

The Missing Quarter:



Integrating Behaviour
Change in Low Carbon
Housing Retrofit

Low Carbon Housing Retrofit
Greater Manchester

Foreword

As low-carbon housing retrofit gains momentum under the twin-track policy drivers of emission's mitigation and economic development, it is easy to forget the human element. The title of this report "The Missing Quarter" refers to typical gains in energy savings available through encouraging behaviour change within a programme of physical retrofit activity. Without an effective approach to encourage behaviour change, much of the energy-saving potential of physical retrofit measures will be lost, resulting in negative impacts at all levels, from the individual householder's energy bills right up to national CO2 emission levels.

This report has been prepared by the Behaviour Change Group of the Housing Retrofit Programme of Greater Manchester's Low Carbon Economic Area Initiative. It should be considered in the context of the wider work across Greater Manchester around housing retrofit, the development of the green economy and Greater Manchester's Climate Change Strategy . The recommendations made within are aimed at decision makers and project delivery organisations concerned with GM's housing retrofit programmes."

The report represents a collaborative effort between all the members of the Behaviour Change Group who have contributed and participated so well in putting forward the findings and conclusions. The group is grateful to Professor Erik Bichard of Salford University and Michelle Berry of LCHR Greater Manchester for much of the background research and text.

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Executive summary and recommendations

A carbon emissions (CO₂) reduction plan directed at existing housing (domestic retrofit), is unlikely to achieve its aims without the positive engagement of the people who live in buildings targeted for improvement. Many studies have found that individual behaviour can produce highly significant energy reductions, ranging from 25% to 50%. One experiment found that variations of more than 300% in energy consumption were due to human choices in the home. **This work suggests that action to encourage households to change energy consumption behaviour should be an essential component of any carbon reduction strategy.** As more than 70% of the housing that will be occupied in 2050 has already been built, this would certainly apply to retrofit initiatives.

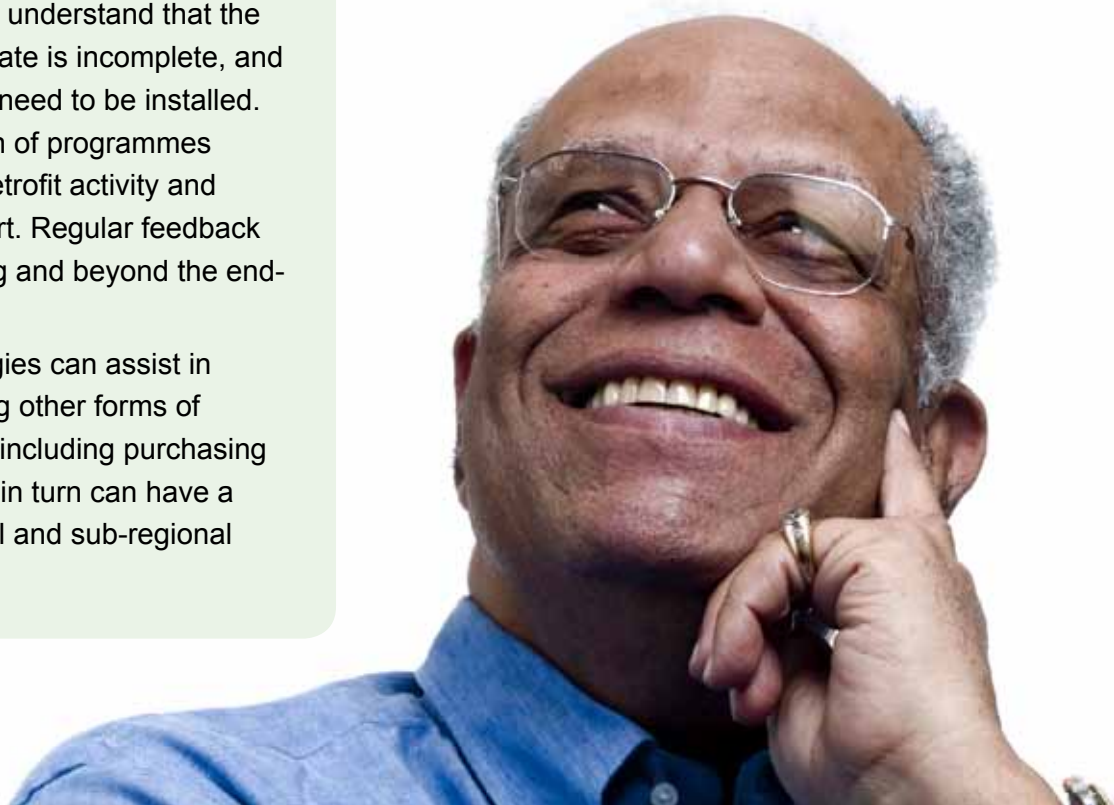
This report considers how behaviour can be influenced to reduce energy usage in the home in conjunction with retrofit initiatives. It is aimed at decision-makers and programme designers who are committed to minimising the greenhouse gas emissions of the existing housing stock over the next decade. It assumes that the material and technical challenges to treat these properties, while considerable, are at least understandable; but the means required to influence the human behaviour that will maximise the effect of these programme may be less of a known quantity. It therefore seeks to explain the underlying influences on human behaviours and how this applies to energy consumption. It summarises some of the initiatives that have already taken place to influence consumer behaviour and considers whether these might be transferable to Greater Manchester.

The research and the case studies reviewed for this report has lead to conclusions and recommendations which **should yield a high dividend without requiring substantial investment.**

The report concludes that:

1. It may not be possible to change a householder's mind about investing in energy saving measures and behaviours. However, it is possible to change the context in which people make decisions about this issue.
2. Context change can be achieved in a number of different ways, but should be focused on three key mechanisms:
 - Better information, education and awareness
 - Innovative and cost-effective incentives (the "nudge" element)
 - Building the capacity of the intermediaries (including community groups) to support and reinforce energy saving decisions (the "think" element)
3. Any attempt to encourage behaviour change towards implementing a retrofit measure must be tailored to the specifics of the individual and their community. This is particularly important when dealing with the vulnerable households and those with special needs.
4. No single organisation alone is likely to succeed in delivering the behaviour change component of a retrofit programme. Neighbourhood partnerships between (for example) energy companies, local authorities, community groups and academics will be more likely to achieve results that reduce greenhouse gas emissions over a longer time period.
5. Community based working is likely to be more effective than relying on large scale campaigns due to ability to make messages relevant to the target audience and will benefit from peer influences on those that trust the judgement of those around them.

6. Interventions should start with **positive messages** and continue to emphasise the advantages to the householder throughout the programme. Gains may be in the form of immediate financial savings, non-cash rewards, 'feel good' factors from collective working with friends and neighbours and public recognition of a significant contribution to civic life.
7. Householder engagement needs to come from a trusted source. Where there is little or no capacity in a neighbourhood to offer this recruitment and training should be offered to respected and motivated champions. Champions may come from any community association, not necessarily one devoted to pro-environmental action.
8. Investment in establishing and maintaining local environmental action should run in parallel with each retrofit programme.
9. Incentives should include rewards that have sustainable value and can be offered from other public policy strategies such as the health, education and transport.
10. Targeted information needs to reassure households of the benefit of the activity, and that the measure is the right intervention at the right time. Others may need to understand that the work they have done to date is incomplete, and that additional measures need to be installed. Monitoring and evaluation of programmes should be built into any retrofit activity and incorporated from the start. Regular feedback should be provided during and beyond the end-date of the programme.
11. Behaviour change strategies can assist in enhancing and influencing other forms of environmental behaviour including purchasing and life-style habits. This in turn can have a marked effect on the local and sub-regional economy.



Recommendations were developed following the compilation of evidence by the Greater Manchester LCEA Behaviour Change group and the behaviour change stakeholder event held in February 2011 . The recommendations should be adopted to achieve higher levels of retrofit investment in domestic properties and to bring about long term behaviour change which is more energy efficient.

The following recommendations are made to inform those responsible for developing strategy and implementing behaviour change programmes.

Ref	Recommendation
1	A properly planned and resourced behaviour change strategy must be included by the partners of any retrofit programme before public funding is committed to the project. The three main elements of the retrofit programme; better targeted information, incentives, and local well resourced support groups should all feature in the strategy.
2	Behaviour change should be incorporated in the development of the Green Deal for Greater Manchester.
3	Retrofit partnerships should comprise a group of organisations that are collectively capable of implementing the strategies that can fund and deliver not only the physical measures, but understand the target community and have the skills necessary to engage with householders.
4	Programme coordinators, energy advisors and those playing customer service roles should be properly trained in sufficient number to meet the need of programmes.
5	Monitoring and evaluation plans should be in place before any retrofit programme begins. Regular feedback on progress should be offered to householders on a continual basis through and beyond the end date of each programme. Evaluation that captures cumulative progress across the whole of Greater Manchester (such as overall reduction on the carbon footprint of the conurbation) should be part of this work.
6	Incentives should be designed and secured to suit each neighbourhood before the project begins. Information designed to help householders to decide on priorities for their home should be tailored for each intervention area.
7	Programmes should use a range of community networks and trusted sources to help with the development and delivery of energy efficiency information or to signpost services. The messages need to be delivered face to face and be reinforced over time.
8	A co-ordinating body for retrofit programmes should be set up and resourced.
9	The feasibility of creating a levy on retrofit programmes, to support innovation, research and co-ordination work on behaviour change, should be investigated.
10	A good practice behaviour change guide for social landlords should be produced to assist them in implementing the recommendations of this report.
11	The scope and potential for joint collaboration with the Utility Companies should be explored and developed as a priority. Possible areas to consider include promotion and campaigns, advice, training and community engagement.
12	There should be a focus on combating fuel poverty and in identifying, advising and assisting households struggling with fuel bills and/or those who could be considered to be at risk. A coordinated approach between the utilities companies, health and housing sectors and other agencies should be developed further.

Introduction

1.1 The significance of behaviour for the retrofit agenda

A carbon emissions (CO₂) reduction plan directed at existing housing (domestic retrofit), is unlikely to achieve its aims without the positive engagement of the people who live in buildings targeted for improvement. Many studies have found that individual behaviour can produce highly significant energy reductions, ranging from 25% to 50%. One experiment found that variations of more than 300% in energy consumption were due to human choices in the home. This work suggests that action to encourage households to change energy consumption behaviour should be an essential component of any carbon reduction strategy. As more than 70% of the housing that will be occupied in 2050 has already been built, this would certainly apply to retrofit initiatives.

This report considers how behaviour can be influenced to reduce energy usage in the home in conjunction with retrofit initiatives. It is aimed at decision-makers and programme designers who are committed to minimising the greenhouse gas emissions of the existing housing stock over the next decade. It assumes that the material and technical challenges to treat these properties, while considerable are at least understandable; but the means required to influence the human behaviour that will maximise the effect of these programme may be less of a known quantity. It therefore seeks to explain the underlying influences on human behaviours, and how this applies to energy consumption. It summarises some of the initiatives that have already taken place to influence consumer behaviour, and considers whether these might be transferable to Greater Manchester.

The report concludes by making recommendations about the steps that policymakers and programme managers in Greater Manchester should take when implementing an energy reduction behaviour change programme. It recognises that there is no

single prescription for achieving behaviour change, and that a range of interventions, dependent on context, will need to be considered.

1.2 Background: the Greater Manchester context

The coordinated approach to improving existing housing stock is being developed and Greater Manchester's Low Carbon Economic Area (LCEA) approach presents an opportunity to introduce behaviour change initiatives throughout the conurbation. This report was requested by the Domestic Retrofit Behaviour Change Group, which reports to the LCEA Core Strategy Group and to the Association of Greater Manchester Authorities (AGMA) Environment Commission. The Strategy Group and the Commission anticipate that behaviour change will play a vital part in the success of the forthcoming basic energy efficiency measures programme which seeks to treat 75% (approximately 400,000) of under-insulated lofts or un-insulated cavities by 2013 in Greater Manchester. This process provides a valuable opportunity to influence the way people understand and use energy, and to ensure that the measures that are installed work to full energy saving potential. **It will be important during these crucial intervention periods that householders are given the opportunity to understand how to benefit from better insulation and energy efficient technologies, and at the same time be encouraged to think differently about energy use.**

However, there is a longer-term ambition to engage the whole of the householder population of the conurbation. There are approximately two million residential properties in Greater Manchester and data suggests that 67% are owner-occupied, 8% privately rented and 26% social housing. It is estimated that there are 500,000 untreated lofts and cavities in Greater Manchester¹.

Work in progress

Work is already being undertaken in Greater Manchester to progress behaviour change activity. GM recently submitted a successful European Regional Development Fund (ERDF) bid to secure funding for 5 social housing retrofit programmes to be carried out in the conurbation by 2013. The 5 projects cover a range of physical measures including biomass heating systems and external insulation to system built properties. Together these projects will target 2,975 residences. The retrofit schemes are complemented by an awareness and behaviour change programme to ensure that occupants of the improved properties understand and take advantage of the upgrades made to their homes. It will be important for the behaviour change programme results to be effectively analysed to demonstrate best practice. Future projects need to give similar prominence to behaviour change within their scope.

Green Deal

The Government's Green Deal aims to enable households to install home energy measures that are in part funded by a loan attached to the property rather than the household, and repaid from saving in energy bills. The scheme has been driven by the need for a national comprehensive retrofit programme and carbon emission targets set for 2020 and 2050. In addition to its core aims, the Green Deal provides the potential to unlock not only a huge economic opportunity, but social benefits through warmer homes, the mitigation of rising fuel costs, and the prospect of local action where residents act together to bring about improvements to their homes and communities. In 2011 Greater Manchester was chosen by Government to "trail blaze" the Green Deal Scheme within social housing ahead of its nationwide launch. GM has a social housing stock of over 260,000 properties and of these up to 25,000 fall in to the untreated 'hard to treat' category. The trailblazer will seek to establish

delivery partnerships and supply chains to build customer confidence in the Green Deal. **It will be essential that long term behaviour change is intrinsic to the Green Deal approach in order to achieve the best possible savings.**

Greener choices

It is anticipated that the promotion of the low carbon agenda across GM in terms of behaviour change will lead to greener consumer choices (such as purchasing more sustainable products), which in turn will benefit the development of the low carbon economy. Green education and behaviour change drives the demand for low carbon products and services and thus the expansion of those sectors to meet the demand.

A seminar was held for a multi-sectoral group on 15 February 2011 to gain a wider range of views of these topics and the outcome of the event informs this report. A fuller account of the seminar is contained in Appendix C. The seminar provided greater insight and focus to this area of activity across GM, and prompted questions surrounding issues such as what kind of behaviour should be targeted, and whether tenure status should influence the design of the behaviour change approach.

This report makes a distinction between behaviours which have the potential to change life-styles and those that may be directed at shorter-term decisions. The former, repetitive or habitual behaviours, such as turning off lights, choosing the bicycle over shorter car journeys and reducing the number of flights taken per year, will make a profound difference to a householder's energy consumption over a long period of time. However, this type of change can be hard to influence and often requires the investment of time and resources to effect lasting change. The shorter-term transactional decisions, such as buying insulation or renewable technology, are reliant on more clear-cut

processes, and do not necessarily rely on winning the whole argument on the need to reduce carbon emissions to effect behaviour change.

Fuel poverty

The definition of fuel poverty is when a household spends 10% or more of its disposable income on fuel costs. This therefore creates particular challenges for those on low or fixed incomes, and as such low income households may not be in a position to undertake measures which will reduce the cost of fuel bills. It is recognised that certain groups, for example, the elderly or those who spend a long time in the home, are reluctant to use new heating systems on the grounds of cost or the fear of getting into fuel debt. There is also clear evidence that lack of affordable warmth directly contributes to and exacerbates health problems.

Social Housing

In the social housing sector a large majority of properties now meet the Decent Homes Standard², but further measures are needed to ensure that social housing has good energy efficiency standards. This sector has a high number of households on low income and those who are considered vulnerable. An on-going programme of information and action will be required to ensure that physical measures are supported by advice and information for the user.

Achieving lasting behaviour change

This report explores both ways to develop and implement transactional and habitual behaviour change. Transactional behaviour change is likely to play a key role in the Greater Manchester 'basic measures' programme which aims to achieve 400,000 insulation measures by 2013. Transactional behaviour strategies will be mainly directed at owner-occupiers who will need to be encouraged on an individual basis to make one-off energy saving purchases. The insulation of social housing does not require a purchasing decision by tenants. **The encouragement and realisation of habitual behaviour change is key to achieving the longer-term carbon emission reduction objectives of Greater Manchester. It is important that any transactional behaviour change schemes are supported by habitual behaviour change elements in order that the full energy saving potential of projects can be achieved.** The report includes examples of how this can be achieved as part of a comprehensive retrofit programme.



Seeking to understand behaviour change

2.1 Barriers and Motivations

There are many studies and theories that seek to explain the barriers and motivations that contribute to human behaviour. Behaviour is itself complex and multilayered, and the way humans behave is influenced by a range of individual, contextual and environmental factors. The degree of complexity and interaction of these factors on individuals is not uniform, making the design of one-size-fits-all behaviour change strategies difficult to achieve. However, it is possible to adopt a broad understanding of how behaviour can be influenced and, in some cases, changed. Research suggests that there are barriers or pre-requisites for behaviour that need to be satisfied before an individual will act on an issue³. These can be simplified into five questions as follows:

1. Do I understand that there is a problem?
2. Do I care about the problem?
3. Do I know what to do about the problem?
4. Will my solution work or make a difference?
5. What will others think of me if I act?



There are many factors that influence the answers to these questions. Among them are:

- Whether the immediate environment is conducive or facilitates performing a particular behaviour at all;
- How important the behaviour and views of social groups, peers, family and friends are regarded; and,
- The internal tendencies and preferences that have built up in individuals over time including knowledge, values, beliefs, attitudes, self-belief.

2.2 Decision Making

Social psychologists explain that individual decisions about how to react to the threat of climate change are weighed against the likely impact on the life of the individual⁴. The way people decide whether to act depends on the ability to process the following list of factors:

- Threat appraisal – what is the likelihood that the threat materialises?
- Coping appraisal - if the threat occurs, what is the severity of its impact and how long will this last?
- Affective responses – are there strong emotional responses to the threat and how will these affect the decision to act?
- Motivational processes - how much priority should be placed on acting in a timely manner?

Many of these questions are influenced by the amount of information people have been able to acquire and understand. A study in Salford and Trafford found that, while many people understood the main ways to conserve energy in their homes, there was less understanding about the level of each insulation measure that should be installed, leading to overconfidence that homes were properly insulated⁵.

2.3 Values

It is also important to understand that people have different values and will look for solutions to threats like climate change from different quarters. One way to see how this might work in a neighbourhood context is to consider research based on a hierarchy of human needs, which categorises the population into 3 main types of people⁶. These are outlined below.

1. Inner directed '**pioneers**' - pioneers like to meet challenging and intriguing people and connect through their own networks. They like to be associated with good causes where they can put their values into practice. Their reaction to threats is to do something about it themselves and they search for brands that bring new possibilities.
2. Outer directed '**prospectors**' - prospectors like to meet important people and connect through big brands and organisations. They like to be associated with success and do not like threats to the things that they have worked for. Their reaction to threats is to organise and they search for brands that make them feel good.
3. Security driven '**settlers**' - settlers like to meet people like themselves and people they know. They connect through clubs and family and like to be associated with tradition. Their reaction to a problem is to look for somebody to do something about it, and they search for brands that make them feel secure.

While all of the influences described in the literature are capable of manipulation there are 2 that are particularly suited to the task facing retrofit planners. These are 'incentives' and 'norms', sometimes referred to as 'nudge' and 'think' respectively⁷. These, combined with much more effective and targeted education and awareness are likely to make a difference to householder behaviour. The Sub-Group was persuaded by work such as the

Cabinet Office report MINDSPACE⁸. This argues that, in policy terms, it is very difficult to change people's minds, however, with a well-designed strategy, it is possible to change the context within which people make decisions.

Context changing can be achieved in a number of different ways. 3 key mechanisms used to achieve this:

- Better information, education and awareness
- Innovative and cost-effective incentives (the 'nudge' element)
- Building the capacity of the community to support and reinforce energy saving decisions (the 'think' element)

2.4 The Significance of Targeted Information

If the designers of energy-saving schemes continue to rely on tactics that assume that people make decisions based on cognitive (fact-based) processes they should not be surprised that the results of their efforts are disappointing. Many interventions focus on offering information to change attitudes or address problems. In reality, the success of these interventions cannot solely depend on changing the cognitions and motivations of people, particularly when habits are entrenched. That is not to say that basic information about how to insulate and efficiently heat homes is unnecessary. There is still a marked tendency to inaction by under-informed property owners in relation to energy conservation. Despite the Government's commitment to target better understanding about ways to mitigate climate change, 29% of respondents to a DEFRA⁹ survey had never considered an energy-efficient boiler, 27% had never considered solid wall insulation, and 14% cavity wall insulation. This suggests that there is still scope for education on these benefits.

According to a report published in 2007¹⁰ information is inconsequential in behaviour change programmes compared to the list of other factors that lead to inaction. These include, as reasons for inaction, a lack of understanding about the causes and consequences of climate change, scepticism about the information they receive, downplaying the immediacy and significance of the impacts of climate change, externalising responsibility and blame, a reluctance to change lifestyles and fatalism. Individuals will make decisions according to their state of awareness and concern about climate change, their willingness to act, and a belief that their action will be effective and beneficial¹¹. Often messages about energy conservation are focused on the money that could be saved on fuel bills, linked with the good that retrofit measures to houses can do for global CO₂ emissions. The Government¹² estimates show that householders can save approximately £45 a year by 'topping-up' thin loft insulation and £115 a year with cavity wall insulation. In the latter example, homeowners can achieve a payback period of less than two years, making cavity wall insulation an attractive investment. However, the Royal Institute of Chartered Surveyors takes the view that homeowners are less likely to invest in energy efficiency because 'the barriers holding back demand are much stronger than the drivers for it, and are primarily behavioural and financial; specifically there is a lack of a reasonable return on capital and an unwillingness to pay high upfront costs for longer term benefits¹³.

Communication

Work carried out by the University of Plymouth (The Psychology of Behaviour Change)¹⁴ showed why these fact-based messages are failing to be effective. The argument is that acting on climate change is difficult as the issues are characterised by uncertainty, complexity, distance and delay. This is demonstrated in the table.

Human Mind	Climate Change
Simple, local	Complex, global
Certain, vivid	Uncertain, abstract
Immediate, linear	Delayed, non-linear

The study recommends that communications with householders should be built on the following advice:

- **Vivid and Personal:** make climate change dialogue personal and vivid by looking at the question 'What can I do?' using local examples that have meaning to people and give positive examples of what others have done. This will lead to increased concern, understanding of mitigation responses and belief that actions now will make a change.
- **Social Norms:** an interesting analysis comparing daily energy use showed that it was a much more effective tool if smiley and sad faces were used alongside the graphical data to motivate householders to save energy.
- **Positive Futures:** the importance of positive messaging to motivate was highlighted, with those who feel powerless reporting higher levels of fear than hope and those who feel in control and motivated reporting higher levels of hope than fear.
- **Visualise the Invisible:** 2 small, recent local studies using thermal imaging showed this to be a powerful tool.

It is considered that there is still a degree of confusion in the minds of householders regarding the nature and frequency of information that householders receive. This was not necessarily related to the types of energy conservation that could be acquired, which was broadly well

understood⁵. The confusion was more closely related to the priority that should be given to each intervention, and the amount (of loft insulation, or number of windows with high thermal properties for example) that should be purchased to bring the house to recommended levels.

It should be noted that segmentation analysis and the use of focus groups can be useful tools in determining messages which appeal to different audiences.

Education and awareness

The research work suggests that Policymakers have more work to do on basic education and awareness - but, even if it is done, it will still not be enough to sway many homeowners to invest more in their property. The larger challenge for policymakers is to overcome the barrier that homeowners already feel that they have acted responsibly and sufficiently in response to the advice, because they have applied some measures to their house. This could be as a result of any investment in energy-saving measures, regardless of their potential to reduce further energy consumption. A recent study carried out by Salford University showed that a significant number of people said they already had loft insulation (75%) and double glazing (85%). These levels of adoption contradict government estimates that 14

million energy-saving measures such as loft, cavity and solid wall insulation remain to be installed in Britain's homes¹⁵, suggesting that more than 50% of the housing stock would benefit from additional insulation. The discrepancy between the Salford study and Government estimates may be due to an over-statement by householders in response to survey questions or, more likely, reflect the belief that partial adoption of some form of insulation constitutes an insulation measure. This belief may also inhibit motivation to invest more money in additional energy conservation levels, particularly if the perception is that the existing levels are adequate. It is also the case that retrofitting solid wall insulation to older houses (either external or internal to existing walls) is still rare. It is also likely that most British houses have an incomplete set of energy conservation measures.

Homeowners may also believe the Government is not serious about energy conservation because there is not enough evidence that others (for example companies and local government) are leading by example. This is why it is important, prior to any behavioural change measures being implemented, to understand people's baseline position. The Sustainable Development Commission¹⁶ explained this by stating that 'any intervention aimed at changing behaviour needs to start from an understanding of where people are (not where policymakers think they are) and take account of motivations and barriers, while also recognising that people's acceptance of change is often dependent on how involved they feel they have been in the decision'.

Thermal imaging

There have been some fact-based tactics that have been very effective in demonstrating both transactional and habitual behavioural change. A PhD project at Plymouth University used thermal images to prompt householders to change their energy-use behaviour. In study one, a small climate



action group in Devon was shown thermal images of heat loss from their properties. The graph below (figure 1) indicates that after one year, householders shown the thermal image were continuing to review their energy consumption and the amount of CO₂ emitted from their property¹⁷.

Figure 1

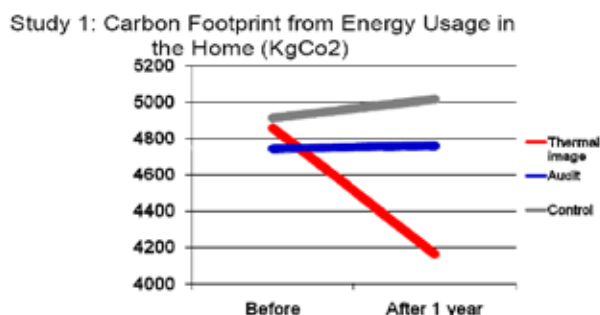
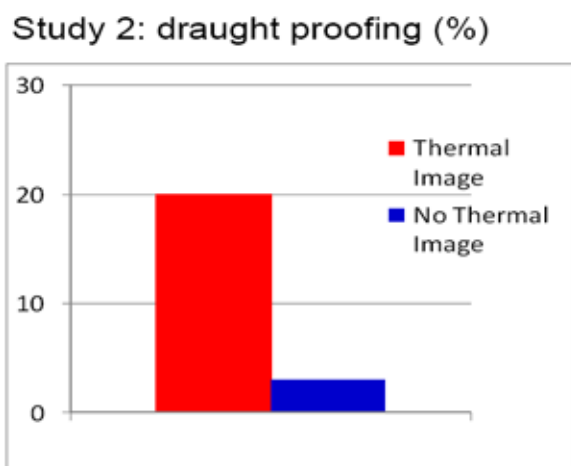


Figure 2



A second study was carried out targeting Homebase customers who had never purchased a green product before. These householders were shown thermal images of their properties and were encouraged to install draught proofing. Figure 2 indicates that a higher percentage of householders shown a thermal image of their property went on to install draught proofing, compared to those not shown a thermal image.

The literature suggests that, whilst a majority of householders are aware that climate change is a serious issue, the potential consequences of the threats posed by climate change seem to be

underestimated and misunderstood. This, alongside the relationship between socio-demographic characteristics of people and their opinions, will have significant implications for each neighbourhood that is approached by a retrofit project. **The nature and means of delivery of each education and awareness package needs to be tailored if it to make an impression on its audience.**

2.5 The Importance of Rewards and Incentives

Rewards and punishments are tools that have been used in changing behaviours in different contexts. Rewards promote learning and internalisation whereas punishment can succeed in compliance and halting of unwanted behaviours. However, punishments can be associated with unpleasant memories and avoidance. Financial disincentives can influence sustainable behaviour, but they are not effective once the disincentive is removed. Also, their use is problematic in low income communities as they are inequitable. In the UK, it is considered that the introduction of energy-use taxes could significantly increase the problem of fuel poverty unless complex counter measures were introduced to reverse this effect.

Positive incentives can be used to stimulate a variety of behaviours, and also consolidate behavioural change¹⁸. Reward is an operational concept for describing the positive value that an individual ascribes to an object, behavioural act or an internal physical state. Rewards can encourage learning, behaviour and feelings of positive emotions and are generally considered more effective than punishment in bringing about positive behaviour.

The evidence that would support the use of financial incentives, including discounts, in encouraging sustainable behaviours is mixed. It has been observed by different authors that offering financial incentives for one type of sustainable behaviour

may either result in a “spill over” to other types of behaviour or, with equal probability, reduce the likelihood of engaging in other environmental behaviours unless more money is offered. However, the main reasons why direct financial reward may be counter-productive is that money-based schemes are expensive, and there is no control over the goods and services that the participants will buy with the reward money. For instance, spending could easily go towards more frequent flights to holiday destinations rather than more solar panels. Pay As You Save energy schemes may be attractive to some, but those already concerned about high energy bills will be worried that they will not be able to pay for energy saving measures in the future. These schemes also rely on efficient energy management of the home, something that is not a foregone conclusion.

Non-financial incentives can be more effective in influencing sustainable behaviour than financial incentives. They can have an intrinsic value and can have a number of additional benefits. They can boost local economy, help in community development and contribute to meeting a variety of the Government’s objectives.

In the longer-term a reliance on incentives is not desirable as it may results in a lack of proactive behaviour in the absence of a financial stimulus. However, non-cash incentives have the potential, in association with other tactics, to achieve 2 objectives. Firstly, they are well suited to motivate ‘once in a while’ transactions such as buying a new boiler or insulation which does not require

repeated behaviour. Secondly, they allow the resident to experience the benefits of the purchase without the need to be entirely convinced by the other arguments associated with climate change⁵.

2.6 The Significance of Community Influencers

The ‘think’ element (research described on page 11) is associated with discussions between peers (neighbours and friends) which have the potential to create a consensus around the need to support ‘green’ initiatives and to overcome doubts by listening to those convinced of the arguments to live a more sustainable life.

It is possible to talk through issues in groups, and this is certainly part of the report’s recommended strategy. The importance of investing in community groups to augment retrofit work is important for 2 reasons. Firstly, the people that make up community groups are the most likely trusted messenger/ persuader on the door step or at community gatherings. Secondly, community groups will be active in the neighbourhood long after the retrofit teams have departed. The introduction of energy saving measures is unlikely to work to their potential



without the perpetuation of the mindset that helped them to be adopted in the first place. Any community group, regardless of its core purpose (faith, arts, sports, single issue campaign), has the potential to influence incentive driven behaviour and convert this into longer term habitual behaviour. This is provided that the group can be persuaded of the merits campaign and it has the capacity and resources to communicate the message to the rest of the community.

Mix of different strategies

It is therefore likely that a mix different strategies including supporting community organisations will need to be employed in order to accelerate the rate of change necessary for adoption of sustainable measures in the home. This view is supported by a number of academics investigating the role of behaviour change and energy consumption.

A report to government by the Committee on Climate Change¹⁹ stated that there are ‘not one but a multiplicity of ways to encourage behaviour change, confirming the need for packages of mutually supporting measures which target behaviour at a number of different levels – structural, social and psychological’.

The Green Alliance report ‘Bringing it Home²⁰ highlights ways in which the government can help people live more sustainably through a better understanding of human behaviour. It concludes that “the heterogeneity of individuals and groups within society means there will be different reactions to any one policy”. This suggests an array of interventions is required to embed behaviour change comprehensively across the society.’

The report continues to say: ‘The successful initiatives are likely to need all the policy tools available; a mix of well-designed information, incentives, regulation services and nudges to encourage the desired actions and outcomes.’

Within this widely held view of adopting a diverse range of approaches, the significance of community

based networks and face-to-face approaches to change behaviour is a reoccurring theme. An evaluation of the DEFRA Environmental Action Fund⁹ highlighted that settings where a trusted source provides face-to-face support are particularly effective at facilitating behaviour change and that peer-based learning is especially powerful. There are also references to individuals working within green community groups that were set up to attract grants to install alternative energy generation. Housing co-operatives and other housing groups have also engaged residents in procurement circles or energy conservation drives.

2.7 Summary

Work in this area implies that a strategy based on a single approach is unlikely to work, and meet multiple strand strategies should be designed to appeal to different groups. This might be achieved in one single initiative if it were flexible enough to cater for variation in individual unmet needs.

3. Pre-requisites for Behaviour Change Programmes

Based on the analysis of a number of studies over 30 years, the psychologist Paul Stern summarises much of this work into a number of contributing factors that influence decisions to adopt sustainable actions these include the fact that non-financial factors are as important as financial ones. Offering savings can be important but is not definitive, because consumers rarely treat efficiency actions as investments and cost minimisation is one of many motives.

Stern's prescription for an effective energy saving campaign is thorough, and could be adopted as a template for assessing future behaviour change initiatives in Greater Manchester in the future.

Stern's list for a well designed campaign would:

1. Address multiple barriers;
2. Combine influence factors such as information, incentives and marketing;
3. Tailor the offer;
4. Understand the issues from the consumer's perspective
5. Understand that some interventions are beyond consumer's controls; and
6. Involve constant monitoring

From this Stern outlines the 6 principles of a successful campaign:

- Prioritise high impact actions
- Provide sufficient incentives
- Strongly market the programme
- Provide valid information from credible sources at the point of decision
- Keep it simple
- Provide quality assurance

The next section of this report uses Stern's 6 steps for successful sustainable action campaigns to identify learning from other projects and inform an LCEA led behaviour change programme.



3.1 Prioritize high impact actions (Stern's step 1)

To date, much of the efforts associated with the energy saving agenda has been focused on loft and cavity wall insulation, and replacing inefficient boilers. However, heat loss through solid walls, floors and windows is also extremely important. These measures are often problematic because of technical issues (solid wall insulation), non-standard fitting and varying designs and materials (windows) and the difficulty in reaching appropriate spaces (floors). There is evidence that householders can become confused about which measure to choose particularly for those households that need to pace their investment to match their incomes. Often, a confused consumer becomes frustrated at the lack of definitive advice, or decides to defer a decision until a clearer direction is offered. If obtaining this direction requires a proactive action the resident may not obtain the measure for a considerable time. Residents would appear to be in need of a more targeted explanation of how and when to embark on a total house retrofit project, and there are very few initiatives that have attempted to do this.

Case Study: Upper Calder Valley Domestic Energy and Efficiency programme²¹

Calderdale Borough Council in West Yorkshire noticed that many houses needed repairs before insulation works could be carried out. Because of this a level of technical expertise (beyond knowledge of insulation, efficient heating measures etc.) was needed in order to achieve a whole house solution. The aim was to do this in one visit to avoid inconvenience. At the outset there was a good level of interest in the project which was achieved by a poster campaign and information events. The objective of the project was to reach 1 in 5 households in the Lower Calder valley resulting in the issue of around 300 Energy Performance Certificates. The advice pack for householders

was tailored to the household, including advice on repairs and the potential for renewable energy generation. Information about how to organise and pay for insulation, energy efficiency interventions, energy saving gadgets, energy providers and tariffs, renewable, micro generation, feed-in tariffs etc. was also included in the information they received. Crucially, the pack clearly showed how much each intervention would cost, and the likely savings expected in terms of both carbon and energy. Workshops have since been organised for participants to give further information and to open up discussions about community schemes, demonstrate how to compare energy providers and tariffs etc.

While whole-house treatments are likely to become the preferred methods of assessing the means to achieve low carbon retrofit works on domestic house, the Calderdale project demonstrates that it is possible to encourage residents to make phased choices when presented with a range of potential measures. The forthcoming LWP1 Domestic Housing Retrofit report into Retrofit Standards will help to clarify these stepped changes for prospective energy advisors in the future.

3.2 Provide sufficient incentives (Stern's step 2)

Some energy saving initiatives offer incentives and rewards to entice householders to either purchase or accept the measures offered to them by the promoters of the scheme. Appropriate incentives can be important catalysts to encouraging individuals overcome the inertia of inaction that exists for many as described earlier. Repeated incentives can lose impact over time, or condition out positive proactive behaviour. But if they are designed to shift (particularly) shorter-term transactional behaviour such as the purchase of a new boiler, they will serve a valuable role in any retrofit programme.

There are currently many offers by utility companies that involve a cash discount on both the materials and labour to insulate houses. In 2010 the government offered a £400 discount to householders that wanted to replace their old boiler with an energy efficient model (the so-called boiler scrappage scheme). In 2007, Londoners were offered a £100 cashback deal on the price of loft and wall insulation, and there are currently more than 60 Councils offering a Council Tax rebate of up to £125 when householders invest in home insulation. Both schemes are offered in conjunction with British Gas. While some schemes have seen local success, this tactic has not led to rush by householders to complete, or in some cases to start to treat their energy inefficient properties.

In the next 18 months the government is due to introduce further subsidies for those opting to buy alternative fuel systems through the Renewable Heat Incentive (RHI)³⁵, and will facilitate the installation of insulation and other energy efficient measures in return for long-term repayment from cost savings via the Green Deal. Other incentives include attractive electricity (feed-in) tariffs for householders generating renewable energy and selling it to the grid.

While the offer of money is a simple transactional device and therefore easy to administer, it is not possible to control how cash rewards are spent and residents are free to choose a more carbon intensive activity for their reward than the incentivised activity. The alternative is to offer non-cash rewards, and examples of these are starting to emerge. This demonstrates the need for long term behaviour change interventions and education beyond transactional changes.

Case Study - Putting Incentives into Practice: Timperley Green Homes²²

This research was carried out by Salford University and was funded by the Environment Agency and Trafford Borough Council. The area of Timperley is populated by people from diverse income backgrounds and ages who owned their own homes and lived in a mixture of housing types. The study was designed to determine whether reluctant or indifferent owner-occupiers could be motivated to change their minds about buying energy saving measures for their homes. The initial attitude survey doubled as a source of information about the choices available and served as a vehicle for recruitment. The residents were asked if they would consider a range of rewards in return for investing in energy saving measures, including free fruit and vegetables, season tickets for public transport, free access to further education courses the offer invitation have a free energy survey of their house carried out by the Energy Saving Trust. To date 5 households have purchased a range of energy saving measures including a boiler, loft insulation, space heaters and replacement doors. The results have been positive enough to attract the interest of energy providers and the team is now talking to several interested parties to explore the possibility of rolling the strategy out to a larger number of households.

Appropriate incentives can be an important catalyst in encouraging individuals to engage in a new behaviour which may then become a habit. However, it would be impractical to consider untargetted incentivisation, and it is often found that the same incentives lose their effectiveness over time and the withdrawal of incentives can demotivate. In order to achieve long-term behaviour change and sustainable lifestyle choices individuals need sufficient learning and experience to behave in a sustainable way.

3.3 Strongly market the programme (Stern's step 3)

The clear communication and marketing of any behaviour change campaign needs to be fully considered before any programme of work commences. Communication and marketing is essential to ensure that the audience understands the purpose of the campaign and what action is expected. It can take a variety of formats which will depend upon the target audience, messages and budgets, but it needs to be a driving force for action. Key messages should be selected and communicated clearly and concisely to consumers. Household holders need information that is personal and local to their specific surroundings rather than concepts which are abstract and global. **Many studies have found that face-to-face communication yields the best results in delivering behaviour change.** It is therefore important that marketing and communication does not become solely about the production and distribution of literature, rather that it aids face-to-face advice and support to customers.

Case Study: 'Toasty' campaign for Greater Manchester

This campaign is an example of how marketing on a large scale can be used as part of a wider energy saving strategy. The GM wide campaign, supported by all local authorities and the EST advice centre, encourage customers to sign up for loft and or cavity wall insulation. The campaign has a clear identity and was supported by the creation of a website and customer literature. The campaign uses radio advertising and events designed to encourage people to sign up for insulation measures via the Toasty website. The media and PR activity localises the campaign with news articles in local areas. Over 8,000 website hits demonstrated the importance of work of mouth as a high percentage of customers cited that they had heard of the campaign from a

friend or colleague. The local authority endorsement also proved to be key to the success of the campaign and the independent and impartial advice and referral process.

Case study: Stand-by Campaign 'Off. Really off?', Germany²³

In 2000 a project was undertaken to address household appliances' stand-by consumption. The campaign was based on a 2-pronged strategy – one using mass media and the other appliance retailers. The mass media campaign included newspaper and radio coverage and a cinema spot. More detailed information was available for customers in a brochure via the internet. The media campaign advised consumers to get in touch with their local retailer to find out more about how to reduce stand-by consumption. Before the campaign commenced research was undertaken on the target group and it was decided that the campaign would focus on young consumers aged between 16 and 40 years old.

The focus of the mass media campaign was on the financial savings that could be achieved and the psychological motives of consumers to be 'in control' of their consumption. Messages were delivered using catchy and humorous pictures and slogans.



At the same time the campaign aimed to provide the necessary information required for people to get more information on the potential for savings, and technology available. The campaign focused on the self interest of consumers such as energy costs, and not on the environmental impact.

Evaluation of the project compared participants' behaviour change to a control group before, during and 1 year after the campaign. After 3 months, 33% of the population was aware of the campaign slogan. After the campaign, 57% of those sampled were aware of the stand-by issue raised in the campaign, compared to 39% in the control group. Participants' willingness to pay for energy-efficiency devices rose from 19% to 24%. The campaign's success was attributed to going beyond niche eco-marketing by 'selling' energy efficiency as a product and using a fun message.

Marketing does not necessarily need to be focused over a large scale, but can instead concentrate on a small number of targeted customers or households. It is important to follow up the impact of these messages to ascertain resulting actions by individuals.

3.4 Provide valid information from credible sources at the point of decision (Stern's step 4)

Customer confidence in the energy and housing markets and in home maintenance services is lower than all other markets. Research has demonstrated that customers have lost trust in 'authority', and are more influenced by media and by their friends and family²⁴. It is therefore essential that information to assist behaviour change is provided from not only credible, but trusted sources. The source of information can impact upon customer confidence in the measure or advice being provided. In turn this will affect willingness to change behaviour and to

pass on positive experience on to friends and family through word of mouth.

A recent report produced by Customer Focus identified that when people were asked who they trust to provide them with energy advice 44% stated that they trust independent consumers groups followed by specialist charities or not-for-profit organisations and online price comparison sites. However people's decision-making is most influenced by the media and their friends and family. In some instances customers will need to share information about their energy use and their households in order to receive bespoke advice specific to their needs and therefore it is essential that any barriers to engagement are removed. The Customer Focus research demonstrates the importance that consumers place in their sources of information, and emphasises the need for this element of any behaviour change campaign to be considered and incorporated during planning.

Home Improvement Agencies which provide local advice and help with adaptations and handyperson services to vulnerable households have an important role to play.

Case Study: Global Action Plan (GAP)²⁵

GAP is an environmental behaviour change charity which has been running for many years and has implemented many successful programmes for households. The programmes are innovative and contain a wide range of environmental change activities including waste, water and waste over several months. Behaviour change is actively measured through energy use monitoring. Over 4000 households have participated in the scheme since 2000 and it is claimed that these households have used 21% less energy, lowered their CO₂ emissions by 17% and reduced their waste by 20% (NB these figures are estimated).

Case Study: Energy Saving Trust 'Green Communities'²⁶

Between 2008 and 2010 the Greater Manchester Energy Saving Trust Advice Centre provided bespoke support to two community groups, one in Trafford and the other in Stockport. These established community groups were provided with support in targeting a small number of households in their local area to receive discounted loft and or cavity wall insulation. The projects were successful in encouraging households to install measures. Behaviour change was measured both directly and indirectly through the number of households that insulated and achieved CO₂ emission reductions.

3.5 Keep it simple (Stern's step 5)

Information and advice provided to the consumer, and the actions that they are asked to undertake, need to be kept as simple as possible. The lack of clear and concise information to consumers can result in confusion which can become a barrier to changing behaviour. A few key messages need to be identified at the start of any behaviour change programme and these messages need to be shared, with consumers using terms that they are familiar with, and actions that are easy to take and incorporate in their daily activity.

Issues surrounding 'keeping it simple' were discussed in the workshops of the Behaviour Change conference held in February 2011. There was a consensus regarding the importance of using plain English and unambiguous language. Excessive technical information or confusing information can dissuade consumers from acting at all. Many social housing initiatives like the Relish™²⁷ project in Worthing provide households with easy to read, advice packs providing handy hints and tips which can be topped up with monthly energy update meetings and specific ongoing advice. The project focussed on communicating the benefits for

the participants, and targeted all members of the household.

Evidence showed that household which received physical measures and energy awareness education were able to achieve higher cost savings on their fuel bills than household that only received physical measures.

Case study: Energy Neighbourhoods, Germany²⁸

The aim of the Energy Neighbourhoods project was to inspire and encourage communities to reduce their energy consumption through changes in behaviour. Eight to twelve households form a team and each team competes to win a prize. In order to do this they must achieve energy saving of 8% within six months compared to the previous year. Each team was coached by a Team Master who pulls the team together and offer good incentives. They also assist households in measuring their energy consumption and savings. The teams were also supported by the local authority and project partners through informing citizens about energy saving, and organising information events. Nearly 6,000 households from nine countries took up the challenge and the teams achieved an average saving of 10% with the winning team (Sweden) achieving a 37% saving through measures such as energy saving lamps, disabling standby settings and changing their heating habits. (The total project cost €1,198,331). Factors for the success of the project were stated to be:

- Strong support from energy masters and partners;
- Group actions and social ideas of the project enabled participants to exchange ideas and access constant support; and
- Constant information and updates to maintain motivation provide energy saving tips and maintain the competition.

3.6 Provide quality assurance (Stern's step 6)

The success of retrofit programmes are often measured by hard outputs such as tonnes of CO₂ saved, the number of loft spaces or walls insulated and rated output of installed renewable technology. However, it is more challenging to ascribe a change in behaviour to a specific intervention. Even when an individual appears to change in response to an intervention, there are multiple influences that may have contributed to this. Therefore a range of measurements are required when evaluating the impact of behavioural change initiatives. These should include the quantitative physical conversion statistics and qualitative measures provided by verbal feedback and surveys. Lifestyle changes, purchasing habits and attitudes can be compiled in this way to build up a picture of individual behaviour during and after the programme has taken place.

Stern's step model recommends that the progress of the retrofit scheme should be monitored on a regular basis. This enables the project managers to change the parameters of the scheme to respond to the individual characteristics of each neighborhood. For householders the feedback can offer essential reinforcement, either as an encouragement to keep up the good work, or as a spur to keep up with peers. Regardless of performance, evidence that others are working towards the same goal is often enough to motivate continual effort to save energy in the home.

Many case studies are valuable for their descriptive evidence of the tactics that have been employed to

change behaviour. However, most have not carried out detailed monitoring beyond the immediate outcomes such as the degree of householder participation and the extent of energy. Longer-term monitoring is frequently absent due to the lack of resources beyond the conclusion of the project. As a consequence, there is a risk that policy-makers will question whether investment on behaviour change is worthwhile. The longevity of the interventions should be a key consideration when making this judgement.

These 'back end' considerations are vital, but 'front end' parameters also need to be captured. Wherever possible a retrofit initiative, which has a behaviour change element, should attempt to understand the subject group. This should include demographic, economic, environmental and social data as well as an idea of the affinity for community participation. In addition designers should try to gain an insight into attitudes on energy and climate change in the neighbourhood through a face-to-face questionnaire. This exercise can establish a baseline for the programme as well as serving as a recruitment device for those interested in becoming more active in their community.



When repeated over the life of the project and beyond this activity will serve as a record of the impact of the behaviour change programme on both the short and longer term habits and attitudes that may have been affected.

The consulting engineer Arup and the University of Salford have been working with social landlords to calculate both the environmental and social return on investment from regeneration programmes which include energy saving interventions. The monetary value of lower energy bills as a result of retrofit programmes is just the tip of a data “iceberg”, and the methodology being tested could help to uncover some of the hidden value of these initiatives.

These might include; health improvement impacts, life change improvements as a result of higher disposable income levels, greater self-esteem as a result of high levels of interaction with community members.

A number of projects have sought to build in monitoring and feedback as part of the project including:-

The Smart Meter Project²⁹ - Run by the Greater Manchester Commission for the New Economy, this project measured the energy usage in participants’ homes and encouraged reduction by giving householders web linked electricity monitors, and supported them in how to use them.

Energy Expert Programme, Finland³⁰ - This programme aimed to increase energy efficiency at household level by training local people to act as energy experts within the dwelling where they lived (either rented or owner-occupied housing, both private and social). More than 3,000 energy

experts were trained, covering 38,000 tenants. The project found it was beneficial to provide economic incentives such as water and energy cost rebates for residents, especially those in social housing. In buildings with active energy experts, on average, energy conservation for heating increased 5%, electricity consumption decreased 10% and water consumption decreased 20%.

Watford and Three Rivers Energy Agency 2002-2003³¹ - House condition surveys amongst private rented properties in the area showed low levels of energy efficiency (using the SAP rating) indicating that homes in this area are colder than average and that fuel bills are higher than average. Objects of the project included:

- To increase the quality of life of residents by the installation of energy efficient measures and by increasing the uptake of grants and other energy saving measures.
- To target West Indian and Muslim communities who may be harder to reach and so do not always benefit from energy efficient and fuel saving measures.

The project focused on face-to-face advice via energy efficient awareness surgeries at community centres, sport areas etc, workshops on energy efficiency, damp and condensation and providing full information on grants available and discount schemes. The success of the project was calculated based on the number of events attended, presentations given and workshops held. Cost and CO₂ savings were estimated based on the number of Home Energy Checks completed.

4. The Formation of Effective Partnerships

4.1 The Retrofit Partnership Landscape

A large part of a successful behaviour change programme revolves around the ability of designers and policy-makers to gain the trust and commitment of householders. The emerging evidence suggests that this is something that it is difficult for individual organisations to deliver on their own. Some have the resources and the technical ability, others have access to information about housing tenure, type and location, while yet others have an understanding of local householder needs and attitudes, and an affinity with the people. A comprehensive retrofit programme would need to include all of these attributes in order to be successful. In fact, the large number of initiatives from different funding streams directed at different parts of the community has produced a confusing landscape for householders. The Sustainable Development Commission (SDC)³² investigation into neighbourhood retrofit 'The Future is Local' concluded that 'the myriad sources and providers make it difficult to understand what resources are available. This can dampen enthusiasm for projects. The multiplicity of providers also makes it hard to understand whether the support is meeting user needs, particularly those of communities.

The SDC work recommended that neighbourhood partnerships should be formed to ensure retrofit projects are successful. This has obvious practical (project management) attractions, but there is also merit in this idea from a behaviour change perspective. Different bodies and intermediaries can play different roles to gain the trust of householders. Some may carry trust through authority, while other may gain this through brand or by shared experience.

There are three main partner groups emerging from the preparation period prior to implementation of the Green Deal. These are:

Energy companies and associated suppliers
Those responsible for residents, mainly local authorities and landlords

Those with an affinity with communities, including community and civic society groups, and academics

4.2 Local Authorities and Registered Social Landlords

4.2.1 Local Authority Initiatives

Climate change and energy conservation schemes have been promoted by local authorities and social landlords for some time, particularly since the Government has required evidence of carbon reduction through performance indicators. While most have been designed as works interventions without a behaviour change component there have been some notable schemes including:

- *Library loan electricity monitor schemes* - At least five local authorities are running schemes where householders can borrow real-time electricity monitors. The monitors come with energy-saving tips and while plans to measure household electricity consumption before and after the loan period have not been possible, Manchester City Council is trialing this approach in Chorlton library.
- *Eco-Homes* - These are properties that have taken advantage of grant money from various sources to show how a full range of technologies can be applied in a classic house type such as a terrace or semi-detached building. Properties are used by councils to showcase sustainable living and not necessarily to exemplify the way houses can be modified. They allow householders to visualise the effect of different energy efficiency measures, and seek to encourage individuals to install some of these measures in their own homes.

Energy Saving Trust advice centres (ESTac) - For several years, Manchester City Council has hosted an ESTac which provides guidance and support about energy efficiency advice in the home. The Centre does this via a free phone advice line, and at community, business and local authority outreach events. Other support provided by the advice centre includes:

- online home energy checks;
- literature on a range of topics such as loft insulation, cavity wall insulation, recommended products, solid wall insulation and heating controls; and
- referral to an accredited installer.

4.2.2 Social housing schemes

Social landlords are required under the Decent Homes Standard to refurbish tenants' houses to specified levels of 'thermal comfort'; but many go beyond this minimal requirement. Increasing the thermal efficiency of houses brings occupancy costs down, a major goal for the sector. However, a small number of Associations have tried to combine physical improvements with behaviour change initiatives.

Case Study: Relish™²⁷

The Relish™ (Residents 4 Low Impact Sustainable Homes) scheme in Worthing, Sussex was initially a 12 month pilot programme which set out to show how a pragmatic and cost effective approach to retrofitting can not only meet the Decent Homes Standard, but can also contribute to sustainability and fuel poverty agendas. The project targeted four very similar properties with residents living in the properties. During the 12 month pilot £6,500 was spent on each home in addition to the decent homes works. Selected homes also received a tailored educational programme. Energy reductions were measured against each household's historic annual

energy consumption. The energy use of each household was remotely monitored. The households that received energy saving advice were provided with an advice pack topped up with monthly energy update meetings and specific ongoing advice. The results showed that a combination of interventions was the most effective way to change energy consumption behaviour. Savings achieved by the households were as follows:

Property	Measures	Saving
A	Works and education	£367.72 (29%)
B	Works only	£38 (3.9%)
C	Education only	£-17.40 (-1.9%)
D	Education only	£223.44 (18.1%)

4.3 Community and Voluntary Sector Groups and Universities

Community and voluntary sector groups can have a vital mediating influence in communicating the climate change message within communities. This influence was highlighted in the Green Alliance report 'New Times, New Connections'³³ which stated that 'it is not possible to crack climate change without reinvigorating civic responsibility. We will never be able to make our lifestyles more sustainable without the social cohesion that makes it feel good to be doing these things as part of something bigger'.

The assumption is that local groups are made up of people from the community who are more likely to be more trusted by the people they are trying to influence than, for example energy companies or

local authorities. However, a further benefit of relying on local groups as climate change intermediaries lies in their staying power. The report explains this by saying that ‘the on-going interaction means that behaviours are more likely to be sustained over the long-term, as they benefit from collective support and positive reinforcement’.

National and local energy conservation initiatives run by local groups have been in existence in Greater Manchester for some time. A selection of these includes:

The Energy Academy - Action for Sustainable Living working in Trafford, Stockport and Manchester ran this project to investigate whether local volunteers would have an influence on their immediate community on energy conservation issues, and help to shape new European guidance for behavioural change interventions. A number of volunteers attend local events and spoke to community groups, organised pub quizzes and music nights to engage local people about energy efficiency.

- *Eco Teams* - Global Action Plan (GAP) facilitated this programme which worked with small groups of householders to support them through a range of environmental behaviour change activities including energy, waste and water over several months.
- *Sustainable lifestyle projects* - examples include Rochdale Earth Café, Bolton Green House, Oldham Saddleworth Community Hydro, Salford Lower Kersall and Spike Island Grow Cook Eat.

4.4 Role of the Private Sector

Increasingly, the private sector is developing a role in the both the funding and delivery of behaviour change campaigns. It will be increasingly important in the future that strong partnerships are established between the public and private sector in order to

reach a large number of customers and to ensure customer confidence in the advice and services that they receive. Private sector support will also be essential for the development of supply chain measures, and potentially for the delivery of face-to-face advice to customers at home. Both Eon and British Gas have provided community groups with funding to develop energy efficiency projects.

*Eon Sustainable Energy Fund*³⁶: The fund provided grants of up to £20,000 to community groups and not for profit organisations to implement sustainable energy projects in their buildings. Specific groups were targeted including education, vulnerable people and people living in fuel poverty.

*British Gas Green Streets*³⁷: British Gas has made £2 million worth of funding available to 14 community groups to invest in innovative energy efficiency projects. The funding can be used to develop micro generation and implement energy efficiency measures. The community who does the most to save energy, generate energy and engage people locally will win £100,000.

4.5 The Need for Skills and Training

The most pressing requirement for the project team is to possess the skills to deliver behaviour change, regardless of the lead agency in any partnership. Individuals on the front line of these programmes need to be able to convey information in a way that is both authoritative and trustworthy, and have the ability to build a relationship with each participant. Consequently, behaviour change initiatives will only be as effective as the individuals that interface with the householders. There have been a number of recent reports considering skills and training required for those providing energy advice. A report for the Energy Efficiency Partnership for Homes in 2010 concludes the following are required:

- Enhanced technical knowledge;
- Comprehensive practical knowledge of technologies; and
- Knowledge of certification standards for installation³⁴

In the report's review of the existing sources of advice, the recommendations for defining the best way forward include a re-evaluation of skills, for example a points-based system developed to distinguish between different levels of expertise, continuous professional development for new technologies and the establishment ongoing monitoring and accreditation.

Appendix B contains more information on the skills and training requirements that are likely to be needed in the future. Much of the emphasis is currently being placed on the planned Home Energy Advisors for the proposed Green Deal; to be implemented in 2012. Current training packages should be reviewed for their appropriateness for different groups with a view to monitoring quality of provision.



5. Conclusions

The research and case studies that the reviewed for this report has lead to the following conclusions.

1. It may not be possible to change a householder's mind about investing in energy saving measures and behaviours. However, it is possible to change the context in which people make decisions about this issue.
2. Context change can be achieved in a number of different ways but should be focused on three key mechanisms:
 - Better information, education and awareness
 - Innovative and cost-effective incentives (the nudge element)
 - Building the capacity of the intermediaries (including community groups) to support and reinforce energy saving decisions (the think element)
3. Any attempt to encourage behaviour change towards implementing a retrofit measure must be tailored to the specifics of the individual and their community. This is particularly important when dealing with the vulnerable households and those with special needs.
4. No single organisation is likely to succeed in a retrofit programme with a behaviour change component. Neighbourhood partnerships between (for example) energy companies, local authorities, community groups and academics will be more likely to deliver higher numbers of houses that reduce greenhouse gas emissions over a longer time period.
5. Community based working is likely to be more effective than relying on large scale campaigns. Such campaigns make messages relevant to the target audience and will benefit from peer influences on those that trust the judgement of those around them.
6. Interventions should start with positive messages and continue to emphasise the advantages to the householder throughout the programme. Gains may be in the form of immediate financial savings, non-cash rewards, 'feel good' factors gain from collective working with friends and neighbours and recognition from authorities that the area has made a significant contribution to civic life.
7. Householder engagement needs to come from a trusted source. Where there is little or no capacity in a neighbourhood to offer this recruitment and training should be offered to respected and motivated champions. Champions may come from any community association, not necessarily one devoted to pro-environmental action.
8. Investment in establishing and maintaining local environmental action should run in parallel with each retrofit programme.
9. Incentives should include rewards that have sustainable value and can be offered from other public policy strategies such as the health, education and transport.
10. Targeted information needs to reassure households of the benefit of the activity and reassure them that the measure is the right intervention at the right time. Others may need to understand that the work they have done to date is incomplete and that additional measures need to be installed. Monitoring and evaluation of programmes should be built into any retrofit activity and incorporated from the start. Regular feedback should be provided during and beyond the end-date of the programme.
11. Behaviour change strategies can assist in enhancing and influencing other forms of environmental behaviour including purchasing and life-style habits. This in turn can have a marked effect on the local and sub-regional economy.

6. Recommendations

Recommendations have been developed following the compilation of evidence by the Greater Manchester LCEA Behaviour Change group and the behaviour change stakeholder event held on 15 February 2011. The recommendations should be adopted to achieve higher levels of retrofit investment in domestic properties and to bring about long term behaviour change which is more energy efficient.

The following recommendations are made to inform those responsible for developing strategy and implementing behaviour change programmes.

Ref	Recommendation
1	A properly planned and resourced behaviour change strategy must be included by the partners of any retrofit programme before public funding is committed to the project. The three main elements of the retrofit programme; better targeted information, incentives, and local well resourced support groups should all feature in the strategy.
2	Behaviour change should be incorporated in the development of the Green Deal for Greater Manchester.
3	Retrofit partnership should comprise a group of organisations that are collectively capable of implementing the strategies that can fund and deliver not only the physical measures, but understand the target community and have the skills necessary to engage with householders.
4	Programme coordinators, energy advisors and those playing customer service roles should be properly trained in sufficient number to meet the need of programmes.
5	Monitoring and evaluation plans should be in place before any retrofit programme begins. Regular feedback on progress should be offered to householders on a continual basis through and beyond the end date of each programme. Evaluation that captures cumulative progress across the whole of Greater Manchester (such as overall reduction on the carbon footprint of the conurbation) should be part of this work.

6	Incentives should be designed and secured to suit each neighbourhood before the project begins. Information designed to help householders to decide on priorities for their home should be tailored for each intervention area.
7	Programmes should use a range of community networks and trusted sources to help with the development and delivery of energy efficiency information or to signpost services. The messages need to be delivered face to face and be reinforced over time.
8	A co-ordinating body for retrofit programmes should be set up and resourced.
9	The feasibility of creating a levy on retrofit programmes, to support innovation, research and co-ordination work on behaviour change, should be investigated.
10	A good practice behaviour change guide for social landlords should be produced to assist them in implementing the recommendations of this report.
11	The scope and potential for joint collaboration with the Utility Companies should be explored and developed as a priority. Possible areas to consider include promotion and campaigns, advice, training and community engagement.
12	There should be a focus on combating fuel poverty and in identifying, advising and assisting households struggling with fuel bills and/or those who could be considered to be at risk. A coordinated approach between the utilities companies, health and housing sectors and other agencies should be developed further.

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 - It meets the current statutory minimum standard for housing (i.e. the dwelling should be free of category 1 hazards under the HHSRS)
 - It is in a reasonable state of repair
 - It has reasonably modern facilities and services
 - It provides a reasonable degree of thermal comfortwww.communities.gov.uk/documents/housing/pdf/138355.pdf
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- Over 95% had undertaken one or more of the top ten energy saving tips
 - Over 78% stated the energy saving actions had saved them money
 - 17% had contributed to related consultations / other campaigns
 - Over 70% had encouraged / supported other reduce energy in the home
 - Over 50% had encouraged / supported others take public transport
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Appendix B: Training and Skills Requirements for Energy Advisors

Current Landscape for Advice

Energy Advice Providers

There are many advice providers currently operating in the field. They do not all claim to be energy advisors, but nevertheless they are in a position to influence households. Nationally they have been identified as:

- Energy Saving Trust
- Energy Suppliers
- Domestic Energy Assessors and Home Inspectors
- Large Retailers

Locally/Regionally they have been identified as:

- Local Authorities
- Housing Associations / Registered Social Landlords
- Local / Regional not for profit organisations
- Small scale local organisations
- Installers, builders, tradesmen

An addition to this list includes agencies which provide fuel supplier/fuel debt advice. This advice

should be linked into energy efficiency advice as part of the solution to fuel debt.

The different levels of advice of energy efficiency advice can be categorised as follows:

Level 0: All marketing and information that raises awareness of the need for action

Level 1: Generalised information on how to take action

Level 2: General advice about the home in question without a home visit

Level 3: Detailed advice specific to the home in question involving a home visit

Level 4: As Level 3 plus support to implement actions

Existing qualifications and courses for energy advisors

To date the City & Guilds 6281 (previously 6176) Energy Awareness has been recognised as the baseline for energy advisors in the fuel utilities, Energy Saving Trust Advice Centres, local authorities and other advice providers. The planned 'Green Deal' will include Home Energy Advisors at its core, and these will require a higher level of qualification. However, there will continue to be advice provision at different levels from several providers, so it is important to consider the training and skills needed for this broad range of provision.

Current certified course include the following:

- C&G 6281-01 Energy Awareness (Level 3)
- C&G 6281-02 Renewable Energy in the Home
- C&G 6049 - Provide Energy Efficiency Services (NVQ)
- Home Energy Advisers (Level 3)

There are several training packs and courses available for community groups and tenants' groups which are not certificated. For example:

Tenant Empowerment Training: The Energy Saving Trust and the Housing Corporation Working as an energy champion in your housing association: NEA Keeping Warm in Your Home A Housing Association's Tenants Guide: NEA

Short courses from NEA include:

- Modular Energy Awareness and Fuel Poverty
- Fuel Poverty in Social Housing

Energy Saving Trust Endorsed Advice

The Energy Saving Trust (EST) provides an Endorsed Advice service for organisations which work to the quality standards approved by EST. Where third party organisations can demonstrate through assessment that they meet the standard, EST will publicly endorse their service. To ensure continued adherence to their standard past an initial assessment, EST conduct regular monitoring. This is both to protect the reputation of their brand as well as to help to ensure that third parties are fully exploiting the opportunities to save energy with each customer. EST states that Endorsed Advice services are suitable for any organisation providing energy saving advice to consumers, whether over the telephone, face to face, in the home or in store.

Development of qualifications for the 'Green Deal'

The Government's Green Deal is the new approach to domestic energy efficiency. The Green Deal framework will enable private firms to offer to consumers energy efficiency improvements to their homes at no upfront cost, and recoup payments through a charge in instalments on the

energy bill. The Green Deal is to be launched in 2012.

It is envisaged that Green Deal Home Energy Advisors (HEA) will be key, and in many cases they will be the first customer contact with the scheme. The expectation is that the HEA will be a skilled and qualified advisor who will encourage and motivate householders to make both lifestyle changes and improvements to their properties. It is likely that access to Pay as You Save (PAYS) scheme, where households could receive up to £6,500 (under review) to make energy efficiency improvements to their homes, will be agreed and arranged only through a registered HEA. Green Deal advisers who hold the Level 3 Certificate - Energy Advice in the Home will register with an Accredited Body to become authorised HEAs. They will undertake energy audits for individual households. From these the HEA will produce a report identifying and recommending ways in which individual households can reduce their energy consumption, thereby reducing their fuel bills and carbon emissions (likely to be an EPC or similar). Recommendations will go beyond physical measures relating to the building and include changes to occupants' behaviour to reduce energy use. A follow-up will then take place. The National Occupational Standards (NOS) for Home Energy Advisors were published in 2009, but are currently undergoing review as the development of the 'Green Deal' progresses.



The National Occupational Standard includes:

- Work in a safe, effective, professional and ethical manner.
- Prepare for the provision of energy advice.
- Conduct site visits to inspect property and provide initial energy advice to clients
- Prepare and explain Home Energy Audit reports.

- Monitor the implementation of energy advice recommendations and provide follow-up services.
- Promote community action to reduce energy consumption.
- Promote low and zero carbon energy technologies.

Appendix C: Behavioural Change Seminar: Workshop Notes

Workshops were held focusing on different aspects of behavioural change. These were:

- Incentives and influencing factors;
- Communication and marketing;
- Measuring and evaluation;
- Practical delivery; and
- Skills and training.

Cross cutting themes discussed in the workshops were as follows:

- The need for community champions and community focused activity;
- Using existing networks to deliver messages;
- Using Energy Performance Certificates (EPCs) to assist behavioural change;
- Using smart meters and thermal imaging to gather data and encourage behavioural change;
- Customers should be praised for their achievements and improvements in energy saving acknowledged;
- Sharing of best practice; and
- Importance of effective monitoring and evaluation.
- These issues are highlighted and discussed in more detail within the report.

Incentives and Influencing Behaviour

- Reduce council tax to incentivise the take-up of certain measures

- The benefits and incentive components of Green Deal is perhaps too far in the future to be of impact to householders. There should be a way of making this 50% future incentive, but also 50% present day (by free goods, access to things, discounts, etc.)
- Need to incentivise house buyers to buy a more energy efficient house (possibly through EPCs).
- Source credibility is a key issue:
- Support Green Groups to become social enterprises – these then become advocates for energy efficiency drives.
- Utility companies are not considered to be credible.
- Build on skills already apparent in the communities where officers and volunteers have been working on cohesion and ASB i.e. ‘Community Guardians’ – certain existing roles need tweaking not re-inventing.

Train community champions

Embed these issues within organisations to ensure staff become more familiar and adopt efficient practices to ensure greater source of credibility. The community need to be able to develop and determine their own incentives, thus providing what people really want. Incentives that are top-down will have limited impact

Incentives need to be relevant to the recipient. Area Action e.g. to incentivise solid wall insulations. Potential to include local credit union.

Training in low carbon technologies could be an incentive. Unemployment and labour markets are changing in this area which reflects the need to upskill people. These people could be offered free or discounted training in order to engage them and provide the skills required.

Whole communities need to be incentivised by providing support which is difficult when overshadowed by cuts. RSLs could be a key player in the provision of this support.

Communication and Marketing

- It has not yet been decided or a consensus reached as to what are the key messages the need to be delivered to customers. We need to be clear about this before we can progress.
- Need to evoke a sense of prestige/'keeping up with the Jones' for people who install energy saving measures/follow a sustainable lifestyle. This will encourage households that are not sustainable to aspire to this way of life.
- Face-to-face discussion with customers is very important. Existing networks could be used to achieve this, such as front line workers. This would involve cross agency working - there was some concern regarding the effectiveness of this. The people delivering these messages need to be trusted by the customer and impartial.
- The establishment of community champions and community focus is a good means of delivering behavioural change messages as residents tend to trust their neighbours and peers. Tenant associations may not be the best method to deliver behavioural change messages, as they are often attended by the same small group of people. It is necessary to use existing channels within the local community.
- Customers need to be provided with better information eg there is often a small bit of information on the back of energy bills regarding the variation of energy use compared to the previous quarter. This should be made more prominent to customers.
- Social media (e.g. facebook, twitter), TV and radio were classed an essential methods of communication.
- Legislation is a potential way to achieve behavioural change. Private landlords could be made to install measures through an accredited landlord scheme.
- Incentives could be provided to customers who install measures and change their behaviour through a loyalty card scheme. Benefits could be low CO₂ e.g. train travel.
- Retrofit work (e.g. through the ERDF funding) is a trigger to behavioural change. It is a way in to talk to customers and more energy efficient homes that are cheaper to run could be easier for social landlords to let. The high cost of energy is also a trigger.
- What should the key messages to residents be? For affluent residents the money saved may be insignificant compare to residents in more deprived area. If residents save money and CO₂ on their energy bills they may then go and spend this extra money on CO₂ intensive activities therefore achieving no overall CO₂ saving.
- EPC's could be used to inform households of their energy use and to compare 6 months later to see what effect any changes have had.
- Messages need to be clear, positive, practical, and relevant, use practical examples and be in plain English.
- Schools/Eco schools could be used to communicate messages regarding energy efficiency.
- Smart meters in RSLs have not encouraged people to change their behaviour. Considered by residents to be a novelty for a few days and then no longer used.
- Could increased property value be used as a benefit of installing measures?
- Behavioural change needs to be facilitated rather than instructed. People need help to make the change easy, as is the case with recycling.

Measuring and Evaluation

- Explore the potential of working with energy companies to share data relating to home energy use. This raised issues of data privacy, but data can be made anonymous.
- Smart meters were regarded as vital to enable data to be captured remotely online, rather than relying on utility bills or access to the home.
- Housing associations are already using software (an off the shelf product) to log household interventions and match, using postcode and GIS to plot on a map. The map is used to identify behavioural trends. Could this software be extended to work for this programme?
- Different evaluation models are needed for different measures. In some case a small sample size can be used to assess more detailed perceptions and lifestyle changes, this cannot be achieved easily for GM as a whole or for all households involved. If a sample is chosen it needs to reflect a cross section of:
 - Geography (across LA areas)
 - Age
 - Socio-demographics
 - Type of housing stock
 - Fuel types
- Long-term measurement is important. We need to know if people's behaviour has changes for good eg 3 years plus
- The low-energy loyalty card. The scheme should learn from the big brands on the high street and develop a card that enables individuals to earn points for low energy lifestyles. They only earn the points if they provide data to monitor and evaluate performance. This could be extended to a low-energy iphone app or web interface.
- Start with the obvious and easily quantifiable: energy use per household. This can simply be converted to money/CO₂ saved to individuals and GM as a whole.
- Additional measurables that are desirable to consider include:
 - Jobs created and training
 - Level of engagement with community, volunteering
 - 'Social return on investment'
 - Green lifestyle i.e. buying local, reducing flights, purchasing decisions
- Households need an incentive. Most people agreed with this, but not all. One way of doing this is reward households with a status: Bronze, Silver or Gold standard, similar to Manchester's Environmental Business Pledge scheme. Creating a means of acknowledging progress and encouraging households to aim high would be welcomed.
- Measure why people do not engage or do not change their behaviour. We need to learn what works, but also find the barriers to non-engagement.
- Monitoring and evaluation can be expensive. Only measure what you can use and what is practical and essential to demonstrate effectiveness – you cannot do everything.
- Important to learn from other GM schemes or best practice ie Salix Homes Retrofit scheme, New Economy Smart meters, Manchester Digital Development Agency programme and findings of TSB Technology Strategy Board work
- Need to link to the health and wellbeing agenda and monitor improvements to health.
- Success may result in people maintaining energy consumption but keeping warm and more comfortable. This should not be seen as unsuccessful but it will not result in CO₂ savings.
- Should the behavioural change way precede the physical retrofit work? You need to win hearts and minds first.

Practical Delivery

- Delivery through community projects and programmes - trust and communications important
- 'Energy Champion schemes' within communities and organisation, employee engagement works well
- Collaboration and cohesion around cultural activity
- Best practice sharing and coordination - face to face advice and other access ie not just web
- Full mapping of activity/projects in GM required sharing best practice
- Demonstration models eg eco-homes occupied and not, or co-ordinated tours
- Develop an LCEA web portal - user generated like wikipedia, GM stats by area
- Social media/online eg Twitter, facebook
- Thermal imaging/visual – this must include interpretation
- Energy audits with LA assistance, but there are cost implications
- Working with schools eg consultants works with young people to train adults and curriculum
- Area based competition - published results and progress
- Use and develop an old homes/super homes network
- 'Portable' eco-home. Its principles can be used in different areas as eco-houses are spread
- Student culture and education - working with Higher Education.
- Monitoring and evaluating behaviour is important.
- Climate change films eg people's choice media

- Lottery funded schemes
- LA should have duty to work with communities on green deal
- Access established groups e.g. over 50's, antenatal, Surestart, schools, employers
- Use of volunteers due to low-cost/budget
- Energy house experiments such as the Salford Energy House – how does this fit with reality?
- Housing Associations' working with communities
- Cross over with the other workshops:
- Skills & training - Frontline training (Housing Associations), trades people training ie gas engineers or builders.
- Marketing communications messaging should be aspirational/desirable as at the moment it is not. Build on social unacceptability

Training and Skills

- Important to have a structured framework for training home-visiting staff whether or not they are part of the 'Green Deal' system e.g. boiler fitters, social care. Within this there needs to be clear levels to allow appropriate degrees of expertise according to circumstances.
- Must have single accreditation and endorsement approach.
- GM must ensure that local colleges are correctly linked in
- Single trusted advice source required that is independent and bespoke – this must be in place to act as a 'second opinion' or to provide verification of information that has been provided through Green Deal etc. Very important to show some clear delineation between advice and sales.
- Look for opportunities to retrain/re-skill staff given current redundancy/labour market situation

- Energy advisors must ‘walk-the-walk’ and believe in what they are championing.
- Very important to utilise existing networks to embed energy advice throughout many different services. Tailored training (within framework) is required to achieve this.
- Educational opportunity through schools – starting with integration into National Curriculum through to demonstrating career opportunities in the Retrofitting industry.
- Training must ensure that advisors understand the bespoke nature of what is required. Advisors must have a proper appreciation of lifestyle as well as technical considerations to allow most appropriate advice to be given.
- Ongoing mentoring skills required as success will not be achieved through a single hit approach.

Groundwork UK
 Guinness Northern Counties
 Harvest Housing Group
 KHT
 Manchester City Council
 Manchester Knowledge Capital
 Manchester University
 Merci
 Mossbank
 New Charter Housing Trust Group
 Northwards Housing
 Oldham Metropolitan Borough Council
 Parkway Green Housing Trust
 Places for People
 Rochdale Borough Council
 Salford City Council
 Salford NHS
 Salford University
 Salix Homes
 Scottish Power
 Six Towns Housing
 Stockport Metropolitan Borough Council
 St Vincent’s Housing Association
 Summit Skills
 Sustainable Change Co operative
 Sustainable Development Commission
 Tameside Metropolitan Borough Council
 The Manchester College
 Trafford Council
 Urban Research Collective
 Walker Simpson Architects
 Wigan and Leigh Housing
 Wigan Metropolitan Borough Council

Appendix D: Behavioural Change Seminar: Organisations Represented

Accent Group
 Action for Sustainable Living
 Adactus Housing
 Arcon
 Arup
 Bolton at Home
 Bolton Council
 Bolton NHS
 Bovis Lend Lease
 Carbon Co-op
 Contour Homes
 Cooler
 Eastlands Homes
 Emerge 3r’s
 First Choice Homes Oldham
 Fusion 21
 Greater Manchester Energy Saving Trust advice centre

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Report from the LCEA Behaviour Change Retrofit Group

For more information contact m.berry3@manchester.gov.uk

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