that environmental issues are critical, well-educated on green issues, positively connected to arguments, don't see environmentally friendly people as eccentric.	30+	BC1	Home-owners	Most not as 'dark green' as expected (suggesting this group is very small) so still some way to go. Hungry for information. Environment a strong driver but cost is too.	"We have to be careful of greenhouse gases" / "Sometimes the environment can be hammered down your throat"	
Consumers with a Conscience	Want to be *seen* to be green, motivated by environmental concern and seeking to avoid guilt about environmental damage. Focused on consumption/ making positive choices.	Mixed	BC1	Home-owners	Most not as conscientious as expected – more driven by cost factors but still environmentally motivated. Most thought they were all quite conscientious and knowledgeable.	"The most important thing is, can I eat and do I have a roof over my head. Until you satisfy those basic needs, you aren't going to get people saving the planet"	
Wastage Focused	Driven by a desire to avoid waste of any kind, good knowledge about wastage/local pollution, although lack awareness of other behaviours. See themselves as ethically separated from greens.	50+	C1/ C2	Home-owners	Very cost driven. Not very environmentally motivated. Split into two camps – those that were very frugal with strong financial motivations to save energy[39] and those that are baby boomers driven by cost but high resource users, e.g. second homeowners. Set in their ways.	"You've got to think of saving energy, otherwise your bills just run away with you" / "I didn't even look if it was environmentally friendly. I don't give a damn, as long as my washing's done"	
Currently Constrained	Want to be green; they just don't think there is much they can do in their current circumstances. Focus on balance, pragmatism and realism.	Under 30	ABC1	Private renters or live with parents/ shared accom-odation	Split into two camps – those that are apathetic and sceptical (likely to become Basic Contributors?) and those that are keen and knowledgeable (likely to become Greens?) Were very constrained at present so seemed quite detached from some elements of the environmental debate. Cost driven.	"I would like to think that I will use energy efficient light bulbs or things like that, but it will probably be convenience or how cheap things are" / "Energy efficiency was something I looked at, but also from a cost point of view"	
Basic Contributors	Sceptical about the need for behaviour change, tend to think about their behaviour relative to that of others and are driven by a desire to conform to social norms. Low knowledge of environmental issues/ behaviours.	Mixed	C1/ C2	Home-owners	Least knowledgeable group on energy and environment. Cost driven. However, once advised of issues, were disposed to do more (maybe the delivery of messages may be more important for this group)	"I think it is a good thing (doing your bit) but it has a low priority in my life" / "I will make some adjustments, but I won't let it ride over my life to the point where it presses down on my life"	
Long-term Restricted	Have a number of serious life priorities to address before they can begin to consciously consider their impact on the environment. Everyday behaviours are often low impact for reasons other than environmental.	Mixed	C2DE	Renters/ social housing	Not very environmentally aware. Very cost driven (many knew exactly how much they spend on energy on weekly basis). Keen to reduce energy consumption to reduce bills. Quite constrained.	"At the end of the day it comes down to that, money, money, money" / "We don't use much lights, We sit in the dark to watch TV"	

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[39] Brook Lyndhurst's work for Hampshire County Council called 'Small Change, Big Difference' for Defra Waste R&D.

Offering encouragement

4.23   The research process highlighted an effective method for engaging with members of the public and encouraging more sustainable lifestyles. The point of this action research (the energy audits and follow-up interviews) was to understand motivations beyond the slightly abstract nature of a focus group. However, in this instance it has been successful not only in providing research findings, but <u>also in actually effecting change in the project participants in the process</u>.

4.24   Participants who went through the entire process reported attitudinal and behavioural changes for the following reasons:

- <u>The opportunity to discuss energy issues with an unknown peer group proved incredibly beneficial</u> – people were able to trade energy 'tips' (e.g. 'don't leave power chargers on standby'), dispel rumours and urban myths (such as 'it is inefficient to keep turning lights on and off rather than leaving them on') and simply feel normal in sharing common gripes (mostly about local recycling services) and chatting to new people socially (with the feeling that they 'are in it together'):

> *"I learnt a lot and enjoyed it because: a) it was informative; and b) you get in a rut and forget the big world's going on... it's given me a lift 'cause I was down",*
> (Long-Term Restricted, Female, Lichfield)

- <u>Having a trusted energy advisor in their own home (at no financial cost to themselves) changed their views and encouraged attitudinal shifts</u>. For example, there were common misconceptions about energy saving light bulbs ('they take ages to get bright') or cavity wall insulation ('it damages the house') which energy advisors were able to correct and even demonstrate in-home (most brought free energy saving light bulbs with them):

> *"He gave us low energy bulbs. I didn't think much of them before but now I'm really impressed",*
> (Basic Contributor, Female, Exeter).

   This is in accordance with current research that supported, in-home energy audits will be highly effective in obtaining information from 'hard to reach' consumers.[40] This is due to a number of reasons, namely:

   o   Verbal energy saving advice is far more effective than written;

   o   Consumers express a strong dislike for any concept which compares their energy use with average, other homes like theirs or other homes in their neighbourhood;

   o   Individuals are more likely to respond to energy saving advice if they are able to decide their own advice needs, in their own home, with advice tailored specific to their house with their own energy bills (this is even more true for the more disadvantaged);

   o   Energy consumers who could be persuaded to take action demonstrated a high resistance to being 'sold to' on the doorstep or being nagged, preferring a more gentle 'personable' approach;

   o   Advice which is given on a 'whole house' approach is more effective than providing information say, on specific energy-saving products. It has been demonstrated that an individual's entire concept of energy can change if they consider combined savings (of lighting, cooking, heating etc) rather than the individual (just lighting); and

   o   People need a serious amount of 'hand holding' to even think about energy issues, particularly micro-generation where the language and terms are often alien to the average consumer.

- <u>Having the opportunity to think about everything they had learnt and reporting this to a third party consolidated their knowledge and reinforced new attitudes and behaviours</u>.

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[40] Collated from a collection of research reports including SCR (2006), New Perspectives (2004), Centre for Sustainable Energy (2004) and Environment Change Institute (no date).

Many participants from the depth interviews stated that the whole process has been 'a real eye opener';

- <u>Participants trusted the process because it was guided by an independent, third party (Brook Lyndhurst)</u>. The three-stage process was managed (by telephone) by the same people (who they met at the focus group) which increased the element of trust. In turn, they felt they were able to trust the energy advisors[41]. This supports current behaviour change theory advocating that regular contact with the same participants (in a group setting) with the same message can effect successful behaviour change (rather than one-off events with individuals for instance).

4.25   <u>Very few audit participants claimed not to have changed their behaviour as a result of the audit and many reported a change in their opinions on energy</u> – though less so in the case of environmental attitudes. To some, the process has been empowering, letting them take control of their actions in a way that is realistic and tangible:

"It has been great because you can read the report and then walk downstairs and do what they recommend. It's easy", (Green, Male, Dorking).

"Everyone always thinks they are energy conscious, but I realise now that we could do a lot more, so it has made a little bit of difference. I don't think we'll slip back either", (Wastage Focused, Male, Dorking)

4.26   Moreover, a few reported that their <u>involvement in the entire process has resulted in knock-on effects to other environmentally friendly behaviours</u>, such as sustainable transport options, recycling or food:

"It has had an impact on my transport choices – I don't get in my car as much as I used to" (Currently Constrained, Female, Exeter)

"Recently, since the focus groups and audit, I've thought more about how I'm using energy. The more I recycle, the more it can be used towards creating more energy", (Long-Term Restricted, Female, Exeter)

4.27   Additionally, many reported that they have <u>begun to tell other people about pro-environmental behaviour and options that they have learnt</u>:

"I went from not having a clue about anything, now I'm telling my boyfriend off for leaving the telly on standby", (Long-Term Restricted, Female, Lichfield)

"My husband is in the office maintenance business and he's going to try and get his customers to change to more environmentally friendly measures as a result of the audit", (Consumer with Conscience, Female, Dorking).

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[41] This element of trust was witnessed throughout the focus groups where participants frequently looked to the moderators for guidance on which opinions were right, who to trust for reliable information, advice on how they could change behaviour etc. In all cases, there was a belief that the moderator was trustworthy which was supported in the depth interviews, where participants frequently stated that they 'learnt a lot from the focus groups and audits'. There was never any question that the information Brook Lyndhurst provided should be checked or quantified in any way.

5   The five behavioural goals

Summary
<u>Buying/installing energy efficient products/appliances</u>. Participants were often unable to determine which products were more energy efficient (since they generally assume that government and industry had eliminated 'bad' products) and had an unfavourable impression of energy saving light bulbs (although these impressions could be modified through peer group participation). Energy was not generally considered when making purchasing decisions (cost is the biggest driver) except by some **Greens**, although the energy ratings scheme was seen as highly favourable (even if underused by some groups – notably **Basic Contributors** and **Long-Term Restricted**) – so much so that participants thought it should be extended to other types of electrical appliances, e.g. computers.
<u>Better energy management and usage in the home</u>. This goal was highly accessible to participants, some of whom are already practicing sustainable energy management (**Greens** for environmental reasons and **Wastage Focused** and **Long-Term Restricted** for cost reasons).
<u>Installing insulation products.</u> This was by far the most accessible goal for all participants (partly because many had taken advantage of previous grant schemes with favourable outcomes). The main drawback was the perceived long-term investment required which could be overcome with grants (The **Currently Constrained** and **Long-Term Restricted** were supportive but hindered by personal circumstances).
<u>Installing domestic micro-generation</u>. Participants were generally unfamiliar with this as a concept: they were unaware of the different types; where to go for information on them; they associate it with warmer climates and the countryside; and they are not aware of grant schemes. However, many were responsive to the idea (especially **Greens** and **Consumers with Conscience**), particular if they feel it becomes more 'normal', i.e. if they are able to see demonstrations on public buildings and new homes and if it becomes more financially viable. **Basic Contributors** and **Long-Term Restricted** are 'passively willing' (keen but need someone else to install it for them) but **Wastage Focused** think the payback periods are too long for their remaining lifetime.
<u>Switching to a green energy tariff</u>. This was universally disparaged as an idea (except by some **Greens**) where participants did not understand the concept, were unwilling to pay more and saw it as primarily the responsibility of the government and energy companies to source green energy.

5.1   This section examines participant responses to each of Defra's five behavioural goals:

- Buying/installing energy efficient products/appliances;
- Better energy management and usage in the home;
- Installing insulation products;
- Installing domestic micro-generation; and
- Switching to a green energy tariff.

It provides a brief overview of each of these goals as well as results from the findings (as well as other research) both in general and by population segment.

Buying/installing energy efficient products/appliances

5.2   Lights and appliances currently account for 23% of household energy use[42]; the use of energy efficient versions of these products is therefore essential to reduce domestic carbon emissions. This section discusses two issues in relation to this: a) participant awareness of the energy consumption of different types of appliances; and, b) their awareness of energy efficient alternatives.

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[42] Boardman, B et al (2005). *40% House.* Environmental Change Institute, University of Oxford

a) Participant awareness of energy consumption of different appliances/products

5.3   On the whole participants were unaware of the energy consumption of different appliances/products (exemplifying the fact that they don't make the links between their own lifestyle and energy consumption), namely:

- Participants were often unable to determine which products use the most energy in their homes (although this is less true of **Greens** who tended to be more knowledgeable). Participants generally appeared resigned to the fact that 'everything in life uses energy' and were shocked (across the board) to discover in one of the focus group exercises that light bulbs consume the most amount of electricity in an average three-bedroom home:

  "Well, I am surprised because they are seasonal and you don't have them on every day",
  (Consumer with Conscience, Female, Dorking);

- It was generally *assumed by all* groups that newer, modern products are more energy efficient (which may not be the case). Many people were surprised to learn that plasma screen televisions are high energy consuming products for example. Consumers repeatedly stated that they expect government and business to be eliminating the least environmentally friendly products:

  "*I got my plasma TV recently but I was under the impression that it would be a lot more energy efficient than the old one*", (Green, Male, Halifax)

  "*You would think that considering today's 21st century society, that they can make a TV that doesn't use so much energy*", (Consumer with Conscience, Female, Halifax)

- Participants often aspired to own *more* or *higher* energy-consuming appliances (such as plasma screen televisions). Most of the participants did not aspire to own air conditioning units (with a few exceptions) but there was a desire amongst the **Long-Term Restricted** and **Basic Contributors** to own many of the appliances which **Greens** and **Consumers with a Conscience** took for granted (such as dishwashers, tumble dryers and washing machines).

b) Public awareness of energy efficient alternatives

Energy Saving Light Bulbs:

5.4   All participants were aware of energy saving light bulbs and these were often 'front of mind' when discussing energy issues and energy consumption in the home – even if they are not being used. This is partly due to lower prices and people receiving them in 'trial packs' (indeed, their usage overall has increased rapidly in past few years).

5.5   The general impression of these products was unfavourable, with the common gripe that they take a long time to light up:

  "It just pisses me off that you turn the light on and nothing goes on for ten minutes",
  (Consumer with Conscience, Female, Dorking)

  *"We've got them (*energy saving light bulbs*) but they're not very good"*,
  (Wastage Focused, Male, Dorking)

5.6   Many were unaware of a new generation of (much improved) energy saving light bulbs, often relying on the poor recommendations of friends and family to deter them from purchasing some themselves. Moreover, some of the **Basic Contributors** and **Long-Term Restricted** have been deterred by reports that they do not last as long as claimed (particularly in the media) and that they were cost prohibitive for people on low incomes:

  "*Who can afford to pay £9 a bulb in their house*?",
  (Long-Term Restricted, Female, Lichfield)

5.7 <u>Interestingly, the research process was able to convince people of their merits</u>. It only took one person with a favourable impression (and story) of energy saving light bulbs to convince an entire focus group of the benefits (people often rely more on the recommendations of people they have met than the media for instance). Furthermore, the audit provided a good opportunity to demonstrate the new versions of bulbs convincingly, and many people reported they were now successfully using them in their homes (where they had been sceptical before):

"I'll try the energy saving light bulbs again. I didn't like them before but I'm going to give them another go", (Consumer with Conscience, Female, Dorking)

<u>Boilers:</u>

5.8 Previous research indicates that more effective models and management of boilers can lead to large energy savings in the home particularly where one quarter of the UK's boilers are over 20 years old[43] and many individuals do not know how they can run their boiler more efficiently, e.g. through the use of timers etc[44].

5.9 However, across the sample, participants were generally unaware of the type of boiler they owned/used or how to make it more effective, e.g. insulation.

<u>Energy ratings:</u>

5.10 In the past few years, the market penetration of energy efficient A-rated products has been steadily increasing in the UK although it is far behind the rest of Europe and has not been as widespread as had been hoped[45]. Moreover it has been subject to debate as to its effectiveness in reducing carbon emissions for the following reasons:

- Energy ratings are based upon 'relative' not 'absolute' energy use where efficiency is measured in terms of energy used per litre of space cooled; size is not taken into consideration. Thus a large A-rated appliance may use more energy than a small B-rated one, but the larger one appears more energy efficient[46]. This encourages manufacturers to build larger models not smaller;

- Two new categories (A+ and A++) have been introduced without recalibrating the energy label. This has effectively undermined the effectiveness of the labeling system as there are now three categories that appear to be 'good'[47];

- Manufacturers are not producing appliances below a D-Rating anymore (to encourage sales and avoid poor public relations), but the rating still runs to G (implying that there are more energy inefficient products than the one being considered);

- EU energy ratings do not fit with international standards, so there is a discrepancy between A-ratings in the US and the UK for example;

- Many retailers decide independently on the rating classification to give to appliances, leading to marked differences from shop to shop, region to region;

- Ratings are based upon *expected* rather than *actual* use (this is important as the efficiency of a fridge greatly varies according to the owner, e.g. how full it is or what temperature it is kept at);

- Ratings are based upon energy figures on the day of sale and dramatically decrease in efficiency throughout its life (which is not considered); and

- Where labelling has been effective, it is unclear if this is due to energy efficiency information or whether the A rated labels confer an impression of a higher product

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[43] Department of Trade and Industry (2006). *Energy – its impact on the environment and society*.
[44] See research on the use of timers by National Energy Action amongst others
[45] HM Treasury, Carbon Trust, Defra and Energy Saving Trust (2005). *Energy Efficiency Innovation Review: Summary Report.*
[46] POST (2005) *Household Energy Efficiency*.
[47] Ibid.

quality[48].

5.11   Regardless of the inherent contradictions in the energy rating scheme, it has gained traction with the participants and was mentioned in many of the groups as <u>the only means of identifying an energy efficient product (participants could not think of other ways they could distinguish between products)</u>:

"*In the shops we went in they* [energy rating labels] *were really in your face and my boyfriend's mum is really eco-friendly so she drew us onto all the A rating ones but it's not something I looked at initially*", (Currently Constrained, Female, Lichfield)

Knowledge of the scheme was more marked however for the **Greens** and **Consumers with Conscience** while in other groups such as the **Long-Term Restricted** and **Basic Contributors** only a minority mentioned it (and more people had never seen or heard of it).

5.12   <u>On the whole, energy is not a factor that is considered when making a purchasing decision</u> (except for the **Greens** who claimed to factor this in on environmental grounds). Generally, people did not consider future energy savings (in terms of running costs) or the embodied energy of products (the amount of energy used in the manufacture and transport of goods). Moreover, participants are not 'sold' on energy issues by salespeople in the same way they are 'sold' other elements, e.g. price, lifestyle etc.

5.13   *Initial* cost is by far the biggest driver when purchasing products (particularly for **Wastage Focused, Long-Term Restricted** and **Basic Contributors**), with important secondary issues such as brand, quality and personal recommendation. For example, **Consumers with a Conscience** appeared much more likely to factor in the energy rating only when comparing two otherwise identical products. In some cases, energy would be the last consideration after price, brand, design and style features:

"*It would have to tick the other boxes first, be the right colour and shape*", (Consumer with Conscience, Female, Dorking)

"*I didn't even look if it was environmentally friendly or not. Quite frankly, I don't give a damn so long as my washing's done*", (Wastage Focused, Female, Halifax)

"*They're double the price*" (Long-Term Restricted, Female, Lichfield)

"*All that's important to me is the guarantee*", (Basic Contributor, Female, Lichfield)

Indeed, research shows that *even* ethical consumers choose reliability (in the form of brand assurances and recommendations) when purchasing technological or 'high ticket' products rather than ethical considerations as there is less risk involved in this strategy[49].

5.14   Even where the scheme was unfamiliar, <u>the ratings system was universally seen as a popular concept; easy to grasp and understand</u> (the contradictions highlighted above were not discussed nor were they mentioned by any of the participants). After talking about it in the focus group (sometimes for the first time), many people became convinced of its importance. Moreover, many audit participants report that they would use it in the future or had even used it since the focus group to purchase a new appliance:

"*I never thought about it before but I'm in the process of moving, so I'll be buying energy efficient products now…my washing machine's on the blink*", (Currently Constrained, Female, Exeter)

"*After the meeting I would now look for energy ratings and I spoke to the auditor about it too*", (Basic Contributor, Female, Lichfield)

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[48] Oxera (2006). *Policies for energy efficiency in the UK household sector.*
[49] Hwang, K and Young, W (no date). *Ethical consumers' brand choice on technology-based products.*

"I bought a fridge last week with my mum and looked at energy rating for the first time. We got an A fridge", (Currently Constrained, Male, Lichfield)

5.15 Moreover, the scheme was so well-liked that people (particularly the **Greens**) thought it should be extended to include other electrical appliances such as computers and televisions:

"I was looking for computers today and there's not a mention anywhere of an environmentally friendly product", (Green, Male, Dorking)

"I think there is a strong case for government to start highlighting that problem", (Green, Female, Halifax)

5.16 Many groups suggested that the scheme should also include average running costs of a product to enable them to convert energy efficiency into costs, which they could better understand and equate with their current products:

"If you got A, it you would save x amount, that would be good", (Basic Contributor, Male, Lichfield)

5.17 Figure 4 (below) displays responses to buying energy efficient appliances/products by segment.

Figure 4: Responses by segment to buying energy efficient appliances/products
Source: Brook Lyndhurst

	Acceptable goal?	Feasible goal?	Willingness to act?
Greens	Yes	Yes	Yes
Consumers with Conscience	Yes	Yes	Yes, but more likely to consciously factor in where choosing equal products
Wastage Focused	Yes	Yes	Yes, if initial costs do not outweigh savings on running costs
Currently Constrained	Yes	Yes	Yes, in future
Basic Contributors	Yes	Yes	Yes, but is quite a way down the list
Long-Term Restricted	Yes	Yes, but cost constraints	Yes, within cost constraints

Better energy management and usage in the home

5.18 Previous research suggests that the way that people use and manage their appliances has a profound impact on energy consumption in the UK, particularly where:

- 72% of household energy is used for space and water heating but many people are unaware of how to efficiently use these appliances (e.g. that a boiler is most efficient if kept at a constant 56^0C) or how to operate timers and thermostats. Moreover, the largest increase in domestic energy consumption in recent years has been for space heating (increasing by 26% between 1990 and 2002)[50];

- The average temperature inside UK homes is rising from 13^0C in 1970, 16^0C in 1990 to 18^0C in 2004. It takes 50% more energy to heat a house to 18^0C than at 1970 levels[51];

- Lights and appliances account for 23% of domestic energy use and this is increasing by 2% per annum[52] (people have more appliances than ever before and they are growing in

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[50] DTI (2006). *Energy – its impact on the environment and society*.
[51] Green Alliance (2007). *A manifesto for sustainable heat*.
[52] Boardman, B et al (2005). *40% House*. Environmental Change Institute, University of Oxford.

size, e.g. there is a trend for larger fridges);

- People often site appliances in highly inappropriate places which increases energy consumption by forcing appliances to work harder, e.g. placing cookers next to fridges, fridges in cupboards etc[53];

- There is increasing demand for air conditioning units; one of the highest consuming electrical appliances (although this was not the case with *these* participants);

- The number of households is increasing, exacerbating energy demand;

- People regularly admit to not turning off electrical appliances. A recent survey states that 25% regularly leave on lights in an empty room and over a third (36%) leave TVs on standby[54]. Moreover, past research by Brook Lyndhurst indicates that this figure is probably much higher in reality[55];

- The residential sector is responsible for the evening rise in demand (peak) when it is more expensive to provide and use energy; and

- As manufacturers produce more technological efficient products, the only remaining means of reducing energy consumption of these products is by managing the way they are used more appropriately.

5.19 This behavioural goal underlines to be highly accessible to the majority of participants as it often appears to the individual to be the easiest to achieve and offer the greatest immediate rewards (in cost savings). For example, many participants were alarmed to discover that power packs for computers and mobile phone chargers use energy even when disconnected from phones and PCs. As a result they were convinced they would rectify this when they returned home. Most of the audit participants reported that they had turned appliances off as a result, e.g. lights, televisions and chargers.

> "*Before the audit the light was on if it was on, but now it is switched off*",
> (Basic Contributors, Male, Exeter)

> "*Before the audit, we never turned switches off at the wall, I'd always fill the kettle up no matter what, even if it was just for myself. Now, we're trying to think about it a lot more*",
> (Basic contributor, Female, Lichfield)

5.20 Some of the **Wastage Focused** and **Long-Term Restricted** participants already appeared to be heavily restricting the amount of energy they use in the home to save money and are eager to know how they may reduce this amount even further. However, the latter are often physically restricted by the properties they live in:

> "*Every council property I know has a bath and there are no showers installed*",
> (Long-Term Restricted, Female, Exeter)

> "*When you start to draw a pension, you've actually got to look at the bills and decide where you can cut*", (Wastage Focused, Male, Dorking)

5.21 **Basic Contributors** appeared to be least willing to engage in this goal, partly because it seems like a hassle, but they were amenable to cost reductions and may be persuaded:

> "*I can't be bothered to flick switches before I go to bed... I suppose it's just being lazy really*",
> (Basic Contributor, Female, Lichfield)

> "*I'd be happy to do this if it were converted into money*",
> (Basic Contributor, Female, Exeter)

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[53] Jones, A (2007) and EDF Energy. Seminar on 'Retro-fitting and Domestic Demand Reduction' on 9th May.

[54] Energy Saving Trust (2007). *Green Barometer. Measuring environmental attitude*.

[55] Brook Lyndhurst research (2001 and 2006) on 'Household Waste Behaviour' triangulated people's responses about 'what and how often they recycle' with 'what they are actually recycling and when'. It found a huge discrepancy in reported responses where people often 'over claim' pro-environmental behaviour.

5.22 Participants who are **Currently Constrained** appeared knowledgeable about what they can do to better manage their domestic energy consumption but results were mixed regarding their willingness to do so. Some feel they are doing enough already; others want more information. Above all, there is a sense that many don't take responsibility for their own energy consumption as much as they might because they are not currently paying energy bills where they live. The audits focused heavily on this goal with this group (as many of the other goals are currently outside their remit) with some success:

"I'm quite religious about checking things [are switched off] before I leave the house now, even though I don't pay the bills", (Currently Constrained, Female, Exeter)

5.23 As a whole, there were two issues that may need to be addressed (which is true for all participants) to improve energy management in the home, namely:

- Past research indicates the energy consumed when washing and drying clothes is equal to all other electrical appliances combined (a tumble dryer uses as much as three times the energy of a washing machine)[56]. Many participants claimed that their washing machines and tumble dryers were 'on constantly' but hardly any of our participants mentioned ways to reduce energy consumption for laundry, e.g. washing at 30^0C; and

- Many participants were unwilling to turn electrical appliances off at the power source for fear of losing valued presets, e.g. microwave clocks, alarm settings or pre-programmed radio and television channels. Many will need to be convinced that manufacturers have designed this into products before they will attempt to turn them off at the plug.

5.24 Figure 5 (below) displays responses to buying energy efficient appliances/products by segment.

Figure 5: Responses by segment to better energy management and usage in home
Source: Brook Lyndhurst

	Acceptable goal?	Feasible goal?	Willingness to act?
Greens	Yes	Yes	Yes
Consumers with Conscience	Yes	Yes	Yes
Wastage Focused	Yes	Yes	Already are
Currently Constrained	Yes	Yes	Yes, to some
Basic Contributors	Yes	Yes	Yes, but must play on cost benefits
Long-Term Restricted	Yes	Yes	Already are

Installing insulation products

5.25 Insulation (e.g. double glazing) is a highly effective means of reducing energy consumption. Cavity wall and loft insulation in particular offer the greatest scope – out of any of the five behavioural goals – to reduce the most carbon emissions[57]. In the UK, 60% of homes with cavities have not been filled and 48% of homes have less than 10cm of loft insulation[58]. To this end, loft insulation alone can deliver savings of over 1.2 million tonnes of carbon per year.[59] However, by 2010 all installation measures will have been exhausted in the social housing sector and emphasis will have to fall on owner-occupiers and (hard to reach) private landlords.[60]

5.26 Perhaps surprisingly, this appeared to be by far the most accessible behaviour goal for _all_ participants, partly because many have already undertaken cavity wall insulation or double

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[56] Tovey, K (2007) Seminar on 'Retro-fitting and Domestic Demand Reduction' on 9th May, 2007. UCL.

[57] This is the reason why both Kirklees and London are currently implementing an heavily subsidised 'insulation offering' to their residents.

[58] DTI (2006). *Energy – its impact on the environment and society*.

[59] Green Alliance (2007). *A manifesto for sustainable heat*.

[60] HM Treasury, Carbon Trust, Defra and Energy Saving Trust (2005). *Energy Efficiency Innovation Review.*

glazing and so can imagine others doing the same[61]. Indeed, in a focus group exercise, it was the goal mentioned most often, and frequently. However, for many, insulation is a means to save money, *not energy* (which fits with the lack of understanding between people's energy consumption and lifestyle):

> "*I have just had cavity wall insulation put in purely to try and save money. I never even thought about energy saving*", (Consumers with Conscience, Female, Dorking)

5.27   Despite positive payback periods (e.g. the payback on loft insulation is 2.7 years and households can receive 180% return over 5 years), <u>the main drawback for participants was the long-term investment required to install insulation products</u> (which can appear more off-putting than investing in energy efficient products for instance). Moreover, many people often perceive the costs and time requirements are higher than the reality (figure 6).

Figure 6: The perception gap
Source: Oxera, 2006

Insulation type	Median perceived value	Mean perceived value	Mean actual value
Cavity wall installation cost	£600	£1,139	£400
Cavity wall installation time	1 day	2.1 days	0.5 days
Loft installation cost	£300	£530	£300
Loft installation time	1 day	1.4 days	0.5/1 day

5.28   <u>Some participants had taken advantage of available grant schemes over the past twenty years with positive outcomes</u>. As a result, further grant schemes were deemed an ideal means of encouraging more people to install insulation products:

> "*It was the most immediate money saver, but then again councils gave you grants for it*",
> (Wastage Focused, Male, Dorking)

5.29   In addition to cost, research suggests there are other issues which must be overcome such as the "hassle factor", distrust of the supply chain, a lack of awareness about accreditation and trusted recommendations.[62] Some participants were not very keen on installing insulation products because of the perceived mess it would make and disruption it would cause.

5.30   There are several smaller, more practical insulation suggestions (such as draught excluders and reflective tin foil behind radiators) that particularly appealed to the cost-driven (such as **Wastage Focused**) as simple yet effective measures to save money. To many others (**Basic Contributors, Consumers with Conscience**) this seemed like too much hassle.

5.31   **Currently Constrained** and **Long-Term Restricted** participants were supportive of this goal but felt unable to effect change individually because of their current personal circumstances, although many social housing tenants reported that insulation measures were currently being installed:

> "*We're actually due to have cavity wall insulation done… the Housing Association are due to do it… I will chase them up if they don't do it now. I wouldn't have done, but since the audit I want it done*",
> (Long-Term Restricted, Female, Lichfield)

> **Constrained** individuals are at the mercy of landlords who they cannot envisage will install insulation on their behalf, although some claimed they will install insulation in their own homes in the future.

5.32   Results from the audits are mixed. The most common negative reaction against cavity wall insulation from the participants was in regard to the actual design of people's homes. Many

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[61] Indeed, this links into 'network theory' and the use of mavens - see Gladwell's 'Tipping Point' and Brook Lyndhurst's work (2006) on 'Triggering widespread adoption of sustainable behaviour'
[62] ibid.

believed that cavity walls 'allow a house to breathe' and should therefore be left empty and they could not be persuaded otherwise. However, the ability to discuss some of these issues with a trusted advisor in their own home (about their own house) proved instrumental for some participants in understanding the payback period and investment requirements in more detail and many claim they will act on this information in the coming year (unfortunately there is no pattern to who these people are).

5.33 Many of the audit participants were unlikely to further pursue loft insulation; many already had partial insulation (under 10cm) but as the cost savings with increased insulation (to the recommended amount of 25cm) average approximately £13 per year it was not considered worth the investment.

5.34 Figure 7 (below) displays responses to installing insulation by segment.

Figure 7: Responses by segment to installing insulation
Source: Brook Lyndhurst

	Acceptable goal?	Feasible goal?	Willingness to act?
Greens	Yes	Yes	Yes, for cost reasons (and environmental)
Consumers with Conscience	Yes	Yes	Yes, for cost reasons (and environmental)
Wastage Focused	Yes	Yes	Yes, for cost reasons depending on payback period
Currently Constrained	Yes	No	Yes, in future
Basic Contributors	Yes	Yes	To some, but not on the whole
Long-Term Restricted	Yes	Not unless put in social housing	Not possible unless it is done for them

Installing domestic micro-generation

5.35 The UK government is increasingly trying to source energy from renewable sources: by 2020, the government aims to meet 20% of its energy supply through these means. In turn it has encouraged electricity suppliers to source energy from renewable sources by providing a financial incentive for them to do so (through the 2002 Renewables Obligation).

5.36 One avenue for increasing renewable energy which is receiving considerable attention in the current political landscape is the installation of micro-generation (e.g. small-scale wind turbines or solar panels) into UK homes: note the government's 2006 Microgeneration Strategy and the 2016 zero carbon housing target; and the government has invested a total of £500 million for capital grants and research and development for these less developed low carbon technologies (2002-2008).

5.37 However, two facets of the current situation show just how much more needs to be done:

- In 2005, renewable energy accounted for 4.6% of the UK's electricity supply[63]; and

- In 2005, there were fewer than 100,000 micro-generation installations in the UK (and most are solar water heaters installed pre 2000)[64].

5.38 Interestingly, the focus groups found that <u>most people are open to the idea of domestic micro-generation *in principle*</u> (not just the 'dark greens' as might have been expected). This is reinforced by previous research, which states that there is a strong support of renewables to

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[63] Department for Business, Enterprise & Regulatory Reform (2007). Accessed Sept 21, 2007. www.berr.gov.uk/energy/statistics/publications/dukes/page39771.html
[64] Department of Trade and Industry (2006). *Fact Sheet – Sources of energy (renewables)*.

address global warming in the UK.[65]

5.39   However, micro-generation – and even renewable energy - is <u>still a very intangible concept for the majority of participants</u> who have no idea how it would work, how much it costs or how they would even begin to think about installing it themselves.   Indeed, the physical implementation of micro-generation can be complicated.   For example, does the building need to face south? Does it receive enough natural power (wind or solar)? and so forth.

5.40   Moreover, this research supports previous studies in that there are several obstacles (e.g. negative public perceptions about renewable energy) which inhibit the increase of domestic micro-generation, at least in the short term, namely:

- <u>Participants were unaware of the different kinds of micro-generation</u>.   For the most part, people are much more aware of wind and solar options than other sources such as geothermal heat pumps, CHP or biomass.   Even amongst the **Greens** who proved most knowledgeable, there was little awareness of the difference between solar water heating and photovoltaic systems.

- In more cases than not, micro-generation is <u>not something that participants related to towns and cities, but to wide-open countryside or the coast</u>.   This chimes with research conducted with Londoners who cite the 'lack of space' and 'unreliable wind source' as key barriers to increased use of renewable energy in London[66];

    "*I think they are gimmicky and completely ineffective. You would need a huge one… and you can't watch the telly because it's not windy enough*",
    (Consumer with Conscience, Male, Dorking).

- <u>For the most part, participants associated solar panels with warmer climates</u>, such as southern continental Europe.   These perceptions are deep-rooted and hard to dispel even when the lack of direct sunlight required for photovoltaic cells is explained:

    "*They do work in the right circumstances… in an area like this they are hopeless*",
    (Green, Male, Dorking)

- The <u>initial cost and payback period was seen as the main obstacle</u> (rather than the actual concept), although there were operational/aesthetic issues for some;

    "*I looked into it but couldn't afford the initial outlay. I would have done it but there was no financial help*", (Green, Male, Halifax)

    "*I'd probably have to live to about 183 before I got my money back*",
    (Basic Contributor, Male, Exeter)

- Participants were <u>unaware of grant schemes</u> or what they would need to do in order to apply (often they do not perceive themselves as eligible);

    "*If there was a system that the government was doing, then that would be fantastic. None of us know about it*", (Wastage Focused, Male, Dorking)

- Micro-generation was perceived <u>as a good thing only when people don't think it will directly impact upon their standard of living</u>.   The three most common complaints mentioned in the groups against wind power were 'increased noise', that they 'look unattractive/unsightly' and that they 'negatively impact upon local wildlife' (incidentally these are the same issues reported by Londoners in 2003[67]).

- <u>Often these negative perceptions are unfounded</u>.   Past research has shown that many

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[65] Curry, TE et al (2005). *A Survey of Public Attitudes towards Energy & Environment in Great Britain*.
[66] Brook Lyndhurst (2003). Attitudes to renewable energy in London: public and stakeholder opinion and the scope for progress.
[67] Brook Lyndhurst (2003). Ibid.

problems foreseen by local residents about new wind farms do not materialise, e.g. increased noise, spoilt landscapes, damage to wildlife and additional traffic.[68] Moreover, many participants related their experiences or opinions of wind *farms* to small-scale, domestic wind *turbines*, which are dissimilar. Participants often reported negative reactions to wind turbines but admitted they have never seen one:

"I think wind turbines are a good idea, but personally I wouldn't have one. I don't think it would fit onto the house, but having not seen one, I don't know. I wouldn't like the thought of it, it wouldn't fit into the area", (Basic Contributor, Female, Lichfield)

- <u>The issue of aesthetics is mixed</u>. Some participants believed wind turbines or solar panels are unsightly and this would put them off installing them on their own properties. Some thought this a minor point and one that would be overcome in the same way as electricity pylons have in the past (and just blend into the landscape). Others thought they looked amazing:

"I think you would get used to it, like motorways, electricity pylons or sky dishes", (Wastage Focused, Male, Dorking)

- <u>Participants were apprehensive of new technologies and concepts but concede they would embrace them when they become more mainstream</u>. To this end, many were nervous about how other people would react to them installing micro-generation on their house, particularly if it would impact upon property prices:

"If it starts to become the norm, then I would consider using it", (Consumer with Conscience, Female, Dorking)

- <u>Participants were unsure about who to trust in this field or where to go for reliable information</u> (this is discussed further below). Earlier studies suggest this difficulty in understanding the technology involved has not been helped by cowboy salesman, a lack of recommendations and a difficulty in selling electricity back to the grid (one of a number of positive benefits of installing micro-generation)[69].

5.41 The difficulty in obtaining planning permission has been cited as an issue in past research but participants did not mention it as a barrier in these focus groups. (This may possibly be because people have never considered micro-generation and are unaware it is a requirement).

5.42 There were a few comments made in the focus groups (*not* by the majority) that installing micro-generation may provide more opportunities for vandalism or that they may actually encourage *increased* energy consumption:

"If it was run on solar power or something like that then I would probably not worry about turning off so many lights or putting an extra load in the tumble dryer", (Green, Female, Dorking)

This has found to be the case in some instances, where people often offset one 'good' environmental behaviour (such as recycling) with a 'bad' one (e.g. flying). However, current research points to the fact that people tend to become *much more* sustainable in their energy consumption when living in houses where domestic micro-generation is installed, even passive households (who didn't choose to have it installed, e.g. social renters).[70]

5.43 Despite these obstacles, micro-generation appears to become more acceptable to participants when the following issues are addressed/targeted:

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[68] GfK NOP Social Research (2006). *Renewable Energy Awareness and Attitudes Research*. Department of Trade and Industry.
[69] Green Alliance (2007)
[70] The Hub (2005). Seeing the light: the impact of micro-generation on the way we use energy.

- Solar power was the most preferred type of micro-generation by participants (because it has less negative connotations in regard to noise and aesthetics). Indeed, 92% of the government's Clear Skies grants have been awarded for solar thermal projects;

- Participants want reassurance on the cost implications of installing micro-generation (that it will be cost-effective over the long term) as well as substantial grant schemes (and clearer access to them), both of which were not currently felt to be the case;

- More information is needed from unbiased sources, such as:

  "*If the house will run efficiently, what is going to happen in the future and what sort of size you need to actually run your house*", (Green, Male, Halifax)

  If **Greens** do not have enough information to pursue micro-generation it is highly unlikely that others will either;

- Many participants appeared amenable to the idea of community micro-generation schemes, which they felt may be more feasible (although some were unsure as to who would manage these installations and if their neighbours could be trusted!);

- Everyone appeared willing for energy companies to pay them to site micro-generation facilities on their property (eager to make some money). In most cases, however, they did not understand that this would not enable them to use the energy produced – they saw it as a 'double whammy' – being paid to produce free energy which they could then use freely!; and

- New-build was often cited as a perfect opportunity to implement micro-generation and individuals voiced frustration over the fact that they perceived this currently wasn't happening:

"*If a new development, new flats was being built with it, you would see it as less eccentric and more sort of mainstream*", (Consumers with Conscience, Male, Dorking)

5.44 Despite these (not inconsiderable) generalisations, there were still variations across the different segments. For instance, many groups were keen on micro-generation, but not always for environmental reasons. Cost savings were a big driver for many people (regardless of segment) but most notably for the **Wastage Focused** and those **Basic Contributors** in favour of micro-generation.

5.45 There was a definite correlation between the level of awareness of different types of renewables and support of renewable energy. It appeared that participants need to be well informed on environmental issues to give it their full support, which explains why the **Greens** and **Consumers with Conscience** were broadly more supportive. Indeed, for some **Greens**, this did seem normal behaviour (although they hadn't done it themselves):

"I would think there wouldn't be any issue with getting them installed. The whole country's *going green isn't it?",* (Green, Male, Halifax)

5.46 Of the **Basic Contributors** and **Long-Term Restricted** who were in favour of micro-generation, they tended to be *passively* willing, i.e. they were keen on the idea but do not envisage a time when they would be able to install it themselves (although they would be willing for someone else to do it for them, e.g. Housing Association):

"*These things are out of my reach financially, but if you want to install them here I'd be ever so happy*", (Basic Contributor, Female, Exeter)

5.47 It appears that many of the **Currently Constrained** had not really considered micro-generation in any sense before due to their circumstances, but the audit interviews found many open to the idea in the future:

> "*To be honest you might as well ask me if I'd consider going to the moon because at the moment it's a temporary existence in rented accommodation*",
> (Currently Constrained, Female, Exeter)

5.48   The biggest drawback for the **Wastage Focused** was the perception that the payback on investment is perceived as too long for them to recoup their costs[71]:

> "*I don't think I'd trust something like that…I suppose I'm a bit old-fashioned. Too old to be starting doing things like that*", (Wastage Focused, Female, Halifax)

5.49   Figure 8 (below) displays responses to installing domestic micro-generation by segment.

Figure 8: Responses by segment to installing domestic micro-generation
Source: Brook Lyndhurst

	Acceptable goal?	Feasible goal?	Willingness to act?
Greens	Yes	Yes	Yes
Consumers with Conscience	Yes	Yes	Yes, but would be more convinced by successful demonstration projects nearby
Wastage Focused	Yes	Yes	Yes, but would have to be more convinced of payback periods
Currently Constrained	To some	Not at present - constrained	No
Basic Contributors	To some	No	No
Long-Term Restricted	To some	No	Would have to be done for them, e.g. social housing renters

Switching to green energy tariffs (GET)

5.50   Green energy tariffs oblige the energy supplier to source a similar amount of energy to that consumed by the customer from renewable energy sources. Electricity is supplied to the home *as before* (i.e. green energy is not supplied to the home in question) but the energy company matches an equivalent amount from renewable sources somewhere else on the grid.

5.51   Statistics show that take up of these tariffs has been slow (212,000 customers have switched to a GET, representing 0.83% of the total electricity market in 2005)[72].

5.52   This focus group research suggests that it seems unlikely that this will increase under current circumstances, where research has made it clear that:

- GETs have not entered into the public's consciousness. Very few participants (with the possible exception of some **Greens**) had heard of either GETs, or their alternative 'green energy funds' (where the customer supports a fund for the development of future renewable energy generation)[73]. (This situation has not improved since 2003, when 74% of Londoners claimed to have received no information at all from energy companies regarding GETs);

- Participants did not understand the concept of GETs. In most instances, they tended to think that their *own* house will be receiving green energy (which causes confusion over how this would work and makes the tariffs appear much more complicated than is the case);

- Only *some* participants were generally supportive of GETs as a concept (never mind

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[71] Haq, G et al (2007). *Greening The Grey's: Climate Change and the Over 50s.*
[72] Retallack, S, Lawrence, T and Lockwood, M (2007). Positive Energy: Harnessing People Power to Prevent Climate Change
[73] Energy Saving Trust (2003). *Green Electricity Tariffs.* Factsheet 2: Renewable Energy Technologies.

paying more). On the whole, **Basic Contributors** and **Long-Term Restricted** were less likely to see any value in GETs:

> *"Yes, but how do I benefit?"*, (Basic Contributor, Female, Lichfield)

> *"If you were getting this high energy bill and then turned the TV on and see all the stuff in China, you'd think 'why am I bothering?'"*, (Basic Contributor, Male, Lichfield)

- Overwhelmingly, participants did not think it is their responsibility to source GETs. With the exception of some **Greens** who were signed up to a tariff of this nature, most people think it is the responsibility of the energy companies or government to use green energy as a matter of course:

> *"Why don't these energy companies who make billions put something back?"*, (Green, Male, Halifax)

- On the whole they were totally unwilling to pay more for their energy bills. This is particularly true of those most driven by cost and least by the environment. Although some participants stated they would be willing to have a small increase (for environmental reasons), this caused outrage to others, even claiming that GETs should actually be *less expensive* (subsidised by government). It should be made clear that even some of the **Greens** were unwilling to pay more for GETs (even for those Greens who are very environmentally driven, this was a step too far);

> *"I would hesitate if it were more"*;
> *"Why should we pay more for the same thing?"*;
> and *"It's one of the most stupidest thing I ever heard in my life"*,
> (Different Greens, Male and Female, Dorking and Halifax)

> *"Nobody ever says, 'I am a bit more expensive but hell I am green'. Nobody ever says that"*, (Consumer with Conscience, Female, Dorking)

- There was some distrust over the idea of GETs. Some **Wastage Focused**, **Basic Contributors** and **Long-Term Restricted** participants saw GETs as a ploy for the government and energy companies to gain extra revenue from customers;

> *"If we pay for this green tariff, who is to say it is going back into green energy"*, (Consumer with Conscience, Female, Dorking)

- Participants were unwilling to change energy providers or tariffs because of the perceived 'hassle factor'. Many people had remained on the same tariff - even though they knew there may be more economical options elsewhere - to avoid the necessary effort involved. It is debatable, therefore, that many would be willing to change tariffs for environmental reasons when they are not driven to do so by cost factors.

5.53   Tellingly, *not one* of the people participating in the energy audits was persuaded to switch to green energy tariffs - nor did they change their opinions about them - through discussions with the energy advisor (or the focus group).

5.54   Figure 9 (below) displays responses to the goal of switching to green energy tariffs by segment, although there was very little variation across them. Except for the **Greens** (and even then only some), the concept of GETs was universally disparaged.

Figure 9: Responses by segment to switching to green energy tariffs
Source: Brook Lyndhurst

	Acceptable goal?	Feasible goal?	Willingness to act?
Greens	To some	To some	Possibly
Consumers with Conscience	No	No	No
Wastage Focused	No	No	No
Currently Constrained	No	No	No
Basic Contributors	No	No	No
Long-Term Restricted	No	No	No

Expectations for government and industry

5.55　　Findings from attitudes towards the five behaviour goals have identified several expectations that participants have for government and industry, which are summarised in figure 10 below.

Figure 10: Participant expectations for government and industry
Source: Brook Lyndhurst

Behaviour goal	Identified expectations for government and industry
Buying/installing energy efficient products/ appliances	Participants expect government (and business) to eliminate the least environmentally friendly products
	Participants expect the energy ratings scheme to be extended to include other electrical appliances, e.g. computers and televisions
Better energy management and usage in the home	Participants want to be convinced that manufacturers have designed products to be turned off at the mains (rather than being placed on standby) without losing valuable presets, e.g. microwave clocks, pre-programmed television channels
Installing domestic micro-generation	Participants are willing for energy companies to pay them to site micro-generation facilities on their property (although it must be made clear that they will not receive free energy as a result!)
	Participants expect that micro-generation will be sited in new build and existing government/local authority buildings
Switching to a green energy tariff	Participants expect energy companies and government to use green energy as a matter of course
	Participants expect government to subsidise green energy so that these tariffs would actually be *less* expensive

6   Possible interventions and roles

Summary
<u>Smart metering</u>. Most individuals (across all segments) responded favourably to the idea of smart meters (for cost and environmental reasons) although very few people wanted to pay for it themselves.
<u>Differential tariffs</u>. Very few participants had heard of differential tariffs but were keen on the idea for cost savings (**Basic Contributors** were least keen because of the perceived hassle involved). It appears possible to convince skeptics by successful demonstrations, e.g. seeing it work for a neighbour over a period of time would convince them positively.
<u>Energy performance certificates (EPCs)</u>. These were not well received (except by the **Currently Constrained** and a few **Greens**) because individuals perceived them to be an infringement of civil liberties or they resented the cost implications and the mandatory element.
<u>Personal carbon allowances (PCAs)</u>. This was the least popular intervention (across the entire sample) except for the **Currently Constrained**. Participants saw it as a threat to civil liberties, impossible to administrate or police and that the disadvantaged would be negatively affected.
<u>Trust</u>. There was widespread distrust of government, local authorities and business primarily because they were not seen to be 'walking the talk' and leading by example (an oft cited example was lighting left on at night or plane travel by key politicians) nor ring fencing money from green taxes for green issues.
<u>Compensations and encouragements</u>. Participants felt the government should offer incentives rather than more taxes (with mixed responses to council tax rebates although grant schemes were very desirable). Individuals wanted more specific cost-savings information, evidence on the effectiveness of current technologies and, above all, to receive reliable, consistent information with the same message.

6.1   This section examines four possible interventions by the government to reduce energy consumption and participant reactions to them. It then discusses possible compensations or means of encouragement identified by the research and who participants trust to deliver these and how. Finally the potential roles of government and business are examined.

The four main interventions discussed in the focus groups were:

- Smart metering;

- Differential tariffs;

- Energy performance certificates; and

- Personal carbon allowances.

In all instances, respondents were provided with a brief, unbiased description of each intervention and asked for their reactions. For many, this was the first time they had heard of these issues.

Smart metering

6.2   A 'smart meter' is an electronic device that allows energy suppliers to communicate directly with their customers, removing the need for meter readings and ensuring entirely accurate bills with no estimates. They tell people about their energy use through either linked display units or other ways, such as through the internet or television. Smart meters have several advantages over the current energy meters found in homes, namely:

- If provided with a suitable display, it provides energy consumption in monetary terms, in addition to the standard kilowatt hours, which is much more relevant and useful to residents;

- The provision of real-time displays with smart meters has the potential to transform how households manage their energy use. As it is located in a central location, it can be easily accessed and read. It is thought that this keeps energy issues 'front of mind' with the public rather than hidden away;

- Through smart meters, readings can be taken remotely, ensuring that bills are more accurate, and

- Electricity suppliers will be able to offer new products that may incentivise customers to use less energy at peak times or to use less energy overall.

6.3 'I will if you will' advocates the introduction of legislation to implement national meter replacement (to smart meters) by 2012[74] and it is hoped that their introduction into UK homes will encourage more sustainable energy consumption (estimates range from a possible 3 to 15%[75]).

The Energy White Paper (2007) outlined the Government's expectation that, within the next 10 years, all domestic energy customers will have smart meters with visual displays of real-time information that allow communication between the meter, the energy supplier and the customer.

The Government proposed that, from May 2008 and where technically feasible, every household having an electricity meter replaced and every newly built domestic property will be given a real-time electricity display, free of charge. The display must show real-time information about electricity consumption and cost. In addition, from as soon as possible in 2008 to March 2010, any household requesting a real-time display for their electricity meter should be given one free of charge by their energy supplier. In August 2007, BERR published a consultation on energy billing and metering seeking views on a range of measures which were set out in the Energy White Paper.

The first UK smart meter trials are in operation in London; and BERR is co-funding (with supplier-led consortia) a series of two-year trials which will test consumers' responses to different interventions, including smart meters and clip-on real time display units. The trials, which began in July 2007, will involve around 40,000 households across Great Britain.[76]

6.4 Past research suggests that the UK population believe smart meters to be a good idea (79% in a recent survey) and over 80% think they would change their behaviour, "if they had a little screen in their home that told them exactly how much energy each device in their home was using at any one moment in a way that they understood".[77]

6.5 Similar reactions were identified in the focus groups, where most individuals responded favourably to the idea of having a smart meter in their own home (there was very little variation across segments). Participants thought it would allow increased visibility of energy costs and savings (appealing to both the environmental and cost driven at once) for a relatively small initial outlay:

"*If you are visually seeing something, you would think, 'those kids, I am going to go and switch off that TV as they're not even in the living room*", (Green, Female, Dorking)
"*The visibility thing is a good idea. It would be like a bank account really*",
(Basic Contributor, Female, Exeter)

6.6 Although smart meters were received favourably, some were not so sure. A few individuals regarded the smart meters as an intrusion. Others were unsure they would lead to lasting behavioural change (believing the devices may be ignored when the novelty has worn off). Some thought they had the potential to irritate consumers by constantly reminding them of their energy consumption and bills and very few people wanted to pay for one themselves:

"*It would stress me out*";
"*After three or four months you would just get used to it*"; and
"*It's just a waste of money, for information's sake*",
(Different Greens, Male and Female, Halifax)

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[74] Sustainable Consumption Roundtable (2006). *I will if you will. Towards sustainable consumption.*
[75] Green Alliance (2007)
[76] Defra (2007)
[77] Logica CMG (no date). *Energy efficiency and the consumer – a European survey.*

Differential tariffs

6.7 In the UK, the domestic energy market is primarily responsible for the increase in energy consumption during peak hours (in the morning prior to a large proportion of residents leaving for work and a larger one in the evening upon their return).

6.8 It is at these peak times when energy is most expensive and more carbon emissions are produced (surplus energy needs to be brought into the grid from back up power plants, which are often more expensive and ineffectual to operate). The 'holy grail' of energy suppliers, therefore, is to flatten out the energy curve throughout the day.

6.9 One way to reduce this energy spike is to encourage people to use 'differential energy tariffs' where the customer can obtain cheaper electricity in return for using energy during off-peak hours (similar to off-peak telephone charges), e.g. running washing machines at 3pm or 3am instead of 7pm can be far more efficient without changing the amount of energy used.

6.10 It is also hoped that increased awareness of different energy tariffs may make the consumer more aware of energy in general and therefore behave more sustainably, although as yet there is no research to support or deny this view.[78]

6.11 On the whole, <u>most participants thought that differential tariffs were a good idea although very few had heard of them as a concept</u>. For the small minority that were familiar with them, this was due to using the 'Economy 7' tariff in the past, with mixed opinions (some thought it had been cost-effective, others thought Economy 7 had been a 'waste of time')[79].

6.12 For all participants in favour of differential tariffs, <u>this was due to the potential cost savings rather than environmental benefits</u>, although this was seen by some people as an added advantage.
"*Well it is great, because it is cheaper*", (Green, Male, Halifax)

Some respondents, e.g. **Wastage Focused** are already using energy at off-peak times and were excited by the idea that this could cost them less (for existing behaviour). Some of the **Long-Term Restricted** were simply enthusiastic about the idea of saving money.

6.13 **Basic Contributors** <u>appear least keen on the idea</u> and raise several objections to using these tariffs (which are shared by *some* members of other groups), mostly that it is incompatible with their lifestyle, e.g. 'it's not possible with kids', 'I've heard horror stories of appliances blowing up the house if they're left unattended', and 'why should we bother' etc:

'I don't want clothes sitting in the washing machine for hours on end",
(Basic Contributor, Female, Exeter)

"*I think one benefit of having a detached house is being able to put the washing machine on at 3 in the morning, but I wouldn't as it might not be fair on the dog*",
(Basic Contributor, Male, Lichfield)

"*It's a good idea but listening to the neighbours using their machine at night isn't pleasant so I won't do it to anyone else*", (Long-Term Restricted, Female, Exeter)

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[78] If smart meters are used, differential tariffs become even more effective as they are able to identify – in 'real' time - points in the day when energy demand is low and can communicate this with the householder (who can then act on this information, e.g. by putting the washing machine on immediately). The potential impact on the grid can be dramatic even by a small change in behaviour, when it is done by several hundred people at once.
[79] There was no distinguishable difference between segments.

6.14   Moreover, some individuals who participated in the audit were distrustful – they didn't believe that it is actually cheaper or they thought that prices would increase during peak times to compensate:

> *"They'd just put the prices up at peak times instead",*
> (Basic Contributor, Female, Lichfield)

These sceptics reported that they would want to see it working for a friend over a period of time before they would change to a differential tariff themselves.

Energy performance certificates (EPC)

6.15   Since 10 September 2007, all homes being sold in England and Wales with three or more bedrooms need a Home Information Pack (HIP), which includes a home energy rating. The Pack includes an Energy Performance Certificate (EPC), containing advice on how to cut carbon emissions and fuel bills. Also included are documents such as a sale statement, searches and evidence of title.[80] A seller is required to conduct (and pay for) an EPC through a registered third party.

6.16   The EPC operates similarly to the current energy ratings system for appliances and cars (with A-G labelling) by fulfilling two main functions, namely to provide:

- An energy efficiency rating of the house (both current and potential); and

- An environmental impact rating of the house, measured in terms of carbon emissions (both current and potential).

6.17   On the whole, EPCs were not well received, for a variety of reasons:

- Participants saw them as an infringement of their civil liberties:

> *"I don't want anyone in my house measuring my lights",*
> (Green, Female, Dorking)

> *"We will have cameras in the loo seeing how many pieces of toilet paper we use",*
> (Consumer with Conscience, Male, Dorking"

> *"This is the start of something really sinister",*
> (Wastage Focused, Male, Halifax).

- Participants resented the cost implications and feared that this would affect the housing market and the ability to sell their own homes:

> *"People are not going to be able to afford to move",*
> (Green, Female, Dorking)

> *"I have never considered how energy efficient a house is when I bought it",*
> (Green, Male, Dorking)

- Individuals resented that it was a mandatory requirement (particularly because many hadn't heard about HIPs or EPCs). Some saw it as the equivalent of a house MOT and resented the government intrusion into their lives:

> *"I'm sick of being told what to do",*
> (Wastage Focused, Male, Halifax)

- There was widespread distrust about who would benefit from the revenue raised (paid by house sellers). Participants saw it as a means of taxation (both initially by having to pay an auditor and also through council tax, where they believed poor energy performing households would be charged more tax):

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[80] www.homeinformationpack.gov.uk. Accessed 21 Sept 07.

> *"It's like anything isn't it. When taxes go up, you pay them",*
> (Basic Contributor, Female, Exeter)

6.18   <u>The only group who were broadly positive to the introduction of EPCs were the **Currently Constrained** (and a few **Greens**)</u>. This may be because it was one of the few ways that landlords and builders could be forced to make pro-environmental choices (or it may have been because – as non home-owners - it doesn't affect them as much):

> *"It is a good idea. It would save you money and then earn you money",*
> (Green, Male, Halifax)

> "*It is probably a good idea. It will stop builders knocking up houses with very thin walls and no insulation to save the £10,000 cost*", (Currently Constrained, Male, Lichfield)

6.19   It was difficult to isolate people's feelings about the concept of EPCs from their aggravation at being forced into action through regulation. It may be the case that people are more open to the concept of EPCs than was identified here, but were angry at the mandatory element, particularly when most admitted they had never thought of a house's energy performance before. It should also be noted that many Londoners who objected to the congestion charge before its inception have revised their opinions since[81].

Personal carbon allowances (PCA)

6.20   Personal carbon allowances (PCA) – where each individual is given their own carbon allowance (an equal share for everyone) – are currently very fashionable, being touted by politicians and the media alike, e.g. The Observer's Low Carbon Diet.[82]

6.21   People who lead low carbon lifestyles would be able to sell part of their carbon allowance to those who live high carbon lifestyles. The argument has, therefore, been given that they work as a great social leveller; on average, the rich tend to emit more than the poor - hence it would be fiscally progressive with an average resource transfer from richer to poorer groups.[83]

Detractors claim it is impossible to calculate each individual's carbon usage fairly (due to the complexity of the measurements required) and would have to be based on huge generalisations which make the scheme redundant and ineffective.

6.22   <u>Overwhelmingly, this was the least popular intervention and disliked across the entire sample</u> (only supported by a few members of the **Currently Constrained** groups). The following reasons were provided for the vehemently negative reaction:

- It was seen as a <u>threat to civil liberties</u>:

> "*We're human beings not machines*", (Wastage Focused, Female, Dorking)

> "*Sounds like communism creeping in*", (Wastage Focused, Male, Halifax)

> "*It is a bit Big Brother*", (Basic Contributor, Female, Exeter)

- It was regarded as <u>impossible to administrate and police, and ultimately very expensive</u>. Many people thought it might lead to lots of cheating, stealing of cards and a black market in carbon (with very dystopian visions):

> *"A fantastic recipe for bureaucracy*",
> (Basic Contributor, Male, Lichfield)

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[81] Moreover, the majority of participants were keen to have an energy auditor in their own homes as part of the research, implying that they object mostly to the mandatory and cost elements more than anything else.
[82] Siegle, L (2007) The Low Carbon Diet. The Observer Magazine. 21st January 2007
[83] Defra (2007)

"It will be like the 1940s, there will be a massive black market in carbon going on",
(Green, Male, Halifax)

"We would all have to be micro-chipped, scanned in and out... awful",
(Consumers with Conscience, Male, Dorking)

- It was perceived that it would negatively impact the disadvantaged. Despite the ability for lower socio-economic groups to be able to sell excess carbon under the scheme, many people thought it would allow more affluent members of society to carry on as before unchecked in their behaviour:

"It just seems to be if you have got money you can carry on regardless",
(Currently Constrained, Female, Lichfield)

6.23   These findings are supported by a recent EST survey where 42% of the UK public would 'definitely not' commit to a 'carbon card' (PCA), 28% would 'probably not' with only a small minority (5%) reporting that they 'definitely would'.[84]

6.24   It has to be said, however, that people were not quite so harsh about the idea when it was suggested as a voluntary scheme, working in much the same way as a supermarket loyalty card. This suggests it is the mandatory element of the scheme that invokes such rage, rather than the scheme itself.

Figure 11: Responses by segment to possible support of four possible interventions
Source: Brook Lyndhurst

	Smart metering	Differential tariffs	EPC	PCA
Greens	To most	Yes	To some	No
Consumers with Conscience	To most	Yes	No	No
Wastage Focused	To most	Yes	No	No
Currently Constrained	To most	Yes	To most	To some
Basic Contributors	To most	To some	No	No
Long-Term Restricted	To most	Yes	No	No

6.25   The second half of this section examines the type of compensations and encouragements that could be offered to overcome negative reactions to the policy interventions above and encourage increased pro-environmental behaviour. This is discussed in light of who participants trusted and the role they envisage for both government and business. These findings discuss overall opinions as there were no discernible differences to report amongst the different segments.

Trust

6.26   There was a widespread lack of trust in the government, local authorities and big business in regard to their motives in helping the public change to more pro-environmental behaviour.

6.27   Many participants were unclear, for instance, if there were deeper, political motivations at work relating to a need to reduce to Britain's dependency on fossil fuels (rather than 'saving the planet').

6.28   Many people (across all segments) were suspicious of local authorities and government acting 'green'. One suspicion is that the green debate is allowing increased taxation by playing on the public's guilt:

"I would want confirmation from the government that they aren't going to tax you eventually on who has a wind turbine and who has a solar panel",
(Consumers with Conscience, Female, Halifax)

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[84] Energy Saving Trust (2007). *Green Barometer. Measuring environmental attitude.*

Another suspicion was that local authorities would make money from the green debate in other ways, e.g. the cost of smart meters would likely be recouped through taxes or by providing energy through community micro-generation schemes:

"So how long before the government takes over and becomes the new NPower? It's going to happen. It's human nature", (Basic Contributor, Female, Lichfield)

6.29 Indeed, these findings support previous research that the least trust is placed in the government, business and industry to provide accurate information on environmental issues – the public are more likely to trust university research centres and environmental groups.[85] Moreover, this distrust is fuelling the scepticism over the extent to which global warming is a reality.

6.30 This lack of clarity, in addition to the perceived lack of effort by the government, appears to be having an adverse effect on the public, including the **Greens**. There was a developing – and very strong - backlash against climate change and the need to modify individual behaviour when people in power were not thought to be doing the same:

"It is time the government did it and led by example" and *"It is do as I say and not as I do. You save the money, you people, for us so we can carry on"*, (Greens, Female, Dorking & Halifax)

"They [the politicians] *cycle with their cars behind them"*, (Green, Female, Dorking)

6.31 Businesses and other public figures were also cited as poor examples of sustainable behaviour, particularly in relation to heavily illuminated buildings at night or the believed hypocrisy surrounding visits abroad by key environmental figures/politicians:

"It would be nice to see local businesses doing their bit which would be a big incentive for domestic households", (Green, Male, Dorking)

6.32 Scientists were also seen as untrustworthy. This was because participants had either heard of an incident where a scientist had been paid by lobbyists to report pre-determined findings for oil companies for instance (e.g. climate change is not happening), or where they were seen to hold contradictory views on different television programmes and films.

6.33 It appeared that participants were only willing to trust independent bodies (definitely not salesmen for instance), although they could not name any at the time:

"There is more chance of you trusting them if they haven't got a vested interest in its success", (Consumers with Conscience, Female, Dorking)

"Somebody unbiased and independent, not somebody trying to promote their own project", (Wastage Focused, Male, Halifax)

6.34 Participants seemed generally scathing about celebrity 'endorsements of a green lifestyle' preferring instead to rely on recommendations from family, friends and acquaintances (even such as those met through focus groups).

Compensations & encouragements

6.35 It was felt that the government should offer incentives rather than initiate more taxes. Moreover, it was felt that taxes should be *reduced* for pro-environmental behaviour (similar to the new initiatives in the 2007 budget to waive tax on surplus energy sold back to the grid through domestic micro-generation), e.g. energy saving products should be free from VAT

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[85] Department of Trade and Industry (2006). *Energy – its impact on the environment and society*.

charges:

> *"We should be encouraged into doing it not forced",*
> (Consumers with Conscience, Male, Halifax)

6.36   Some individuals suggested that they didn't mind paying 'green taxes' so long as the money went to green causes. There was widespread condemnation (particularly by some **Greens**) of the new extra levy on airplane fuel and prospective road tax, when it wasn't being spent on environmental issues:

> "*I have got no problem paying taxes so long as there is a flip side to it. For example, by giving pensioners energy saving light bulbs with the money raised. But it doesn't happen does it? All it is, is just another form of tax*", (Green, Male, Dorking)

6.37   There were mixed feelings about offering council tax rebates (advocated by "I will if you will"[86]) for more sustainable households, e.g. ones that install energy efficiency measures. Some individuals were keen but others viewed this sceptically, believing that local authorities would find another way to recoup the money:

> *"Everybody in this country would probably do it, if they knocked something off our rates",*
> (Wastage Focused, Male, Halifax)

> *"All these schemes seem to me to be a way of either generating tax or profit",*
> (Consumers with Conscience, Male, Halifax)

> *"So you can pay £500 for that* [energy performance certificates for homes] *so then they can give you a rebate back on it",* (Wastage Focused, Male, Dorking)

This fits research by the DTI that whilst rebates can be motivational, they can encourage the public to think that the government is more concerned with raising revenue than encouraging pro-environmental behaviour.[87]

6.38   Grant schemes were widely reported as the biggest driver to encourage the installation of insulation or micro-generation. Simultaneously, there was widespread feeling that participants were not as aware of existing grant schemes as they might be.

6.39   There were contradictory findings in regard to the amount of information participants wanted to receive regarding what they could do to effect change. On the one hand, participants claimed to resent being told what to do all the time:

> *"Sometimes the environment can be hammered down your throat, on a guilt thing",*
> (Green, Male, Dorking)

On the other, participants were unaware of key environmental issues and genuinely wanted to know what they could do (particularly after a discussion with their peers where they became more engaged and enthusiastic). Often these were the same people.

6.40   It appears, therefore, that it may be the *type* of information that is key. *Every* group wanted to know more information about cost-specific savings that could be made through reduced energy consumption measures. This concurs with current research that states information must be targeted and specific for it to be effective.[88]

6.41   National advertising campaigns were referenced as being an effective means of communicating information, particularly the current 'recycle now' campaign, although again, participants were not keen on the use of celebrity endorsements.

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[86] Sustainable Consumption Roundtable (2006). *I will if you will. Towards sustainable consumption.*

[87] Department of Trade and Industry (2006). *Energy – its impact on the environment and society.*

[88] Logica CMG (no date). *Energy efficiency and the consumer – a European survey.*

6.42   Above all, participants wanted <u>to receive reliable, consistent information</u> about the current environmental situation and what they should and could be doing to save money (and in turn energy):

"It's not one person who should be telling you, but everybody should be saying the same message... the scientists, government, council", (Long-Term Restricted, Female, Lichfield)

6.43   Participants want <u>increased evidence on the effectiveness of current technologies</u> (particularly in regard to domestic micro-generation) and demonstration projects that they work (which would increase familiarity and encourage them to do new things themselves)

"I would want proof. The government categorically saying they reduce energy consumption", (Wastage Focused, Male, Halifax)

6.44   <u>Individuals cited the tone of communications as highly negative</u>. It was often stated that the public always heard negative stories about impending environmental disaster but rarely heard success stories, e.g. details on the new wind farm in the North Sea.

6.45   Nearly all groups prioritised <u>the importance of teaching schoolchildren</u> about energy and the environment.   However, when pressed most of the parents admitted (particularly Basic Contributors and Long-Term Restricted) that they do not teach their *own* children about pro-environmental behaviour. In some cases, it was felt that this was a means for them to evade their own responsibilities by placing the need for action with the next generation.

6.46   There were several calls for <u>manufacturers and retailers to modify existing products</u> (and create new ones) to facilitate reduced energy consumption (such as building smart meters into electrical appliances):

"You need to have a switch by your front door which you just flick when you leave, which turns all the non-essential appliances off... like how the key card works in a hotel", (Basic Contributor, Male, Exeter)

6.47   However, <u>again the evidence here (in regard to the manufacturers and retailers role) is contradictory</u>. Many participants expressed outrage that modern products weren't more efficient and believed that it was the responsibility of manufacturers to make them so. At the same time (and sometimes even the same people) want the right to choose which products they can purchase and don't like the idea that retailers are editing choice.

6.48   Some participants suggested that <u>increased day-to-day communication between themselves and the energy suppliers would be beneficial</u>. Indeed, the relationship could be reciprocal (it is here that energy companies think smart meters would play a vital role).

7 Conclusions and recommendations

7.1 This final section brings together the findings from the focus groups and audits into clear conclusions and offers recommendations to Defra as a result.

Overview

7.2 At the project outset, it was expected that recent shifts in public awareness of environmental issues (in part due to the proliferation of media coverage) would have resulted in profound changes in the public's understanding and acceptance of climate change/global warming.

7.3 As a result, these research findings are somewhat depressing in their impressions of the participants in regard to energy consumption, namely:

- They were highly cost-conscious (this was the strongest behavioural driver for most participants –many did not consider energy or environmental issues);

- They were distrustful of government, local authorities and big business in general and in particular of their motives in helping the public to change their behaviour to 'save the planet'. They believed the motivations more likely to be political and economic - to reduce dependency on fossil fuels or increase taxes; and

- They were cynical and confused about environmental issues and unwilling to 'take on' climate change, partly due to a perceived lack of effort by the government as well as others in the public eye. In the focus groups, there were signs of a public backlash against climate change (even amongst the Greens).

7.4 It is clear that it has taken thirty years of subsidised insulation programmes across the country, for participants to become familiar with - and receptive to - the idea of insulation. Even then, they did not associate insulation with energy consumption, 60% of homes with cavities in the UK still need cavity wall insulation[89] and some people still feel unfamiliar with the technological 'know how' involved. With this in mind, it would have been highly unlikely that the bulk of the British public would be installing photovoltaic cells on their own roofs or switching to green energy tariffs anytime soon. It appears that the day when solar panels become the 'norm' and are accepted into British daily life is some way away.

7.5 The reality is that there is no 'silver bullet'. The most effective policies to combat global warming already exist (in terms of insulation etc) and this research merely advocates a continuation of these historical initiatives (albeit at a far increasing rate than ever before). It may not be the most interesting answer to climate change, but it will certainly be the most effective.

Defra's environmental segmentation model

7.6 It has been possible to segment people according to pro-environmental behaviours – these six groups, identified by Defra's previous work, do appear to exist in the general population. This research is unable to determine the size of these segments but it can provide observations, e.g. whilst most of the **Greens** exhibited highly sustainable tendencies, not very many had considered/explored the idea of micro-generation, suggesting that the core group of 'deep greens' in the UK is very small indeed.

7.7 Differences in attitudes towards energy were not as pronounced for each segment as was expected, although the groups definitely demonstrated a hierarchy of pro-environmental behaviour (starting with the Greens and gradually reducing to the Long-Term Restricted). Figure 12 (below) demonstrates the differences in understanding, assumptions, aspirations and expectations in relation to each behavioural goal by segment.

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[89] DTI (2006). *Energy – its impact on the environment and society*.

Figure 12: Summary of preferences for each of the five behaviour goals by segment
Source: Brook Lyndhurst

Segment	Buying/installing energy efficient products/appliances	Better energy management and usage in the home	Installing insulation products	Installing domestic micro-generation	Switching to green energy tariffs
Greens	Acceptable goal. Feasible goal. Willing to act.	Acceptable goal. Feasible goal. Willing to act.	Acceptable goal. Feasible goal. Willing to act for cost and environmental reasons.	Acceptable goal. Feasible goal, but need more information, support and grants. Willing to act.	Acceptable goal, to some. Feasible goal, to some. Possibly willing to act.
	More able to determine an energy efficient product. Assume modern appliances more efficient. Knowledge & use of energy ratings scheme (energy is a purchasing decision). Thought energy rating scheme should be expanded to other products.	Highly accessible goal – many are doing already.	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes.	Very open to idea in principle (most out of all the groups), but intangible concept. Most knowledgeable segment but still could know lots more. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Seemed more normal behaviour to them.	Most likely to have heard of them. Some think it's their responsibility to source them but still not very likely. Some likely to pay more but on the whole, no.
Consumers with a Conscience	Acceptable goal. Feasible goal. Willing to act if choosing equal products.	Acceptable goal. Feasible goal. Willing to act.	Acceptable goal. Feasible goal. Willing to act for cost and environmental reasons.	Acceptable goal. Feasible goal, but need more information, support and grants. Willing to act.	Unacceptable goal. Unfeasible goal. Unwilling to act.
	Unable to determine an energy efficient product. Assume modern appliances more efficient. Not very keen on energy saving light bulbs. Knowledge of energy ratings scheme. Liked idea of ratings schemes and would use in future.	Highly accessible goal – keen to save costs (and a little environmental motivation).	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes. Smaller, practical measures seemed too much hassle.	Open to idea in principle, but intangible concept. Not very knowledgeable. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Broadly keener than some of the other groups.	Not really heard of them. Don't really understand the concept. Generally supportive of principle. Do not consider it their responsibility to source them. Totally unwilling to pay more.
Wastage Focused	Acceptable goal. Feasible goal. Willing to act, if initial costs do not outweigh savings on running costs.	Acceptable goal. Feasible goal. Willing to act – already are.	Acceptable goal. Feasible goal. Willing to act for cost reasons but depends on payback period.	Acceptable goal. Feasible goal. Willing to act.	Unacceptable goal. Unfeasible goal. Unwilling to act.
	Unable to determine an energy efficient product. Assume modern appliances more efficient. Not very keen on energy saving light bulbs. Knowledge of energy ratings scheme. Cost a huge driver when purchasing products. Liked idea of ratings schemes and would use in future.	Currently heavily restrict energy consumption to save cost. Highly favourable goal.	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes. Smaller, practical measures appealed.	Open to idea in principle, but intangible concept. Not very knowledgeable. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Perception that payback is too long for remaining lifetime.	Not really heard of them. Don't really understand the concept. Generally supportive of principle but distrustful. Do not consider it their responsibility to source them. Totally unwilling to pay more.

Figure 12 (continued): Summary of preferences for each of the five behaviour goals by segment
Source: Brook Lyndhurst

Segment	Buying/installing energy efficient products/appliances	Better energy management and usage in the home	Installing insulation products	Installing domestic micro-generation	Switching to green energy tariffs
Currently Constrained	Acceptable goal. Feasible goal. Willing to act, in future.	Acceptable goal. Feasible goal. Some willing to act.	Acceptable goal. Feasible goal. Willing to act, in future.	Acceptable goal, to some. Not a feasible goal at present. Unwilling to act.	Unacceptable goal. Unfeasible goal. Unwilling to act.
	Unable to determine an energy efficient product. Assume modern appliances more efficient. Not very keen on energy saving light bulbs. Purchase fewer products under scheme. Liked idea of ratings schemes and would use in future.	Quite knowledgeable. Some feel doing enough already, others want more information. Lack responsibility because don't tend to pay own bills yet.	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes. Supportive but unable to act themselves but keen to install insulation measures in future.	Open to idea in principle, but intangible concept. Not very knowledgeable. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Have not really considered it before but claim they will in the future.	Not really heard of them. Don't really understand the concept. Generally supportive of principle. Do not consider it their responsibility to source them. Totally unwilling to pay more.
Basic Contributors	Acceptable goal. Feasible goal. Willing to act, but quite a way down list.	Acceptable goal. Feasible goal. Some willing to act, but must play on cost benefits.	Acceptable goal. Feasible goal. Some willing to act, but on the whole no.	Acceptable goal, to some. Unfeasible goal. Unwilling to act - would have to be done for them.	Unacceptable goal. Unfeasible goal. Unwilling to act.
	Unable to determine an energy efficient product. Assume modern appliances more efficient. Aspire to own appliances that other groups take for granted. Not very keen on energy saving light bulbs. Limited knowledge of energy ratings scheme. Cost a huge driver when purchasing products. Liked idea of ratings schemes - would like to use in future.	Least willing to engage because of hassle but may be persuaded on cost grounds.	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes. Smaller, practical measures seemed too much hassle.	Open to idea in principle, but intangible concept. Not very knowledgeable. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Passively willing, i.e. want someone else to do it for them – won't seek it out themselves.	Not really heard of them. Don't really understand the concept. Less likely to see value in them. Do not consider it their responsibility to source them. Totally unwilling to pay more. Distrustful over the principle.
Long-term Restricted	Acceptable goal. Feasible goal. Willing to act, within cost constraints.	Acceptable goal. Feasible goal. Willing to act – already are.	Acceptable goal. Feasible goal. Impossible for them to act unless it is done for them.	Acceptable goal, to some. Unfeasible goal. Unwilling to act – would have to be done for them.	Unacceptable goal. Unfeasible goal. Unwilling to act.
	Unable to determine an energy efficient product. Assume modern appliances more efficient. Aspire to own appliances that other groups take for granted. Not very keen on energy saving light bulbs. Limited knowledge of energy ratings scheme. Cost a huge driver when purchasing products. Liked idea of ratings schemes - would like to use in future.	Currently heavily restrict energy consumption to save cost. Highly favourable goal.	Most accessible goal of all five. Long-term investment a draw-back but some have taken advantage of past grant schemes. Constrained by current situation – unable to see a time when that would not be the case.	Open to idea in principle, but intangible concept. Not very knowledgeable. Unaware of grant schemes or where to get information. Open to community schemes and energy companies using their roof. Passively willing, i.e. want someone else to do it for them – won't seek it out themselves.	Not really heard of them. Don't really understand the concept. Less likely to see value in them. Do not consider it their responsibility to source them. Totally unwilling to pay more. Distrustful over the principle.

The research process

7.8 The research process highlighted the positive impact focus groups and audits can have on people's attitudes to energy consumption; people are much more likely to engage in a process (and change their behaviour) if this is done in a trusted group setting with their peers (more often than not, individuals act on the personal recommendations of friends, family and acquaintances).

7.9 Group settings allowed participants the opportunity to debunk myths, complain about common gripes and discuss the merits of pro-environmental behaviour (with 'like-minded' people) without feeling intimidated. Both the focus groups and audits showed that people could be dissuaded from negative opinions on issues like energy saving light bulbs and cavity wall insulation by participating in this process.

7.10 Moreover, the process worked so well because the groups were local and tailored individually to their own needs and homes (through the audits). This chimes with current thinking (such as the recent IPPR report on energy[90] or the Climate Group's "We're in this Together" campaign) that energy audits can have a dramatic impact upon public behaviour.

The current 'state of play'

7.11 Attitudes towards energy and the environment are slowly changing (people's awareness of environmental issues is certainly increasing) but this is not translating into effective behaviour change in the home.

7.12 On the whole, participants did not think that 'being green is normal' (particularly if 'being green' is owning your own wind turbine and signing up to a green energy tariff). Being 'green' is still perceived as a niche activity (except, unsurprisingly, by some of the 'greens').

7.13 Participants were confused and sceptical about environmental issues, in particular, whether:

- Climate change is actually man-made or part of a naturally occurring cycle[91];

- Individuals in the UK can really have an impact on a global problem; and

- The government is using the green debate as a ploy to raise taxes.

7.14 Participants did not recognise the links between their lifestyle, energy consumption and the environment, exemplified by the following issues:

- They are mostly unaware of how much energy they use on a daily basis (and how much energy different appliances consume) and mostly take unlimited access to it for granted;

- Few people think about energy issues that often (with the possible exception of some of the Greens) and, consequently, don't know from which sources UK energy is derived;

- Many people don't tend to know how much they spend on energy on a monthly basis (Wastage Focused and Long-Term Restricted are a notable exception);

- Consumers tend to assume all modern appliances are 'good' (consuming low amounts of energy), e.g. plasma screen televisions;

- Consumers often aspire to own high-energy consuming appliances in addition to simply owning *more* appliances (many which other groups take for granted such as washing machines or dishwashers);

- Energy consumption rarely features on a person's purchase decision list (environmental and social factors are seldom taken into account)

- Very few people are prepared to pay more for anything 'green'; and

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[90] Retallack, S, Lawrence, T and Lockwood, M (2007). Positive Energy: Harnessing People Power to Prevent Climate Change

[91] It may be likely that the Channel 4 documentary had some influence here.

- Cost is by far the biggest driver for reducing energy consumption (although the public tend to only consider initial outlay costs rather than longer term 'whole-life' costs, e.g. 'how much is this washing machine today?' rather than 'how much will this washing machine cost to run for the next few years?').

7.15 **Recommendation 1:** To avoid confusion and gain trust, any national and local climate change/global warming/environmental messages must be transmitted with the same information, and if possible supported by independent organisations. There *still* appears to be a need for more information acknowledging the existence of climate change/global warming with a positive tone.

7.16 **Recommendation 2:** The government (as well as local authorities) must dramatically alter the perception commonly held by members of the public in regard to their perceived indifference to environmental issues:

- Regular feedback should be provided by government/councils on positive environmental decisions and outcomes; and

- Politicians/ key figures must 'walk the walk' as well as 'talk the talk', e.g. turning building lights off at night, installing micro-generation on their own buildings first etc.

Carrots vs. sticks

7.17 Participants were sceptical about the use of taxation to change behaviour, preferring incentives rather than taxes (although if green taxes are used the consensus was that they should be safeguarded solely for green issues). Grant schemes appeared to be the most positive incentives for encouraging measures to reduce energy consumption (by all segments).

7.18 There were mixed feelings about the use of council tax rebates to encourage pro-environmental behaviour. Whilst some were keen on the idea, others were sceptical that revenue wouldn't be raised through other means (such as energy performance certificates for instance). There is a danger, therefore, that using council tax rebates to encourage pro-environmental behaviour would reinforce the view that the government is simply using green issues to raise taxes.

7.19 **Recommendation 3:** Lower taxes on pro-environmental behaviour and products, e.g. reduce VAT on energy saving light bulbs.

7.20 **Recommendation 4:** Ring-fence green taxes for green issues and ensure this is visible (which will help the public to trust that the government is not using the green debate as a means of raising revenue but in order to 'save the planet').

7.21 **Recommendation 5:** Wherever possible, grants should be used to encourage measures to reduce energy consumption, e.g. for installing insulation or micro-generation. In all cases, these must be advertised widely and clearly (by energy suppliers).

The five behavioural goals

7.22 The research findings advocate (as indeed do others) that a mixture of regulation *and* individual behaviour change is best placed (and indeed necessary) to reduce domestic energy consumption.

7.23 All five goals have been considered in terms of their ability to reduce domestic energy consumption (and therefore carbon emissions) against the potential cost of doing so. This 'bangs per buck' criterion has then been considered against the public responses identified throughout the research.

7.24 To this end, the findings advocate that Defra would be best placed to prioritise the goals in the following order:

- Priority 1 (joint) – better energy management and usage in the home;
- Priority 1 (joint) – install insulation products;
- Priority 3 – buy/install energy efficient products/appliances;
- Priority 4 – install domestic micro-generation; and
- Priority 5 (if at all) – switch to a green energy tariff.

Priority 1: Better energy management and usage in the home

7.25 This goal is highly accessible to the majority of participants. **Wastage Focused** and **Long-Term Restricted** participants already appeared to be doing this for cost reasons and **Greens** for environmental. **Basic Contributors** are less willing (of all the groups) but may be persuaded on cost grounds. Moreover it is one of the few goals that the **Currently Constrained** are able to participate in.

7.26 It offers an inexpensive method of reducing energy consumption for a high return (this goal is one of the most effective in reducing domestic energy consumption) and should therefore be advocated.

7.27 Based upon the experience of the focus groups and energy audits, people respond well when receiving this information in informal, intimate settings in a group dynamic which allows them to explore issues, debunk myths and participate socially. To this end, this goal would be least well served through mass advertising.

7.28 **Recommendation 6:** Use existing community groups and social networks to introduce the idea of sustainable energy consumption (as per focus group), e.g. energy 'Eco-Teams'.

Priority 2: Install insulation products

7.29 Although this goal involves installing reasonably expensive insulation measures, this offers the most effective returns of all five behaviour goals in terms of carbon savings and is very cost-effective (in terms of 'bangs per buck').

7.30 After thirty years of grant schemes, most (if not all) participants were familiar with insulation products and had undertaken several measures themselves with favourable outcomes. To this end, it was the most accessible goal for participants, the only drawback being the need for long-term investment as well as doubts about the payback period (which can be addressed by introducing subsidised insulation schemes similar to those currently being undertaken by the GLA or Kirklees Council).

7.31 The **Currently Constrained** and **Long-Term Restricted** are unable to personally effect change of this nature because they live in homes managed by landlords – either in social housing (where many of the 'quick wins' have already been identified and are currently being undertaken) or in the private sector.

7.32 **Recommendation 7:** Increase availability of grant schemes for insulation measures. In areas where local residents are more sceptical of local authorities' motives behind becoming involved in such a scheme, ensure that grants are perceived to be independent of all local authority involvement.

7.33 **Recommendation 8**: Priority must be placed on homeowners and private landlords (rather than social housing landlords).

Priority 3: Buy/install energy efficient products/appliances

7.34 The energy ratings scheme was universally considered a good concept; it was the only means participants had to identify an energy efficient product (**Basic Contributors, Long-Term Restricted** and **Currently Constrained** were least likely to recognise the scheme).

7.35   Participants rarely receive energy consumption information at point of sale (which would undoubtedly enhance the energy ratings scheme and overall message of energy efficiency). However, participants also state that they are unlikely to trust sales people (due to lack of impartiality). To this end, whilst training of sales people may be a valid recommendation, care would have to be taken to ensure that the same level of environmental advice was offered on *all* products impartially - which may be prohibitively costly.

7.36   In the past decade, regulation has been highly effective in increasing the market share of A-rated appliances through the energy ratings scheme. Moreover, there is an expectation that manufacturers should only be providing 'good' energy efficient appliances (providing this does not result in mass 'choice editing' where they are keen to retain some choice over the types of products they purchase).

7.37   Participants generally had an unfavourable impression of energy saving light bulbs, in part due to poor recommendations of friends, family and media. However, focus groups and the energy audits had a big impact on changing people's perceptions and stated behaviours.

7.38   **Recommendation 9:** Implement legislation to expand the existing labeling scheme to include other electrical appliances, e.g. computers, televisions.

7.39   **Recommendation 10:** To highlight (at point of sale) the average running costs for each product (as part of the labeling scheme) over the course of one year.

7.40   **Recommendation 11**: Tackle poor perceptions of energy saving light bulbs through focus groups and audits.[92]

7.41   **Recommendation 12:** Information must be much more specific. The public want evidence on the effectiveness of current technologies, where to access grants (and eligibility) and most importantly, information on cost-specific savings resulting from more sustainable energy consumption measures.

Priority 4: Install domestic micro-generation

7.42   Britain has a long way to go to reach its renewable energy targets and even more so in regard to domestic micro-generation.

7.43   Most participants were very open to the idea of micro-generation in principle. **Greens, Consumers with Conscience** and **Currently Constrained** were most keen but **Basic Contributors** and **Long-Term Restricted** were 'passively willing' (i.e. supportive but someone else would have to install it for them).

7.44   However, it still remains an intangible concept for the majority of participants, i.e. they were unaware of different types of micro-generation, where to go to install it, how much it costs, payback periods and who to trust for reliable information.

7.45   The initial cost and the long payback period is the single biggest obstacle (particularly for **Wastage Focused** individuals who feel they are less likely to recoup the costs). Information on the technology and available grants was perceived to be the single most important driver for this goal (in the same way that insulation has been tackled by local authorities over the past thirty years). Recommendation 12 is as valid for micro-generation as it is of insulation.

7.46   However, the 'bangs per buck' are not so advantageous for this goal (as opposed to insulation) where the public still has a long way to go before they accept micro-generation as the 'norm' (many people associate it with wide open countryside, the coast or southern

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[92] Whilst this is not a viable possibility for a policy recommendation it is worth bearing in mind for future research methodologies or public consultation.

Europe)[93]. Moreover, many have a fear of the unknown with regard to new technologies and often unfounded fears regarding negative aesthetic, noise and wildlife impacts.

7.47 Three suggested areas of action were identified across the board as acceptable uses of micro-generation to participants. Moreover, it was suggested that these were necessary pre-requisites before they would even consider domestic micro-generation themselves (i.e. these three things would act as demonstration projects and increase familiarity), namely:

- Community micro-generation schemes (run by independent bodies not local authorities);

- Installation of micro-generation into all new builds; and

- Use of micro-generation in government and local authority buildings;

7.48 Many participants were highly positive about energy companies paying them to install micro-generation on their roof, but in most cases they did not understand that they would still have to pay their own energy bills (working under the misapprehension that the renewable energy sourced on their roof would be theirs to use free of charge). It is difficult to know, therefore, if they would really be willing to do this when they currently perceive that changing energy suppliers is 'too much hassle' (which undoubtedly takes far less effort than installing photo voltaic cells on their roof).

7.49 **Recommendation 12 (again):** Information must be much more specific. The public want evidence on the effectiveness of current technologies, where to access grants (and eligibility) and most importantly, information on cost-specific savings resulting from more sustainable energy consumption measures.

7.50 **Recommendation 13:** Signpost the public to information on both general and specific queries on domestic micro-generation (ideally an independent body).

7.51 **Recommendation 14:** Implement community micro-generation schemes.

7.52 **Recommendation 15:** Install micro-generation on all new builds (as much as possible) as well as government and local authority buildings (to act as demonstration projects before domestic micro-generation is likely to be fully trusted).

Priority 5: Switch to a green energy tariff (GET)

7.53 This was the least favourite goal among participants – mirrored by the slow take up in the wider population. Very few people had heard of GETs nor do the vast majority understand how they work. Some participants were supportive of the concept (although **Basic Contributors** and **Long-Term Restricted** were less likely to see the value).

7.54 Most participants did not think it was their responsibility to source GETs (except *some* **Greens**) and most people were unwilling to pay more for it. Moreover, there was some distrust behind the concept and many people were unwilling to change energy tariffs due to the perceived hassle.

7.55 **Recommendation 16:** Do not market GETs to consumers but focus efforts on supplying green energy through energy companies and the Renewables Obligation Commitment (ROC).

7.56 Figure 13 (below) summarises these recommendations by each of the five behaviour goals.

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[93] The situation does not appear to have changed much since Brook Lyndhurst's recommendations for London Renewables in 2003. This advocated an evolutionary approach to encourage 'take up' of micro-generation where there was much goodwill but low demand.

Interventions

7.57   Smart meters may help to reduce energy consumption in UK homes by 3-15%[94] and many participants were keen to have them in their own homes to increase the visibility of possible cost and energy savings. Some thought they may be an intrusion and may not facilitate behaviour change after the novelty wears off. Most were unwilling to pay for the meter themselves nor their installation.

7.58   **Recommendation 17:** Dependent upon the findings from the current trials, explore the installation of smart meters in UK homes.

7.59   Differential tariffs can help to reduce the energy curve as well as carbon emissions and may possibly make people more aware of energy in the process (if combined with smart meters they can reduce costs even further). Most participants thought these were a good idea – due to cost savings rather than environmental concerns (**Wastage Focused** and **Long-Term Restricted** in particular) - although few have heard of them. **Basic Contributors** were less keen on the idea as they thought it incompatible with their lifestyle and appeared more unwilling to make changes (some individuals are distrustful of whether or not these tariffs would actually be cheaper).

7.60   **Recommendation 18:** Advertise differential tariffs more widely focusing on potential cost savings, lack of 'hassle' in changing providers and reasons they are cheaper (so the public is not led to believe there is 'a catch').

7.61   Energy performance certificates were not well received (except by **Currently Constrained** and **Greens**). It was seen as an infringement of civil liberties and it was resented because of the cost implications and the mandatory element.

7.62   **Recommendation 19:** Manage any potential hostility to HIPs (and EPCs) by emphasising the positive elements and ensuring a smooth transition. If HIPs (and EPCs) are poorly implemented this has the potential to negatively impact upon future schemes (involving both energy and other SCP issues) and increase the current skepticism of environmental cynics.

7.63   Personal carbon allowances (PCA) were the least popular intervention across the entire sample because of its perceived threat to civil liberties, the perception that it would be impossible to administrate, police and operate such a scheme and that it will negatively impact upon the disadvantaged.

7.64   **Recommendation 20:** The public did not appear ready for PCAs at the current time. Further research is needed to explore the concerns raised in this research (a major education/public engagement/consultation would be necessary before PCAs could feasibly be introduced).

Future research recommendations

7.65   In light of these findings, we would advocate the following research threads for future Defra work:

- Research into public expectations of access to energy. Do people think about energy supplies and is there an expectation that their access in the future should continue as per the current scenario, i.e. be limitless (and cheap)?

- Examination of the underlying motivations of Currently Constrained individuals. It was noted that this segment are the most transient and likely to become either Basic Contributors or Greens/Consumers with a Conscience. Further research may be able to predict which people may fall into which camps (which this research was unable to do);

- Analysis of public reactions to cost-specific savings from more sustainable energy behaviours and consumption. Whilst many individuals declared an interest in understanding cost-specific savings from sustainable energy behaviours, this may have

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[94] Green Alliance (2007)

been due to a perception that savings are likely to be higher than they actually are. Are individuals really likely to turn their lights off to save just a few pounds? Further clarification is also needed on how far this is the case for different segments of the population;

- Research into the likelihood of increased demand for domestic micro-generation after local demonstration projects. The majority of participants stated they would be more willing to install domestic micro-generation after increased contact and familiarity with it through local community schemes or by witnessing it on new-builds, local government buildings or neighbours' houses. Further research may be advisable to confirm if this is indeed the case, before the government pursues this course of action; and

- Identification of instances where personal carbon allowances and green energy tariffs are more acceptable to the general public (if policy makers are determined to proceed with this initiative). This may be most appropriate in a focus group setting using various 'scenarios'.

Figure 13: Recommendations by each behavioural goal
Source: Brook Lyndhurst

Behaviour goal	Overall priority	Value for money	Public response	Recommendations	Requires segmentation?
Better energy use & management in home	1	One of most effective (lights and appliances)	Highly accessible to all.	Use existing community groups and social networks to introduce idea of sustainable energy consumption (as per focus group), e.g. an eco-weightwatchers.	Yes, through trusted networks
Installing insulation products	1	Highest impact in carbon emissions. Plenty of scope, i.e. many houses still in need.	Highly accessible to all segments.	Increase availability of grant schemes for insulation measures. In areas where it would be feasible, roll-out similar schemes to those currently being undertaken by the GLA or Kirklees Council. Increase availability of grant schemes for insulation measures. In areas where local residents are more sceptical of local authorities' motives behind becoming involved in such a scheme, ensure that grants are perceived to be independent of all local authority involvement. Priority must be placed on homeowners and private landlords.	Yes, through trusted networks
Buying/installing energy efficient products/appliances	3	Can be effective and has traction in public consciousness. Expensive to bring in legislation and expand schemes.	Highly accessible to all segments.	Implement national legislation to expand the existing scheme to include other electrical appliances and to incorporate running costs over the course of one year. Manufacturers should design more energy efficient measures increasingly into products (and not just those currently under the energy ratings scheme). Tackle poor perceptions of energy saving light bulbs through focus groups and audits. Information must be much more specific. The public want evidence on the effectiveness of current technologies, where to access grants (and eligibility) and most importantly, information on cost-specific savings resulting from more sustainable energy consumption measures.	No segmentation required
Priorities 1-3 are far easier to achieve, offer the most 'bangs per buck' and are much more amenable to the general public					
Installing domestic micro-generation	4	Very beneficial for environment but very expensive (and a long way to go before public accepts it as normal)	Open to idea but very intangible. Need more information.	Information must be much more specific. The public want evidence on the effectiveness of current technologies, where to access grants (and eligibility) and most importantly, information on cost-specific savings resulting from more sustainable energy consumption measures. Signpost the public to information on both general and specific queries on domestic micro-generation (ideally an independent body). Implement community micro-generation schemes. Install micro-generation on all new builds (as much as possible) and government as well as local authority buildings (to act as demonstration projects before domestic micro-generation is likely to be fully trusted).	No segmentation required (except that determined by physical location)
Switching to a green energy tariff	5	Inexpensive to advertise/market but would need mass participation to reach high threshold needed	Confusion/ distrust Unwilling to pay more.	Do not market GETs to consumers but focus efforts on supplying green energy through energy companies and the Renewables Obligation Commitment (ROC).	No segmentation required

Annex A: Segmentation model

	Green Activists	Consumer with a conscience	Wastage focused	Basic contributors	Currently constrained	Long-term restricted
Age	30+	Mixed	50+	Mixed	Under 30	Mixed
Gender	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
SEG	BC1	BC1	C1/C2	C1/C2	ABC1	C2DE
Tenure	All Home-owners	All home-owners	All home-owners	All home-owners	Private renters/live with parents/ shared housing	Renters – half from council/ housing association
Attitudes to environ-ment	Very green	A bit green	Cost-focused, not really green	Not green at all	A bit green	Not green at all – cost strong driver
Perceptions of respons-ibility	Feel individually responsible for their own impact on environ-ment	Feel individually responsible but personal needs are more important	Sense of personal respon-sibility	Sceptical about the relative impact consumers have vs. business & government	Sense of personal responsibility	Little sense of personal respons-ibility
Future focus	Very concerned about long term global future	Some concern about long term global future	Lack of future focus – very tradition-alist	Do not think about long term future of the planet	Currently focused in the present	Very focused in the present
Ability to take action	No barriers	Personal needs conflict with environmental aspirations	Lack of broader environ-mental awareness limits actions. Cost is a perceived barrier	Scepticism; perceived lack of opportunity to make a difference	Current circum-stances are barrier to taking action	Time and money are constraints

Annex B: Recruitment questionnaire

1 Do you live in…..?

Dorking, Halifax, Exeter, Warwick	If no, thank and close

2 Do you, or any of your close friends or family members work in these professions?

Marketing	1	If yes, thank and close
Market research	2	If yes, thank and close
Journalism	3	If yes, thank and close
Advertising	4	If yes, thank and close
Publishing	5	If yes, thank and close
Public Relations/Media	6	If yes, thank and close
Energy sector	7	If yes, thank and close
Environmental agencies/ organisations/charities	8	If yes, thank and close

3 Are you currently/have you ever received assistance from an energy scheme/programme/initiative?

e.g. Greener Homes Initiative	If yes, thank and close

4 Have you attended a market research discussion in the past 6 months?

Yes	Thank and close
No	Continue

5 Which of the following sets of statements most reflects your own beliefs? (You may not agree with all the statements in a box exactly, but pick the one which fits closest overall)

• Environmental issues are a day-to-day concern for me • I want to save energy to reduce my climate change impact	1	**GA**
• I am concerned about the environment and think about it fairly regularly • I'd like to save energy but I need more information to do so	2	**CWC**
• Cost is something that I think about in nearly everything I do • I try to do things as efficiently as possible	3	**WF**
• Although maybe I should, I don't really think about the environment - I've got too many other things to worry about • I feel like there are so many big global issues at the moment for anything I do to make much difference – the answer lies with big business and government	4	**BC**
• I'd like to be able to think about things like saving energy but I'm constrained by my circumstances at the moment • I think climate change is important	5	**CC**
• I'm not really interested in saving energy • Environmentally friendly products are inferior to normal products	6	**LR**

6 How old were you last birthday? Record actual age

Under 20	Thank and close
20-29 years	**Not allowed in GA or WF groups** **In CC, all must be in this age group** **No more than 3 in CWC, BC and LR**
30-39 years	**Not allowed in WF or CC groups** **No more than 3 in GA, CWC, BC and LR**
40-49 years	**Not allowed in WF or CC groups** **No more than 3 in GA, CWC, BC and LR**
50-59 years	**Not allowed in CC** **No more than 3 in GA, CWC, BC and LR** **Any amount allowed in WF**
60-65 years	**Not allowed in CC** **No more than 3 in GA, CWC, BC and LR** **Any amount allowed in WF**
65+	Thank and close

GA	**= 30+**	**CWC**	**= All ages but no more than 3 from each age group**
WF	**= 50+**	**BC**	**= All ages but no more than 3 from each age group**
CC	**= Under 30**	**LR**	**= All ages but no more than 3 from each age group**

7 Which of the following best describes your household?

Owner occupied: own it outright	1	**Not allowed in CC or LR**
Owner occupied: with mortgage/loan	2	**Not allowed in CC or LR**
Live with parents/in shared accommodation	3	**Only allowed in CC**
Rented from private landlord/letting agency/other	4	**Only allowed in CC and LR** **(maximum of 5 in LR)**
Rented from council/Local Authority/Housing Association/Registered Social Landlord	5	**Only allowed in LR – at least 5**

GA	**= Home owners**
CWC	**= Home owners**
WF	**= Home owners**
BC	**= Home owners**
CC	**= Private renters or live with parents/shared accommodation**
LR	**= Renters/at least 5 from social housing**

8 What is your gender?

Male	1	**No more than 6 in each group**
Female	2	**No more than 6 in each group**

All groups should be mixed gender.

The recruitment questionnaire also recorded information on ethnic group and social class.

Annex C: Focus group topic guide

Discussion Guide
Defra: Public attitudes to sustainable energy consumption

BROOKLYNDHURST

> **Instructions:** the topic guide is simply that, a *guide* to the conversations but it must be pitched to each segment accordingly.   Remember to record out loud how many people nod or put their hands up (for the tape).

⏱	*Time elapsed (mins)*	*Facilitator notes*
	Part I: Current 'state of play'	
5	**Introduction – 5 minutes** ☐ Introduce Brook Lyndhurst ☐ State working for government – tell them who at end ☐ Explain the need for honesty ☐ One person to talk at once ☐ Healthy debate – no answer is 'right' or 'wrong' ☐ Confidential, but recorded – get permission ☐ Purpose of group – to talk attitudes towards energy ☐ Participants introduce themselves, what they did today and household (who they live with etc)	
15	**General attitudes to energy/aspirations – 10 minutes** ☐ What do you think about when we say the word 'energy'? ☐ What is 'good' and 'bad' energy? ☐ What type of products do you own that use energy? ☐ What products do you aspire to have? ☐ What are you likely to buy in the future?	▪ *Explore* <u>unprompted</u> *attitudes to energy (can determine if people have been segmented correctly and what their attitudes are)* ▪ *Don't dive in too quickly to environmental issues (may miss opportunity to explore how people 'genuinely' use energy in home)* ▪ *Discuss their aspirations to ascertain where people would head undirected without intervention.*
40	**Relationship between lifestyles and energy consumption – 25 minutes** ☐ Split respondents into 3 groups. ☐ Show them an arrow with 'high' written at one end and 'low'' written at the other (marked out on the floor/wall). ☐ Provide respondents with cards showing 'normal' products that consume energy, e.g. 　▪ a light bulb; (rank =1) 　▪ a hairdryer; (7) 　▪ a plasma screen TV; (2)	▪ *Hand out arrows and pictures of appliances*

	▪ a tumble dryer; (4) ▪ a washing machine; (6) ▪ an air conditioning unit; and (3) ▪ a freezer. (5) ☐ Ask each group to place these products on this scale based upon energy consumption over the course of one year (explain – if asked – that we are not taking into account embodied energy). ☐ Ask respondents to explain back to the group why they ranked these products in the way that they did. ☐ Move products into the right order if they aren't already. ☐ Are you surprised by these results? ☐ Is this an accurate picture of energy consumption in your home? ☐ Is there a difference between everyday use vs. one off decisions?	 ▪ *Let them discuss the outcome freely* ▪ *Discuss energy consumption of these products to see if they are able to recognise that their aspirations would be high energy demand* *Let them discuss freely but then prompt them about the difference between habitual energy consumption vs. one-off purchases*
	Appliances and aspirations – 15 minutes ☐ Do you have any ideas about saving energy with these appliances? Do you think about saving energy at all? ☐ When you bought them, what questions did you ask about them? ☐ What do you think is a 'good' energy appliance?	▪ *Let them discuss freely but then prompt about energy saving versions, e.g. light bulbs etc.* ▪ *Don't prompt – want to find out if energy enters purchasing decisions – is cost a more important driver?*
55	☐ Are you familiar with energy rating charts?	▪ ***Hand out energy rating charts*** to show them
65	☐ Break – 10 minutes	

Part II: Policy interventions

Quiz – 5 minutes

Which fuel does Britain rely on the most to make electricity?
- Gas
- Oil
- Nuclear fuel

Out of every 10 units of electricity you use, 4 of them are generated in power stations that run on North Sea gas. These days we get most of the energy the world needs by burning coal, oil and gas. Now Britain's local gas supply under the North Sea is running low and eventually the other fuels will run out too. Before we've used them up, we'll have to find other sources of energy.

Every day up to 70 million barrels of oil are pumped out of the ground. How much longer can we keep supplying this amount?
- 4 years
- 40 years
- 400 years

The World Energy Council think that we can supply oil at the current rate for 40 more years. After that we could use gas, but only at current levels for a further 15 years. Most of us use coal, oil or gas to power our lives. These fuels are called fossil fuels... and because they are non-renewable they will run out. Some people disagree with the 40-year guess, however, and say that there are plenty more fossil fuels left - we just haven't found them yet.

Which of these saves energy?
- A computer screen saver
- Recycling an aluminium can
- A shower

Recycling one aluminium can saves energy, enough energy to run a TV for two hours. A screen saver does not save energy. Short showers use less energy than a bath but still use energy.

How many wind turbines would we need to generate all the electricity Britain uses every day?
- About 25
- About 2,500
- About 250,000

It would take 250,000 wind turbines to power Britain entirely from the wind, but they'd only make enough electricity on a windy day. Today we have only a tiny fraction of this. By using more wind power Britain is aiming to make big cuts in the amount of greenhouse gases we pump into the air. The government hopes that by 2020 we will be able reduce our fossil fuel use and get a fifth of the energy we need from renewable sources.

Setting the scene – 10 minutes	
☐ Scientific research tells us that we're emitting too much carbon dioxide into the atmosphere.	▪ *Let them discuss this openly but try to restrain it to the impacts of our homes on carbon emissions*
☐ It says we must cut our carbon emissions by 60% by the year 2050.	
☐ More than a quarter of all the UK's carbon emissions come from our houses, suggesting we need to conserve energy in the home.	▪ *It may be impossible to get consensus and they may not agree with this, but gently move them on*
☐ Is this something you agree with?	
☐ Do you relate energy use to climate change/global warming?	

80

What are you inclined to do? – 40 minutes	
☐ Show them a large model of an average house and ask them to write on post-it notes what people can do to reduce energy consumption in the home (ask them to stick them onto the house, e.g. solar power stick on roof)	▪ ***Show them picture of house*** ▪ *Initially this is unprompted to determine what stage each group is at in terms of energy attitudes*
☐ When each behavioural goal is identified, spend time discussing it, e.g. could you see yourself doing this? What help would you need to do this? Which ones are more accessible? What type of information would you need? Who would you trust to give you this information? E.g. biomass, solar (2 kinds), wind etc	▪ *Prompt for opinions of each behavioural goal as they bring them up* ▪ *Tailor each discussion to each group, e.g. insulation products for social renters will be more basic – draft excluders/windows not roof insulation and greens may be more inclined to go for micro-generation*
☐ If all 5 goals are not mentioned, bring them up so that every goal is discussed in the same way.	

Behaviour goals:
- Install insulation products;
- Buy/install energy efficient products/appliances;
- Better energy management and usage in the home;
- Install domestic micro-generation; and
- Switch to a green energy tariff.

120

	Possible intervention and /roles – 15 minutes ☐ Provide group with four examples of possible interventions: 1) smart metering; 2) personal carbon allowances (carbon calories); 3) energy performance certificates; 4) differential tariffs ☐ On a sliding scale, ask them to mark which ones are more or less acceptable ☐ Why? ☐ Re-introduce post-its from previous section and ask them to add these things to the list of acceptable, unacceptable ☐ Why? 135 ☐ Which ones do you expect the government to be doing/supporting?	▪ *Hand out copies of energy performance certificates* ▪ *Need to briefly and concisely explain each possible intervention* ▪ i.e. ranking their own interventions (possible for them to do themselves) alongside those that government can do/they want it to do for them
	Trade-offs – 10 minutes ☐ Can some of the disadvantages of the unacceptable interventions be compensated for in other ways? How? ☐ If not mentioned, bring in possible interventions, e.g. council tax rebates for micro-generation 145 ☐ Who would they want to deliver these incentives?	▪ *Don't prompt at this stage – see what they say*
	Thank and close – 5 minutes ☐ Ask for additional comments ☐ 'Sell' the energy audits/interviews and chance to earn more money ☐ Reaffirm confidentiality ☐ Pay + signatures ☐ Give everyone (not post-taskers) the 'top ten tips' of energy 150 saving advice from EST	▪ *Take details of post-taskers and explain the process to follow*
	Props required: ☐ Sliding scale (high to low energy consumption) X3 ☐ Pictures of energy using appliances X3 ☐ Copies of energy rating charts (laminated) ☐ Copies of energy performance certificates (laminated) ☐ A big picture of a house and the rooms within it ☐ Post-it notes ☐ 'Top ten tips' home energy advice X 100	

Annex D: Depth interview topic guide

Discussion Guide – Depth Interviews
Defra: Public attitudes to sustainable energy consumption

BROOKLYNDHURST

Main research aims?
- **The purpose of these interviews are three-fold:**
    - To test the effectiveness of the audits as a process for encouraging more sustainable energy behaviour;
    - To see what actions people are likely/unlikely to take after the audits; and
    - How this process has changed opinions of energy/environment in general.

- **To understand the barriers and motivations to people acting on the advice given about each behavioural goal:**
    - Install insulation products;
    - Buy/install energy efficient products/appliances;
    - Better energy management and usage in the home;
    - Install domestic micro-generation; and
    - **Switch to a green tariff.**

- **To understand how these answers vary according to different segments of the population.**

Instructions: this is more of a 'road map' for the depth interviews where conversations will occur randomly and out of sequence.

☉	*Time elapsed (mins)*	*Interviewer notes*
1	**Lifestage, demographics, house types etc** ☐ What is your life situation? E.g. retired, working, full time mother ☐ Record household demographics, e.g. sex, age, age of children ☐ Record household type demographics, e.g. age of home, type of home etc	
5	**The auditing process – 5 minutes** ☐ How did you find the experience? ☐ Would you change anything about the way it was conducted? ☐ What kind of topics did they cover? ☐ Did they seem trustworthy? ☐ Did it make a difference because it was tailored to you? ☐ How did you find the questions they asked? (HEC form)	▪ *Do not prompt about what they covered etc – this is to see what they remember about the process* ▪ *If this is possible – not sure how audits done*
10	**What did you learn from the process? – 5 minutes** ☐ What did you specifically learn about what you can do to reduce your energy consumption in your home? ☐ Did this surprise you? Why/not?	▪ *It may be necessary to jump to specific behaviour goals as they talk*
	Individual behaviour goals (all of these are in relation to the auditing process)	
15	**Insulation – 5 minutes**	

	☐ What kind of things could you do to better insulate your home? ☐ Are you interested in making any changes in your home to improve insulation? Why/not? What are they? ☐ If so, when are you likely to do this? Why? ☐ What are the barriers to you implementing any insulation advice provided by the audits? How could these be compensated?	▪ *Do not prompt to see what they learnt in the audit – then prompt if necessary*
20	**Buying/installing energy efficient products/appliances – 5 minutes** ☐ What do you look for when you buy a new energy appliance? ☐ How does energy performance rate as a reason for purchasing? ☐ What do you think about energy efficient products/appliances? ☐ Do you look/ would you now look for 'A rated' appliances? Why/not? ☐ What else would you look for in an appliance to see if it is energy efficient? ☐ Are you buying anything soon that this would apply to?	▪ *Do not prompt to see what they learnt in the audit – then prompt if necessary*

25	**Install domestic micro-generation – 5 minutes**
	 ☐ How familiar are you with the ways that you personally can make your own energy/heat in your own home?
	 ☐ Discuss each of these in turn, or as they come up:
	   ▪ Wind energy;
	   ▪ Solar water heating;
	   ▪ Photovoltaic electricity;
	   ▪ Ground source heat pumps; and
	   ▪ Biomass.
	 ☐ Are you interested in finding out more about any of these after your audit? Why/not?
	 ☐ What would be the pros and cons? Discuss the 'hassle' factor (e.g. mess etc). What might help?
	 ☐ Are you bothered by aesthetics/ how they look? Is this a driving factor?
	 ☐ What would you think if your neighbour had these installed?
	 ☐ What do you expect the government to be doing?
	 ☐ And the electricity companies? If they paid you to put PV cells on your roof would you let them? Why/not?
		▪ *Ask them to describe the different types of ways they can do this – unprompted – then prompt if necessary*
		
		 ▪ *Unprompted, but then mention grants, loans, advertising, familiarity, large 'demonstration' projects on well known buildings*

30	**Switch to a green energy tariff – 5 minutes** ☐ You don't have to tell me, but do you know how much your energy bill comes to? Do you think this is high/low? Good/bad value for money? How significant is cost? ☐ How do your energy bills compare against other household bills?	▪ *Explore attitudes to energy suppliers and cost as a main driver to understand the motivations behind people's actions and current behaviour*

☐ How did you choose your current electricity supplier? Are you loyal to their brand? Do you shop around for the best deals? ☐ What do you understand a 'green tariff' to be? ☐ What do you understand a 'differential tariff' to be? ☐ What do you think about these as a concept, i.e. good, waste of time, disinterested? ☐ Would you pay more for 'green' energy? Why/not? If so, how much more? (e.g. 20 pence/week more or 50 pence etc) ☐ What sort of people do you think buy 'green' energy? ☐ What would stop you switching to a green energy tariff? What would persuade you? ☐ What role would you expect/want the energy companies/ government to take in persuading us to change to green energy tariffs?	▪ *Explore knowledge after focus groups and energy audits* ▪ *Test whether or not they think 'being green is normal'*
Better energy management and usage in the home – 5 minutes ☐ Do you ever consciously try and save energy? How/why not? ☐ If so, what is the main reason you try to do this? ☐ What would make you save more energy in the home? ☐ How far are you constrained by the type of house you live in and the lifestyle you live? Explain your answer.	▪ *Explore if environment comes up at all as a driver* ▪ *Explore what they learnt through audit process*
Changes in attitudes to energy (and the environment) – 5 minutes ☐ Do you feel you learnt anything new about energy? ☐ Did it reinforce your views on energy? ☐ Did it make you think about energy differently? If so, how? ☐ Have your opinions changed at all on the environment? How?	▪ *Explore <u>unprompted</u> shifts in attitude about energy as a topic overall, i.e. do they still think the same as they did before? What has changed?*
Thank and close – 5 minutes ☐ Ask for additional comments ☐ Reaffirm confidentiality ☐ Confirm addresses to send incentive payment ☐ Thank very much – goodbye!	

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Nobel House
17 Smith Square
LONDON SW1P 3 JR

www.defra.gov.uk