

# Low Carbon Communities Challenge

Interim Report 2010/11

July 2011

# Introduction

**This Report sets out the interim learning from the Low Carbon Communities Challenge (LCCC), a two year programme of action research involving 22 community projects<sup>1</sup> delivering low carbon measures in their local area. Covering 100,000 people living in 64,000 households, the LCCC is testing how combinations of low carbon technologies, community engagement and behaviour change can help drive and deliver the low carbon economy.**

The report draws on a range of perspectives and experiences - from the community leaders delivering the project on the ground to the local households and community members experiencing and living with the LCCC on the ground. It is structured around three key sections, as follows:

1. **Showcasing the LCCC** – an introduction to the programme, the individual projects and their headline achievements to date;
2. **The Household & Community Experience** – findings from research with households across the LCCC communities, looking at attitudes, behaviours and ‘what it’s like to live’ with low carbon technologies and measures;
3. **The Community Leader Experience** – reflections from the LCCC projects on their key challenges, barriers and successes;

Research and evaluation activities around the LCCC remain on-going, and the Final Learning Report will be published in 2012.

Background reports that are published alongside this Interim Report include:

- The full reports from Dialogue by Design and NEA;
- A report on the results of a REAP Petit survey designed to assess community carbon footprints;
- A report on research with those communities that bid for funds from the LCCC who were unsuccessful.

The LCCC is supported and funded by The Sciencewise Expert Resource Centre (ERC). The Sciencewise ERC programme, funded by the Department for Business, Innovation and Skills (BIS), helps policy makers to understand and use public dialogue to inspire, inform and improve policy decisions around science and technology. It consists of a comprehensive online resource of information, advice and guidance together with a wide range of support services aimed at policy makers and all the different stakeholders involved in science and technology policy making, including the public. The Sciencewise-ERC also provides co-funding to Government departments and agencies to develop and commission public dialogue activities. [www.sciencewise-erc.org.uk](http://www.sciencewise-erc.org.uk)

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<sup>1</sup> Two projects - Ballymena and Cwm Arian - were LCCC winners but were not able to complete their projects to the LCCC timetable

# 1. Showcasing the LCCC

This chapter focuses on introducing the LCCC – what it is, what it set out to achieve, and how it is being researched and evaluated. The chapter begins with the background context, followed by commentary by Professor Ken Starkey from the Nottingham Business School on the role the LCCC is playing in the development and delivery of policy. Most importantly of all, it showcases the 22 leading community projects which comprise the challenge and demonstrates how diverse the projects and their respective communities are.

## 1.1. Background and introduction

The LCCC is a £10 million, two year research programme involving 22 test-bed communities across England, Wales and Northern Ireland. The programme is funded by DECC, DETI, Welsh Assembly, and Sciencewise-ERC.

The invitation for applications for the LCCC was published on the DECC website on 28 September 2009. It was widely promoted through community networks, such as Low Carbon Communities Network, Transition Towns, and EST's Green Communities membership. The LCCC application process was split into two phases.

- Applicants to **Phase 1** had to deliver their programme of capital measures by the end of March 2010. DECC received 56 applications, of which the top 14 scoring applicants were visited by BRE who, on behalf of DECC, provided an onsite assessment. 10 successful communities were announced on 21 December.
- Applicants to **Phase 2** had to deliver their programme of capital measures by the end of March 2011. DECC received 239 applications, of which BRE visited the top 14 for an onsite assessment. 12 successful communities were announced on 4 February 2010.

The 'average' LCCC award was in the region of £400,000 - £500,000 per project, although this varied depending on the nature of the project. Some of the projects also received additional funding through other programmes, for example Nesta's *Big Green Challenge* or the London *Low Carbon Zones*.

The aim of the LCCC is to test community-scale delivery of low carbon technologies, measures and approaches that will help inform DECC's key policies and programmes – such as Green Deal and the Smart Meter roll out – as well as contribute to the Department's wider work around the 'Big Society'.

The LCCC has its origins in DECC's *Big Energy Shift*, a large scale public dialogue event which emphasised the need for householders to have access to joined-up 'packages' of support, delivered locally across their community (e.g. a mix of smart meters, demonstration buildings, community renewables, and whole house retrofits funded via household loans). While there is considerable diversity in the approaches of the LCCC communities, four characteristics are common to all projects and, hence, the LCCC as a whole:

- The projects are geographically targeted, **area-based** initiatives
- They involve **integrated packages** that provide a more joined up offering to householders

- They are testing **different models of community-scale delivery**, from projects which are led by community groups through to other projects which involve existing agencies (e.g. local authorities, energy utilities) delivering their services in a geographically-targeted way.
- The approaches draw upon **sociological models of behaviour** that emphasise the potential for social norms to nudge and trigger widespread, community-wide behaviour change.

A detailed evaluation and monitoring programme, involving five strands, has been designed around the LCCC to capture and disseminate key learning. The evaluation is standardised across the programme to enable comparisons between communities and, in addition, the presence of five control communities will measure the impact against a 'business as usual' scenario.

### **Strand 1: Energy Consumption Data & Carbon Saving Potential**

Tracking electricity and gas consumption in each of the communities, as well as calculating the theoretical carbon saving potential of the installed measures.

### **Strand 2: The Householder Experience**

Two pieces of research with households: (a) two household surveys in each LCCC area, one 'before' and another 'after' the LCCC interventions; and (b) a series of case studies with individual households, reported back via in-depth interviews, film footage and weekly blogs.

### **Strand 3: The Community Practitioner Experience**

Each project has an independent facilitator to hold local meetings and feedback on successes, challenges and barriers. They also enable a process of co-inquiry to help shape the projects' evolution and strategies for engaging the wider community.

### **Strand 4: Social Enterprise Action Research**

A number of the communities are receiving support to set up as social enterprises, as a result of funding from the Office of Civil Society's Social Enterprise Action Research programme.

### **Strand 5: Programme Evaluation**

This strand is focused on process and the way in which the Challenge was administered, with a particular emphasis on the Sciencewise-funded Community Practitioner Experience Strand.

## 1.2. The LCCC from a policy perspective

### Commentary by Professor Ken Starkey, Professor of Management, Nottingham University Business School, University of Nottingham

The Low Carbon Communities Challenge (LCCC) presents a fascinating example of policy-making in action.

In 2009 we conducted a review of policy-making for the Cabinet Office. In our report, we focused on what were then perceived in Whitehall as problems of policy-making, development and implementation. Our commission was to examine how **front-line knowledge** can be better integrated in **central policy development**. Our proposition, supported by our research, was that better engagement and connection with the front-line should be an integral part of policy design and that this would lead to more innovative and effective policies that were aligned with the needs and aspirations of front-line providers and their clients. Thus, we argued, implementation of policy would be improved as policy making would take more account of the front-line context (for example, competences, local conditions, the differing views of different stakeholder groups) and public confidence in policy would also be improved, building a more positive perception of government and civil service competence. In this way, a virtuous circle might be created, unifying the strategic vision that underpins policy making and the practical wisdom that exists at the conjunction of front-line and community.

We made a number of recommendations to promote connection between the centre, the front-line and the local level covering: work with Ministers; partnerships with key stakeholders; reshaping the policy making ethos; process and structures; capturing front line thinking; developing networks; and increasing awareness, experience, skills and capabilities to ensure an active circle of learning. We concluded that policy development needed to be re-conceptualised as a process not of the linear roll-out of centrally defined initiatives, with targets set at the centre, but as a process of **mutual problem exploration in partnership with the front-line**. We argued for a rethinking of the role of the civil servant as a 'networked public official' responsible for policy formulation, developing networks of learning and knowledge creation, translating and facilitating this process by tapping into front line evidence and experience.

In its response to our Report, we were tasked by the Cabinet Office to test different ways in which Departments were engaging with the front line in complex policy areas such as climate change and building capability for front-line engagement.

#### *The Low Carbon Communities Challenge as engagement with the front-line in action*

The LCCC initiative illustrates the complexities of front line engagement in complex multidisciplinary, multi-agency and multi-stakeholder environments. It is an emergent example of front-line engagement for better policy-making in action and, to the extent that it can continue to build upon and capture the learning that has already taken place, should provide a powerful example with generic lessons for managing complex policy challenges.

The LCCC set out with a specific process of engagement and network development through its 'Specialised Support Team', bringing together public, third and private sector organisations representative of the front line as well as representatives of the LCCC communities. This was driven by a policy champion who embraced the challenging role of network development during the project's early stages.

The process of learning from the demonstration communities was explicitly managed by the roll-out of meetings in communities, attended by DECC representatives, in which learning from the front line was captured. These meetings had a two-way function. They enabled civil servants to advise the communities and to learn from them. They were also a powerful meeting place for bringing public, private and third sector organisations together, to discuss, for example, the benefits of different energy saving technologies and the complexities of changing behaviours to capitalise on these technologies. Awareness of carbon saving was thus, and continues to be, disseminated, incentives ('nudges') refined, and the skills and capabilities necessary to keep the process moving forward reinforced.

The language and stories captured at these community meetings demonstrates the power of the LCCC process. One has a sense of a dispersed and growing community composed of a wide range of groups (public, private, community, rich and poor, urban and rural, cross-generational) fully engaged with the complex challenges of developing what they themselves describe as 'sustainable community', 'changing consciousness', 'empowering citizens', 'coming back into balance', 'mutual understanding', 'developing a better support infrastructure', 'communicating ideas', 'taking greater collective responsibility', with an over-arching collective vision of 'not just twenty communities but a blueprint for future action'.

#### *Emerging narratives of engagement – Big Society and creating shared value*

The LCCC communities provide a powerful example of how to build community in pursuit of collective action for mutual benefits. They have the potential to develop as a powerful social movement at the vanguard of change in the complex area of climate change and energy efficiency, uniting local, government and private sector partners. They provide an interesting example of a new location and architecture for redefining the area where government stops and civil society reclaims space. The search for sustainability provides the glue that brings the communities together, locally and potentially nationally.

The LCCC clearly demonstrates some of the Big Society aims of building up and building on the capacities of citizens, encouraging collective identity, and the ongoing negotiation of the boundaries between government, citizen, community and civil society. It demonstrates an opening up of public service to end-users/producers and a form of self-service in action with communities negotiating with government, the private sector and other stakeholders what is best for their local needs. It is also a powerful exemplar of communities taking ownership of the energy challenges they and all of us face. LCCC illustrates that one size does not fit all – different communities are developing their own solutions to their own problems and becoming aware, sometimes to their own surprise, of their capacity to take greater control of their lives and assume enhanced collective responsibility for their local community.

Through the integration of the activities of communities, business and policy makers, the LCCC is a good example of what Harvard Business School strategy guru Michael Porter describes as 'Creating Shared Value' – creating and expanding economic and social value through breaking down barriers that have previously 'divided' different stakeholder groups and generating collaborations across profit/non-profit boundaries. Judicious investment in this process can generate significant added public value. The return to communities, business and society demonstrates that the company performance and the well-being of communities can be closely aligned. As Porter expresses it: *'A business needs a successful community, not only to create demand for its products [in the LCCC's case, for Low Carbon technologies and services] but*

*also to provide critical public assets and a supportive environment*. A community needs successful businesses to provide jobs and wealth creation opportunities for its citizens'. There is potential in LCCC for identifying a range of different areas of future job growth.

The LCCC is clearly contributing shared value, engaging, for example, energy companies in tailoring their services to communities in ways that enhance company competitiveness while simultaneously improving both economic and social outcomes. Thus, social and economic progress can be seen to potentially support each other, with government's role being to ensure the right kind of regulation to encourage companies to invest in long-term value rather than short-term profit. The Big Society project and the search for shared value depend upon the heightened involvement of local communities in designing, developing and managing local services and LCCC provides significant evidence of this.

<sup>1</sup> Adebowale, V., Omand, D., Starkey, K. (2009) *Engagement and Aspiration: Reconnecting Policy Making with Front Line Professionals*. (Cabinet Office/Sunningdale Institute)

<sup>1</sup> *Listening to the front line: Capturing insight and learning lessons in policy making* (Cabinet Office)

<sup>1</sup> Porter, M. & Kramer, M.R. (2011) Creating shared value. *Harvard Business Review* January-February, 62-77.

### 1.3. Introducing the LCCC communities

This section outlines a key summary of activities in each of the LCCC projects, including the type of area, the focus on technologies and the size of the community.

#### ENGLAND

##### **Berwick upon Tweed**

In conjunction with Berwick Borough Housing, the funding is being spent on a retrofit renewable energy programme involving the installation of PV across 50 houses. The revenues generated will be reinvested in environmental and social programmes, including further renewable energy initiatives. £25k of match funding will support the Low Carbon Berwick Project to enable the development and implementation of a local Low Carbon Strategy and action plan. The project aims to establish Berwick as a Transition Town and will support a range of actions with residents including household energy monitor and advice schemes, principally via a volunteer work force.

Website:

##### **Transition Town Totnes**

'Transition Streets' involves 44 streets across Totnes (each with 8 households), chosen so as to represent the demographics and housing stock of Totnes. Participating households undertake a programme of behaviour change called 'Transition Together' which helps them reduce their home energy bills (and also looks at water, waste, local food and transport). Participants are then eligible to apply for subsidised Solar PV systems, with low income households harnessing feed in tariffs to enable the repayment of low-interest loans from the local authority.

Website:

##### **Low Carbon Living Ladock**

The project is a retrofit programme to upgrade homes, schools, community halls and businesses with a combination of energy efficiency measures and microgeneration technology, alongside the installation of a community-owned wind turbine. A community managed fund has been set up to ensure that the income generated is retained as a rolling resource that will benefit the wider community through further low carbon investment. In addition, a carbon sequestration project has seen over 500 fruit and nut trees planted to naturally absorb and hold carbon while providing a boost to local food production. The initial delivery of the project was led by the Cornish sustainable energy charity Community Energy Plus.

Website:

##### **Hook Norton**

The project is funding innovations across the 2500-strong community, including the local primary school (i.e. solar PV and solar thermal panels to provide hot water to different parts of the school, a heat recovery system, and upgrade of the roof insulation); households (i.e. interest free loans for a whole-house retro-fit of six homes; insulating and installing renewable technologies such as wood pellet boilers, air source heat pumps, solar PV and thermal panels on a further 20 homes and the village shop; the local brewery (i.e. installing a bio-diesel tank to supply bio-diesel fuel for the vehicles of 50 households and also to fuel the 3 diesel car pool

cars for the community); and a community wind turbine (i.e. installing a 40m Meteorological Mast to measure wind speed and a small 10-20kW wind turbine as part of exploring the potential for a larger community turbine). All these activities will provide income back in to a rolling low carbon fund so that the community can continue to take action for the next 10-20 years. [www.hn-lc.org.uk](http://www.hn-lc.org.uk)

### **Exmoor National Park**

The LCCC funding is being used by Carbon Neutral Exmoor to fund a range of exemplar sustainable energy projects including insulation, wood heating, solar PV, micro-hydro and wind power in villages that have been participating in community sustainable energy planning (Dunster, Parracombe, Porlock, Roadwater, Wheddon Cross and Wootton Courtenay). Using other funding sources, these villages are also working with others. For example, they have supported Dulverton, Timberscombe, Challacombe and Lynton in developing projects. A Low Carbon Communities Officer has been recruited by Exmoor National Park Authority to provide support to villages in developing local, low carbon plans to engage the community in making the transition to low carbon living, A revolving fund has been set up so that a proportion of the income generated by projects can be used to fund future low carbon initiatives. A knowledge sharing framework is being developed, which alongside the revolving fund should leave a lasting legacy for this project, enabling Exmoor to achieve carbon neutrality.

Website:

### **Lancaster Co-Housing**

Halton is looking to install a hydro turbine into the River Lune, and three solar roofs; and incorporate carbon saving measures in the renovation of Halton Mill, which will provide office and workshop space for local businesses. The profits, generated from the Government's clean energy cashback scheme, and from rents, will be ploughed back into further carbon reduction projects such as Halton Energy Network which will help households reduce their domestic carbon emissions.

Website:

### **Sustainable Blacon**

Sustainable Blacon aims to generate a model sustainable urban community with focus on green spaces, transport energy and social enterprises. There are two strands to the Programme which aims to assist people cut their fuel consumption and emissions by 20% by concentrating on behavioural change and in particular household energy expenditure: *Two Demonstration Houses* – so adults and school children in particular can see and touch improvements that they can make to their home and lifestyle and talk to local volunteers with support from paid staff and supporting advice organisations (e.g. Energy Saving Trust and Cheshire West and Chester Council); *Energy Management Programme* - This is a community-based education programme focussed on energy reduction and supported by the latest low carbon energy technologies. 150 households have been recruited to attend the 12 month programme at the end of which an optional energy efficiency makeover is available. The 150 is subdivided into three groups of 50 households each. One group has no additional energy technology ("control" group), the second has a real time device ("passive" group) advising on electricity use, the third has technology which permits programming of heating and electrical appliances ("active" group). The Programme also examines the social capital gain from this approach.

Website:

## **Whitehill-Bordon Eco Town**

The funding is supporting a programme of energy efficiency advice and interest free loans to support in-home energy saving improvements such as the installation of PV, double glazing and boilers. Under a separate project, loft and cavity wall insulation is provided free of charge to householders. The loans have proved so popular that the scheme is now oversubscribed with 27 applications. Members of the Eco-town team provided information and discussed energy-saving techniques with residents at popular local events (e.g. 'Wood Day', 'Apple Tasting Day' and the Christmas Festival) to raise awareness about the loans and encourage behavior change. The community project worker has also visited schools and community groups e.g. Brownies to talk to pupils about how they can make their homes more sustainable. The Environment Centre has also visited schools, distributed energy monitors to energy champions and provided energy savings tips to members of the community. The Eco-town team is in the process of leasing a shop in the shopping centre where we will set up an exhibition and provide a drop-in service for residents and businesses where they can come and chat about energy-saving measures.

Website:

## **Reepham**

LCCC funding has supported 18 community groups in the town to develop and deliver low carbon projects covering nine activities: increased thermal performance of buildings, renewable heating and hot water, low energy lighting, renewable energy, sustainable transport, local food, energy efficient appliances, recycling and water projects. The projects cover the full range of technologies and solutions including: insulation, air source heat pumps, ground source heat pumps (bore hole and horizontal) solar thermal and solar PV, underfloor heating, energy efficient boilers, biomass boilers, biofuel (from used cooking oil) for heating, low energy and LED lighting, wind power, low emission car club vehicles, electric vehicles, allotments and energy efficient appliances. These projects have been completed across housing trust properties, schools, churches and community buildings. Reepham LCCC projects are co-ordinated by a local community interest company. The projects have been developed and delivered by existing local organisations and community groups, with each community group having a community champion.

[www.reephamchallenge.org](http://www.reephamchallenge.org).

## **The Meadows**

The Meadows Ozone Energy Services is a company formed by local people in the Meadows and has aspirations to change an inner city area with multiple deprivation levels to become an exemplar to other similar inner city communities. The Meadows has a housing stock of approx 4000 houses with a mixture of housing types including over 1000 Victorian terraced houses that are hard to insulate. The project seeks to demonstrate that low carbon savings can help reduce fuel poverty.

They have installed Solar Photo Voltaic Panels on 25 social houses, 21 low income family houses and eight where the resident has paid fifty per cent of the costs themselves. They have also put installations on a local community gardens building and three local primary schools to ensure that the learning and the value is spread across the wider community as there is over 30 languages spoken in our community we need the children to help the parents and share their learning from the schools. Their energy assessor has worked with over 100 families who

have experienced fuel debt to install an energy cost meter and advise them on how to save energy. The three local schools are also with the support of British Gas becoming Flag ship schools for British Gas' *Project Green*.

### **Chale Community Project**

Bringing an entire rural, off gas community out of fuel poverty, with an integrated approach to reducing carbon focused around the intensive renewables retrofit of 67 homes on a 1970s housing estate using a mix of air source heat pumps and solar PV panels. Additional funding is being provided by the social landlord, Southern Housing Group, to ensure all properties are upgraded to Decent Homes+ standard, specifically targeting improved windows and loft insulation. The performance of the renewables technologies will be closely metered and monitored over different time periods.

It is estimated that as a result of the project, an additional 2,000 solar PVs will be installed on housing association and private properties on the Isle of Wight by the end of 2012. To maximise the impact of the project, the Ellen MacArthur Foundation is coordinating project management and communications, as well as supporting the provision of free consultancy on energy efficiency to all homes in Chale and a training programme for people interested in careers in the renewables and energy efficiency sector. The entire village will also benefit from a revolving community fund generated from the Feed-in-Tariff on a number of PV installations which will be used for future sustainability-related projects in the village.

### **Haringey Council**

An integrated approach involving a diverse range of interventions and partner organisations. Muswell Hill Sustainability Group provides strong community leadership with Haringey Council providing support and resources. The project includes solar PV installations on four schools to be used as a learning tool and to encourage behaviour change, a sustainable learning eco-cabin, innovative cycle parking, an eco-house display stand for public engagement events, and a community renewable energy company that has gained funding to generate income for carbon reduction measures in the community. The LCCC projects are building on action already taking place within the Muswell Hill Low Carbon Zone.

### **Middlesbrough**

A mixed tenure estate of 3250 people, is among the top 20% of disadvantaged areas in England. The LCCC funded Eco-Easterside project will save residents money on household bills by reducing energy use. Two wind turbines will be installed in the grounds of Easterside and St Thomas More primary schools, and other demonstration renewable technologies will be fitted to two community buildings, which will in turn generate income for the community from the government's clean energy cashback scheme. 150 homes will be fitted with energy monitors, and householders will be helped to make sure their homes have adequate insulation. Renewable energy systems – solar hot water and air-source heat pumps – will be fitted to 20 homes. Residents will also be encouraged to reduce carbon emissions by using sustainable modes of transport and growing more of their own food.

### **Ashton Hayes Parish Council**

In 2011, with the help of a DECC LCCC grant, Ashton Hayes built a low carbon sports pavilion with a bank of solar PV panels that are used to help charge a community owned electric

vehicle EV (Nissan Leaf). The building has extremely low energy use and will serve as an exemplar to the many visitors to the village and be used to help educate children on the practicalities of renewable energy systems - air source heat pumps and solar power plus intelligent building control and insulation. The EV will be managed via the Commonwheels system that also enables village residents to access fuel efficient cars when travelling around UK. The aim is to enhance rural transport for people 18 and over and encourage residents to save money by owning fewer cars while encouraging them to purchase more EVs. The community has also worked with the primary school to improve the building efficiency and constructed two new low carbon classrooms complete with PV arrays that will help to power the school and feed into the village microgrid. This innovative microgrid project is supported by Scottish Power Networks in conjunction with EA Technology Ltd and the University of Chester and will focus on demand side management and associated behavioural change. Many local firms and organisations have supported the community since the 'Going Carbon Neutral Project' started in early 2006 - notably the RSK group, M&M Associates and the Carbon Leapfrog Charity. The local council has also given its full backing, installing a 'carbon neutral inspired' footpath linking Ashton Hayes to the nearby railway station - resulting in a four-fold increase in rail use.

The village is now being seen as a working example of the Big Society - a 23% reduced carbon footprint, thriving community owned shop, one of the country's most active 'Timebanks' and a new community owned recreation field and playground - . The very active Parish Council is now working with residents to try to purchase the local pub and transform it into a sustainable meeting place.

## **Kirklees Council**

Greening the Gap in Hillhouse has retrofitted Photo Voltaic Systems and other energy efficiency measures onto 53 domestic properties and four privately run community centres in one of the most deprived, ethnically diverse communities in the UK. Using the assignment of FIT revenues brought in through the project a Community low carbon fund will be created to ensure further work of a similar nature can be completed in future years. The project has also: delivered multiple training initiatives supporting energy efficiency to community centre operatives and householders; delivered installer training to several groups and been a catalyst for a green handyman training scheme; improved membership of the Landlords and Private rented property accreditation scheme. The project has built upon strong multi-agency partnerships aimed at carbon reduction and social wellbeing, with a team that have been very successfully in communicating best practice widely.

## **WALES**

### **Awel Aman Tawe**

Planning consent has been secured to put two wind turbines with a capacity of 4MW on the Mynydd y Gwrhyd mountain, 20 miles north of Swansea. The LCCC money will help towards the capital costs with the rest coming from other grants and 80% from the banks. The wind farm will sell electricity and use the income to fund low carbon community regeneration in the 12 villages which surround the windfarm. The community also has plans to open a zero carbon cafe, allotments and a biodiesel pump.

### **The Cwmclydach Community**

The Cwmclydach Community Blaenclydach is a former mining village and is one of the most deprived areas in Wales. The money from LCCC will help pay for one small hydro turbine in the nearby Cambrian Country Park that will feed the national grid and, under the government's Renewable Obligation Certificate scheme, will generate an income for the Cwmclydach Community Development Trust to ensure the long term sustainability of two community buildings. The Trust is already working with key organisations including schools to reduce energy use and its partner the Cambrian Village Trust, has secured extra funding to extend their Café/ Bar plus install a rainwater harvesting system, PV panels and solar water heating.

### **Lammas Community**

The funding is focused on the development of a community hub building which will serve as a hub for the village and a centre for education on low impact living for the wider world. The outcome would be a replicable, integrated rural sustainable development model. The project will be delivered using a combination of green technologies (hydro electricity generation, passive solar gain, thermal mass stores, biomass heating), permaculture cultivation methods and natural building techniques.

## **NORTHERN IRELAND**

### **Camphill Community Glencraig**

This LCCC Community project is in the process of installing a 1.5 km biomass district heating system for 21 mixed buildings which includes some domestic houses, some large life sharing households for children, young adults and adults with a learning disability and their carers as well as workshops, school buildings and cultural buildings. Fuel will be locally sourced low quality virgin wood with moisture contents up to 65%. This will reduce wood waste in the area and will help to reduce bills and dependence on fossil fuels. Engagement with the wider community is well underway creating a buzz in the area and further afield. Other Camphill Communities in Scotland and England are eagerly awaiting the outcome of the Glencraig project with the intent of benefitting from the learning and subsequent replication of the scheme. Follow their progress on [www.glencraig.org.uk](http://www.glencraig.org.uk) or on facebook (Glencraig Biomass Project)

## 2. . The Householder & Community Perspective

Critical to our understanding of low carbon futures is the impact of measures and technologies on home owners, particularly in the context of community scale projects where social norms and ‘seeing and hearing’ what other people are doing has such a powerful influence on behaviour.

This chapter is presented in two parts – the first looking at the quantitative results of the baseline household surveys that were undertaken, prior to any interventions, across the LCCC communities; the second outlining emerging findings of detailed qualitative research that has been undertaken with a selection of case study households. In both cases the research has been undertaken by GfK NOP in partnership with Kingston University.

### **Establishing a baseline – household survey**

This section outlines key extracts from the baseline research undertaken in (a) 17 of the 22 LCCC communities who took part in this strand of research; (b) in five ‘control’ communities where no LCCC interventions are taken place; and (c) nationally. The purpose of the document is to present comparisons across the individual LCCC communities and to compare this with the national average. The survey will be repeated at the end of the LCCC to assess any changes in attitudes and behaviours.

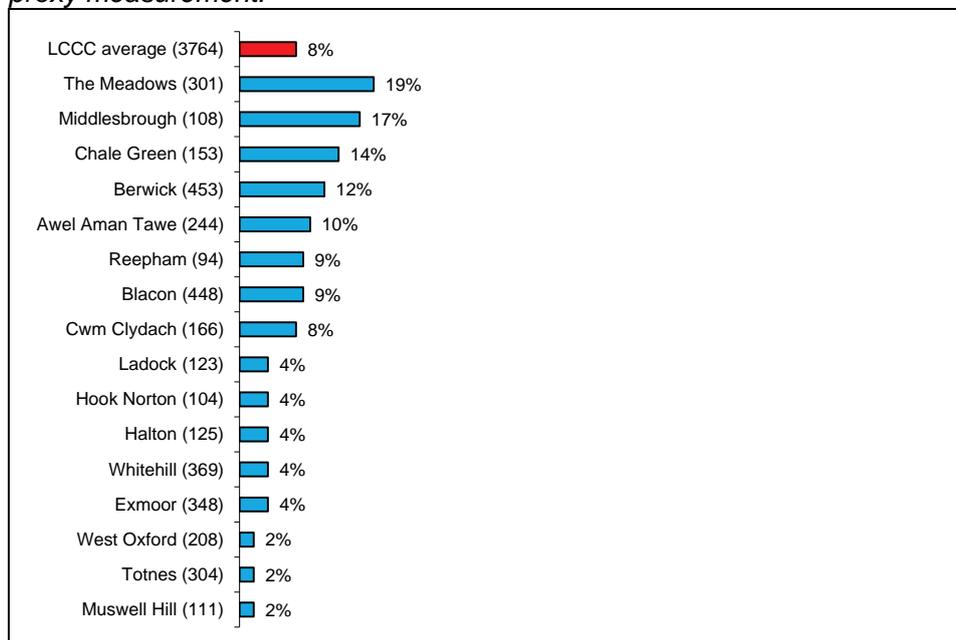
A face-to-face, in-home survey was conducted with samples of residents in each LCCC area, using a random location quota sampling approach, between March and June 2010. The survey therefore targeted all households living in the LCCC areas, not just those directly benefitting from LCCC measures like energy efficiency improvements. It therefore allows us to test the community-level impacts of the LCCC, not just household level impacts.

Different numbers of interviews were conducted in each of the LCCC areas, dependent on the population in each area. Because the sample sizes (indicated in brackets in the graphs) are small in some instances the results are subject to wide margins of error, particularly so in communities where only around 100 interviews were achieved (e.g. 94 in Reepham; 104 in Hook Norton), and so it is important to remember when interpreting the data that not all differences are statistically significant.

### ***Key findings***

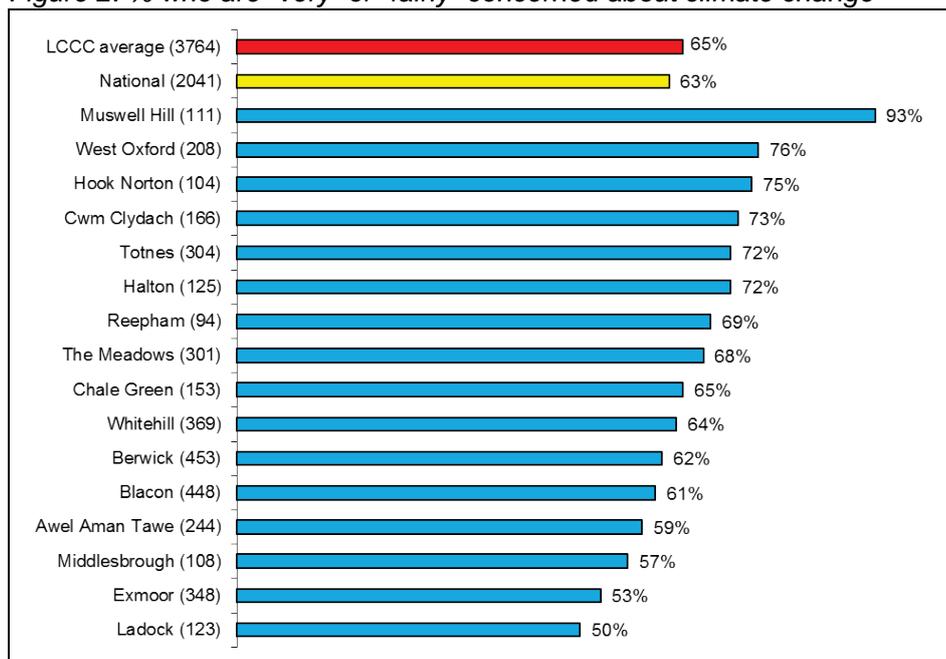
The survey reveals that communities face different levels of **fuel poverty** (Figure 1). The survey, adopting a proxy question for the official measure (i.e. households spending more than 10% of their income on fuel bills), demonstrates that levels of fuel poverty range from close to one in five households in some areas (e.g. The Meadows) to one in fifty in others (e.g. Muswell Hill, Totnes, West Oxford).

Figure 1: Estimated % in fuel poverty (i.e. spending more than 10% of their income on fuel bills) through proxy measurement.



The headline level of **concern about climate change** (Figure 2) is broadly the same across the LCCC communities as a whole (65% are ‘very’ or ‘fairly’ concerned) as it is nationally (63%). However, there is variation across individual communities, ranging from very high levels of concern in Muswell Hill (93%), West Oxford (76%) and Hook Norton (75%), through to below average concern in Middlesbrough (57%), Exmoor (53%) and Ladock (50%).

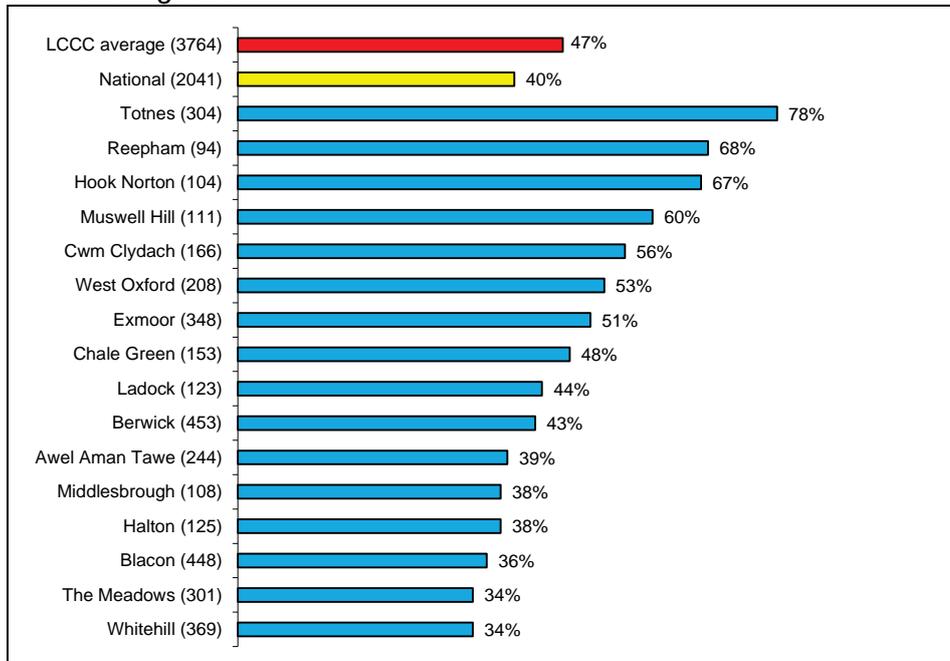
Figure 2: % who are “very” or “fairly” concerned about climate change



Exploring existing **social norms** around low carbon behaviour *prior* to LCCC interventions in each area, it is evident that a slightly higher proportion of residents in LCCC communities - as a

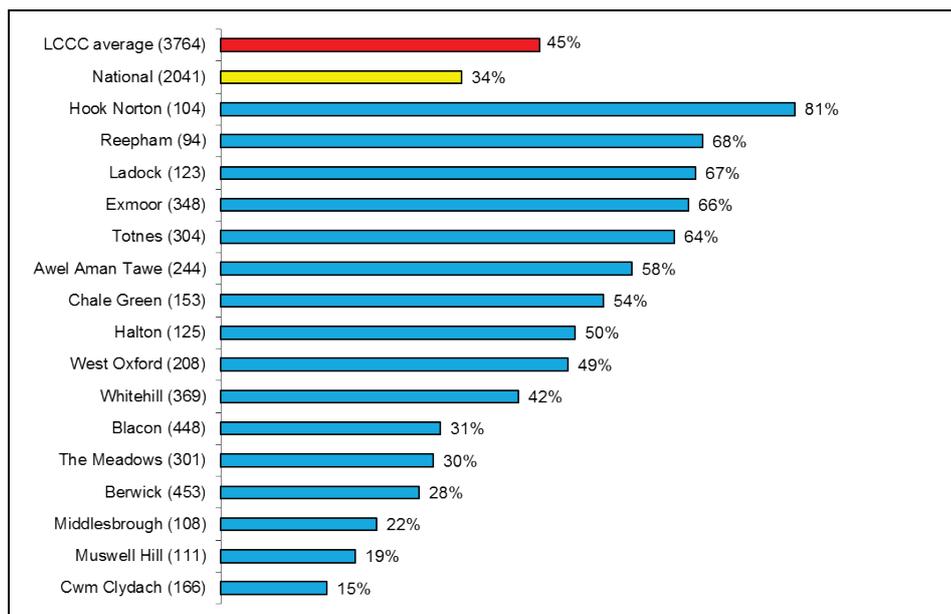
whole – believe that efforts to reduce their carbon footprint is the ‘normal’ thing to do in their area than is the case nationally (47% vs. 40% – Figure 3). However, this overall LCCC result masks significant variations across individual communities - low carbon social norms appear much more embedded in Totnes (78%), Reepham (68%) and Hook Norton (67%) than they are in Blacon (36%), The Meadows (34%) or Whitehill Borden (34%).

Figure 3: % who ‘strongly’ or ‘tend to’ agree that “in their area trying to reduce their carbon footprint is the ‘normal’ thing to do”



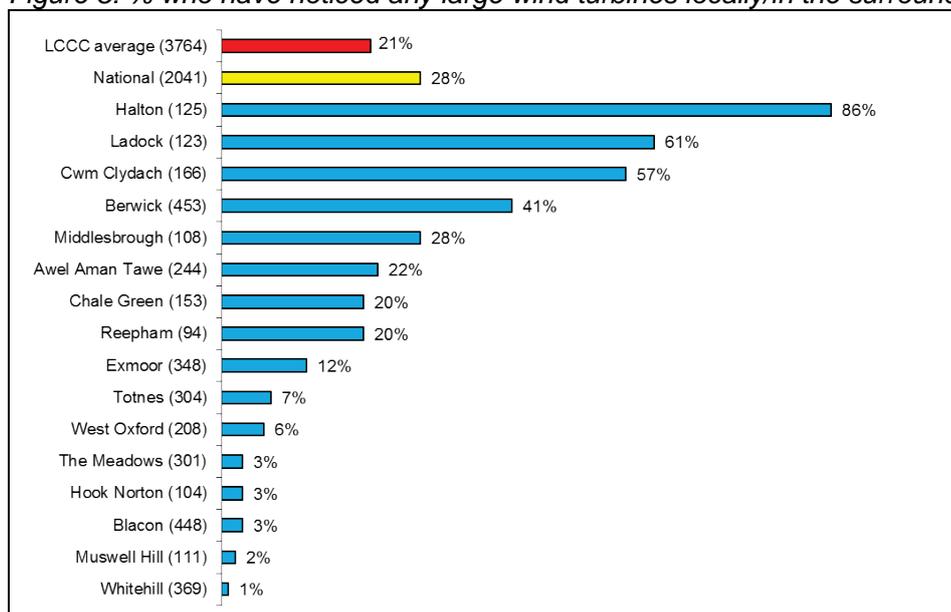
Turning to **recognition and normalisation of specific measures**, residents in the LCCC communities were – at the start of the programme – already significantly more likely to have noticed solar panels in their area than the prevailing national average (45% vs. 34% – Figure 4). This result does, however, reflect significant differences across LCCC communities - with much higher levels of recognition in Hook Norton (81%), Reepham (68%) and Ladock (67%), and much lower recognition in Middlesbrough (22%), Muswell Hill (19%) and Cwm Clydach (15%).

Figure 4: % noticed solar panels on buildings in their area (either ‘a lot’, ‘a fair amount’ or ‘one or two’)



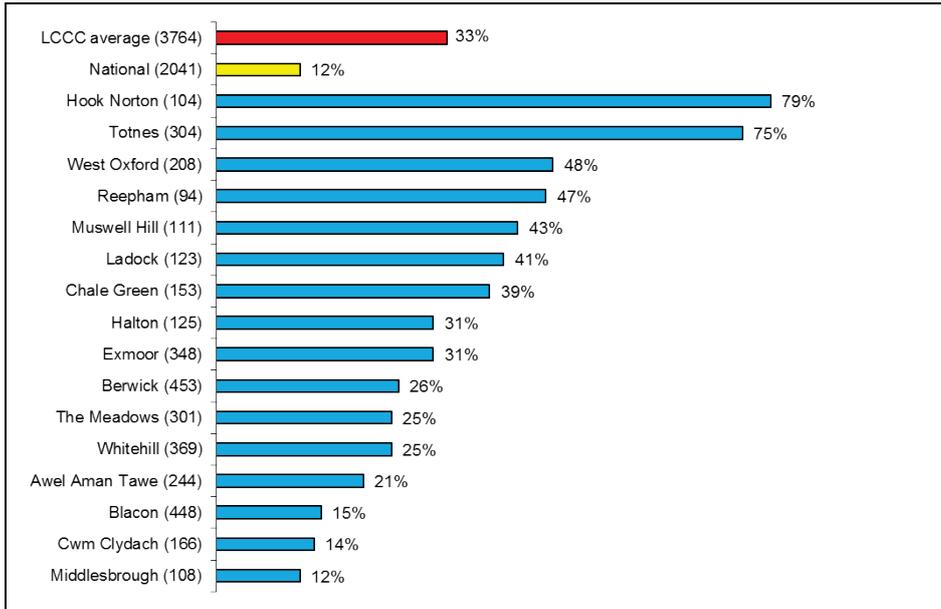
The same level of variation is evident in terms of the proportion of people who have noticed large wind turbines locally (Figure 5) – from very high recognition in Halton (86%) through to very low recognition in Muswell Hill (2%) and Whitehill Borden (1%).

Figure 5: % who have noticed any large wind turbines locally/in the surrounding area



Finally, the LCCC communities differ significantly from the national average in terms of the proportion of residents who have **heard of any action in the local area on climate change/energy saving** (Figure 6). Across the LCCC communities as a whole one in three (33%) have heard of local action (three times as many as seen nationally - 11%), driven in part by very high levels of awareness in communities like Hook Norton (79%), Totnes (75%), West Oxford (48%) and Reepham (47%).

Figure 6: % heard of any action in the local area on climate change/energy saving in the past year



## Qualitative, in depth case studies

GfK NOP was commissioned by DECC to undertake a programme of qualitative research among LCCC communities to understand both the householder and community perspective in relation to LCCC activities on participation. Longitudinal in nature, this ‘action’ research focuses on eight of the LCCC projects in two ways:

- To chart the day to day experiences of individual households who are part of LCCC projects and are therefore experiencing significant changes to their home (e.g. a whole house retrofit or the installation of PV panels); and
- To explore the changing connectivity of communities in respect to environmental and energy conversations and understand how knowledge and ideas diffuse out, and spread, across the community.

### Household Experience:

Blacon, Chale Green,  
Hook Norton, Totnes,  
West Oxford,  
Whitehill Borden

- Objective: *Chart the experiences of LCCC households*
- One household from six projects (15 participants in total)
- Semi-ethnographic research following each household for (up to) six months
  - Two household visits lasting half a day (start and end of research)
  - Online: Weekly diaries, video uploads and activities

### Community Diffusion:

Reepham  
  
Muswell Hill

- Objective: *Explore networks and LCCC impact on communities*
- One rural and one urban LCCC project
- Three staged approach which will span (up to) six months
  - Mini-focus group with active community members
  - Telephone depth interviews with wider community (and community members)
  - Half day workshop with interested/involved parties

This report introduces the case study households and outlines some key emerging findings.

## Household experience

The household experience approach was designed to chart the impact of LCCC projects on households over a specified period of time. Currently all households have been visited by a GfK NOP researcher and are engaged with the online research. Online, participants have created video diaries of their experiences and completed tasks/activities designed to investigate knowledge, attitudes and behaviours.

To date, three of the households selected to take part in this research have had/are in the process of having kit installed in homes (Chale Green: solar PV, air source heat pump, triple glazing, Whitehill: solar PV and Hook Norton: whole house retrofit), while the other three

households have been involved in activities at the community level (West Oxford, Totnes and Blacon). At the time of writing this report, the households in Totnes and West Oxford were considering future installations in their home e.g. solar PV, which would be facilitated by their local LCCC.

Below is a short introduction to three households who are involved in their local LCCC projects in different ways:

### **a) West Oxford**

(Community-led and behavioural change)

Suzanne, David and their two young children live in a Victorian terrace house in a relatively affluent, family orientated area near the centre of Oxford. As a family they are involved in many community activities e.g. the local residents association and the local PTA.

As a household, their main involvement in LCCC funded projects was the first phase of the Low Carbon Living Programme (part of Low Carbon West Oxford) where they made a pledge to reduce their carbon footprint within one year. This involved attending talks and community events designed to inform households about their carbon footprint and then signing up to make certain changes to the home as well as behavioural changes. Since their involvement in Phase one, they have become involved in the second phase; attending meetings and talking to other households about their experiences of household carbon reduction.

Conscious of their carbon footprint, this family have been actively researching new ways to reduce their household carbon since attending community awareness sessions. They have a household energy monitor that they routinely consult and have been conducting their own investigations into carbon issues they are concerned about e.g. the most efficient way to drive to and from work, and how viable 'green gas' is as a household's energy source.

*"I started my research into 'green gas' but I have not come to any conclusions at the moment...I am happy to be an early adopter but I want to know that it will do some good."* Suzanne

When it comes to household decisions, Suzanne and David often consider 'green' options. In addition to their involvement in the LCCC, they are looking to commission some building work in the next year to extend their property and are willing to also make a personal investment into green technology. Although still undecided about their plans, they have recently become interested in solar panels having heard that their LCCC group are trying to negotiate a competitive price with a supplier.

*"Whilst the initiative (LCCC) may or may not get us a discount, Low Carbon West Oxford have given us the impetus to get our act into gear in getting serious quotes for the 'green' projects we are planning."* David

### **b) Hook Norton**

(Green loan and retrofit)

Rachel, Tim and their two children live in an 17<sup>th</sup>/18<sup>th</sup> century detached house that was recently given 'listed' status. They moved to the village when they bought their property (which at that point was not listed), with the view to completely restoring it. Although Rachel and Tim are

aware of activities and initiatives in their local community, they are not actively involved in their neighbourhood.

Prior to their involvement in the LCCC, Rachel and Tim had investigated carbon-sensitive ways to restore their property – however, it did not prove to be a financially viable for them to commission a complete retrofit all at once. With the help of a LCCC ‘Green Loan’ they have been able to start the work on their home much sooner than they had originally anticipated, and commission all the building work to be done at once (something that they never thought would be possible).

*“We want to be green but couldn’t afford the scale of what we have in mind without the loan...It feels good that the dream is becoming a reality.”* Tim

The work being done on the property is extensive, with changes being made to every part of the property, interior and exterior. Prior to the building work starting Rachel spoke of the emotions she expected to feel when her house no longer resembled the home she had created e.g. sad to lose the carpet/wallpaper that she had once saved up to purchase. Since then she has been very involved in the building work and has found living in a property while the work is going on to be very stressful. The online diary entries from Rachel and Tim have outlined the impact the building work has had on their daily lives and the unexpected strain it has put them under. However, as a result of the LCCC ‘Green Loan’, Rachel and Tim hope to become more involved in the local community as an outcome of their house renovation.

*“Beyond the financial benefits of the scheme, it is offering us the opportunity to get more involved with a community of people who are committed to the low carbon agenda. I hope that our house will also inspire other to take low carbon steps.”* Hook Norton

### **c) Chale Green**

(Retrofit of social housing property)

Peter and his adult daughter Charlotte live on a social housing estate on the Isle of Wight and are well known amongst their local neighbours as they have lived in the same home for over 20 years.

At the beginning of 2010 their home (along with others in their neighbourhood) was in need of modernisation e.g. their Economy 7 system was only able to heat the downstairs of the house. When Peter and Charlotte were first visited by a GfK NOP researcher, the house had already received a number of different installations with more due in the future. Living in a rental property, many of these adaptations were initiated by their housing association or the LCCC rather than specifically chosen by the household. The home now has solar PV, an air source heat pump and a new bathroom; and they also expect to have new glazed windows fitted soon. They received all these measures from their local LCCC project.

In addition to the retrofit improvements, the local LCCC project also ran a number of community training sessions about energy efficiency for local residents. Peter attended one of these training sessions and was issued with an energy monitor for his home.

Peter is an advocate of all the new measures in his house while Charlotte is more practical when it comes to how the new technology works. Both have become more enthusiastic about energy saving measures, fascinated by the greater visibility of energy (through the use of the monitor) and greater awareness of how energy is consumed in the household. Although

pleased to be reducing their carbon footprint, this household are more concerned with how the retrofit can save them money.

*“Primarily the benefits are financial. We are hoping to save in the region of 30-50% on our energy costs. As an added bonus it means that our carbon footprint will be greatly reduced.” Chale Green*

### **Household experience themes**

Across the sample a number of themes are emerging from the research related to individual attitudes/behaviours as well as how new kit and technology is fitting into people’s lives.

**Visible results:** Participants are keen to see the outcomes of their efforts. As participants started to view energy differently, the information shared in the online diaries reflected differences in the way individuals’ defined energy and the way they used energy.

Energy was originally thought of as a costly commodity and largely ‘invisible’. In those households given energy monitors as part of the LCCC project, this seems to have changed – they have been very popular and enabled households to pinpoint how much energy they are consuming e.g. Chale Green no longer use halogen heaters in their home.

*“Meters – some people have them sitting in a box or do not look at them. I have found them useful particularly in making sure we turn things off. It has trained us to turn things off.” West Oxford*

In addition to seeing a reduction in energy use, some participants have been motivated by the potential cost reduction in their energy bills.

**Wider changes in behaviour:** Some of the research participants have changed the way they consume and purchase products as well as their modes of transport since becoming involved in the LCCC. David in West Oxford has started a lift share arrangement with a colleague while the family in Hook Norton considered which materials would benefit their home the most and impact on the environment the least during their whole house retrofit.

In addition to this, the use of installed kit has changed the way individuals use and consume energy in the home. Understanding the way energy is generated has led the Chale Green household to manage their energy consumption differently although not necessarily reduce the amount of energy or appliances they use.

*“Since having the solar panels we have just used one appliance at a time, so instead of having the washing machine and tumble dryer on at the same time, we just use one at a time.” Chale Green*

**Learning from others:** Although messages about carbon reduction are being heard by participants, some messages are more impactful than others. Relevant information from trusted, already known sources has encouraged participants to make changes.

*“I suppose having done the community contacts training sessions, awareness of just what different appliances throughout the house, what their various consumption is. We did an exercise at one of the meetings [where] we had to list*

*in order of usage different domestic appliances. Most people got most of them in the right order but there were a few that we were all surprised at, simple things like the kettle.” Chale Green*

Feeling involved in the community projects has also helped households share information and talk to others in the local area about ‘green’ issues that they would not normally discuss. Attending community events and training courses focused on lowering household carbon, also enabled individuals to learn and share information. This guidance at community meetings/training sessions and local community exemplars have provided participants with practical ways of overcoming barriers to change.

**Motivations:** Installing new kit and technology into properties is one of the main outcomes of the LCCC investment. However, the way technology ends up in people’s homes differs from project to project. Some individuals have committed to installing ‘green’ kit into their homes with the priority reductions in carbon consumption, and any monetary savings associations are welcomed but not the main motivations for change. For others, though, monetary savings and improvements to daily life are the priority, less so the link between energy use and carbon.

**Understanding how to use the new technology:** Differences in the way new kit is evaluated by individuals can be related to their understanding of how the technology works. Households such as Chale Green, who expected their new air source heat pump to make their home warmer than their old Economy 7 system, were initially disappointed when they discovered that they were not making financial savings after the installation.

*“We have been having a few issues with how much the heating system has been costing us and we didn’t think the PV panels were doing a lot but this morning we had two engineers come...they saw it had been set up wrong in which our hot water was coming on in the morning and not going off until 10pm.”  
Chale Green*

It transpired that their kit was not set up correctly during installation, and with little knowledge of how the technology worked the household was not able to identify the faults with the system and therefore assumed that the new kit was able to solve their energy issues.

*“To start with we thought that it [air source heat pump] wasn’t working properly as the radiators would sometimes be cold to touch. However, the way the system works is it monitors the ambient temperature and only fires up when needed. Quite clever really.” Chale Green*

Knowledge of the kit being installed has had an impact on how participants view their new technology. Explaining the way it works and how best to use it will manage expectations and maximise the effectiveness of the kit. Presenting the new kit as an ‘energy solution’ without any additional guidance suggests that the installation will be a) an updated version of the old technology, and b) require little change to current behaviour or use. This is often not the case.

*“One of the issues that has arisen with our project is that people are stating that their air source heat pumps are expensive to run. Once you start asking questions about how they use the system quite often it transpires that they have never had whole house heating as in the past they have only heated on room.”  
Chale Green*

**The reality of a retrofit - disruption:** The households who underwent a retrofit found that their lives were disrupted more than they anticipated. They felt unprepared for the work.

*“In all honestly I’m not sure what I expected. The ‘whole-house’ nature of the job has meant nothing is exactly as you thought it would be. There are just too many variables to nail down a chain of events; down to an exact plan; particularly as this is an old house.”* Hook Norton

*“A brief snapshot of our lives: I am currently writing this perched on a stool with my laptop in the vegetable rack up in the bedroom, as I have to plug into the modem because the wireless connection won’t work with all the construction disturbance. The build is completely consuming.”* Hook Norton

Households would have liked to be armed with the knowledge that a retrofit would involve disruption to the properties energy and water supplies, their telephone and internet connection, and their day-to-day routine.

### **Community diffusion**

The objective of the community diffusion element of research is to seek the opinions of local residents and their understanding of the LCCC projects in their area. Increasing the sample in each area via snowballing, the community diffusion approach also seeks to map community contacts, community conversation and, more generally, how information diffuses and spreads through the community.

Two LCCC projects were chosen as subjects for the community diffusion approach: Muswell Hill and Reepham. Both projects include installations on community buildings however one project is located in a city (Muswell Hill, London) while the other project is located in a small village (Reepham).

Below is a short outline of the two community diffusion projects:

#### **a) Reepham**

The initial focus group held in Reepham concluded that local residents were very aware of the LCCC projects in the area. They were active residents, well known in the village and generally found out about local information via word-of-mouth. Some participants had directly benefitted from LCCC funding e.g. installations to their home, while others were involved in community organisations or initiatives e.g. allotments, that had also received funding.

The presence of the LCCC in the area had become a talking point at many local events and amongst interested residents who wanted to know how the funding would change the village. Although most of the local community were positive about Reepham receiving LCCC funding, some resistance to change was noted by participants (although short-lived).

*“There was maybe nine months of [resistance] but now, they reckon it’s the best thing since sliced bread.”* Reepham resident

Being involved in the LCCC had, for some participants, focused their mind about their own personal energy and carbon consumption. For others, supporting the changes in the local area

was thought to count as them 'doing their bit'. Although participants were very aware of the LCCC projects in their area and the purpose of the LCCC, there was limited awareness of how they could make personal changes to reduce their carbon footprint.

## **b) Muswell Hill**

Participants attending the focus group in Muswell Hill appeared to be less well informed about the LCCC projects in their local area. Some initiatives were recognised by participants when prompted however only one participant was aware of the LCCC. For the majority of participants their main point of community contact was their child's school, with a number obtaining community information from the local newspaper and notice boards in local shops. Word-of-mouth was low as participants did not know many individuals in their local community.

Exploring the projects being undertaken in Muswell Hill, participants wanted to know more about projects that actively involve local residents, and in particular, local children e.g. the LivingARK. Community installation projects such as solar PV on school buildings were also of interest to participants as they were thought to provide a practical learning opportunity for young people.

*"I would definitely buy vegetables that the children have grown. I think it's a great idea."* Muswell Hill resident

One participant had received LCCC funding for a retrofit to his home although none of the other participants had heard of this opportunity. Discussions about how to reduce household carbon consumption focussed on behavioural changes, with participants seeing little incentive from their local community to make significant changes.

## **Community diffusion themes**

The research shows that community diffusion has very different characteristics in the urban and rural contexts. The community diffusion approach has also highlighted how the differences in the way the LCCC projects are delivered can impact on community knowledge, awareness and acceptance of changes to the local amenities/environment.

Information diffusion: The research has begun to highlight differences in the way that information is transmitted throughout a community. Reepham and Muswell Hill are very different in terms of population size and geographical layout. Therefore it is not surprising to find that residents of Reepham are more familiar with the LCCC initiatives in their area. However, the way that communities communicate with each other about the initiatives and projects is different. These differences are outlined below:

**Formal and informal diffusion:** While Reepham residents appeared to rely on informal, word-of-mouth to know what was happening in their local, rural community; community diffusion was much more formal in Muswell Hill, largely relying on the local press and official announcements.

The initiatives in Reepham appear to be driven by a small number of well-known individuals within the community. These individuals already have links to community groups where they informally speak to other residents about the changes going on in Reepham. Therefore the information is trusted and communicated through informal networks to others in the community,

backed up by the very visible nature of the LCCC work being undertaken in the centre of the village.

In contrast, the projects being undertaken in Muswell Hill are less visible and less attributable to the LCCC (as many other projects are being delivered in the area at the same time). Therefore information appeared to be disseminated to residents via traditional media and local resources e.g. articles in the local newspaper and through community centres. However many of the residents of Muswell Hill did not access these community venues or read the local press, instead they were only aware of projects that directly impacted on their life and their household, e.g. information sent home to parents from local schools or posters on notice boards in local cafes and shops.

***Degrees of insularity:*** During the Reepham focus group it was relatively easy to identify individuals who were key to information exchange within the village and how they interacted with local residents e.g. the lady that worked in the Post Office, the pub landlord; however in Muswell Hill communication pathways are either smaller (e.g. limited to immediate neighbours) or takes on different, and less predictable, forms. This could be attributed to the geographical difference between a dynamic urban area (Muswell Hill) and a traditional rural area (Reepham).

However it is interesting that there were pockets in each community who were less informed and/or aware of the LCCC projects. Interestingly, these individuals were not detached from the LCCC due to their lack of engagement with the community and/other community activities. The research is looking to explore the nature of insularity in each area as part of the final stage of the research at the community workshop. This will hopefully explain why the less engaged do not think such projects are relevant to them.

#### Neighbourhood asset:

The research has highlighted a sense of community pride attached to receiving LCCC money and the opportunity to transform areas within the local community. Understanding the purpose of the projects is less important than the belief that the projects will improve the local area. Community projects such as the renovation work in Reepham have been accepted as beneficial to the local community and a useful allocation of funding. Similarly, the LivingARK in Muswell Hill was described as a community asset as it could educate local children as well as bring something unique to the neighbourhood. Initial findings from the telephone depths have suggested that familiarity with the community projects enables greater acceptance of the low carbon element of the projects. Participants' viewed the LCCC initiatives as modern solutions to persistent problems (Reepham) or an innovative way to involve children in the low carbon movement (Muswell Hill).

### 3. The Community Leader Perspective

Central to the LCCC are the community leaders who – across each of the 22 communities – are the driving force for change. This section captures and reflects upon their experiences and learning – the challenges they've faced, the things that have gone well as well as badly, and the solutions, successes and innovations they've delivered to date.

The chapter draws upon commentary from the LCCC projects themselves (3.1 & 3.2), from the community project who bid for LCCC but were not successful (3.3), and from Dialogue by Design who have been commissioned to undertake a programme of co-inquiry and shared learning with each of the LCCC projects (3.4). The section concludes with a commentary from NEA on the role for social enterprise structures, based on their work with the LCCC communities (3.5).

#### 3.1. Key reflections from the practitioners

This sections sets out some of the key and headline interim reflections from the community leaders themselves – focusing on both their successes to date and the challenges they have faced. It is structured around five key learning areas:

- *Low carbon technologies* – specifically how the technologies have worked 'for real' in terms of their actual output; what projects have learnt about the appropriateness of technologies for different types of home (e.g. roof size as well as orientation when it comes to PV); and challenges in the procurement of technologies (including a recurring demand for more independent advice on technology choice).
- *Project management, skills sets and support needs* – specifically the need for a dedicated project manager and team, and the learning curve that many projects have gone up in terms of key issues such as legal contracts and the planning system.
- *Community engagement* - specifically how communities have responded to evidence of actual installations going in rather; and how these visible demonstrations can be a useful means of triggering interest and awareness.
- *External barriers* – specifically planning, local authority procurement, access to good quality energy data and, in particular, issues around Feed in Tariffs and State Aid.
- *Behaviour change* – with comments reflecting how difficult this is to achieve, with a need for clear messaging and a focus on motivational hooks beyond the environment alone (e.g. money savings, warmth, sense of community).

#### i) Learning about Low Carbon Technologies

*"It's not just roof orientation but also size (which is an issue for some Victorian terraces). And the electricians have to meet the minimum standards - if not they need updating which can cost in the region of £500".*

The Meadows

*“Our project has found the following about different technologies:*

- *Most photovoltaic panels working better than anticipated. After 10 months most have already achieved 930KWh per KW capacity.*
- *Solar thermal panels all working well, and householders very pleased with savings made.*
- *The wind turbine has only achieved about 40% of expected output. Cornwall has been less windy than usual.*
- *The log boiler in residential house works well: installation has halved oil use.*
- *Planning refusal has prevented external wall insulation project.*
- *The dry lining of a Village Hall has been a great success, and led to much greater use of hall”.*

Ladock & Grampound Road

*“You can’t just explain to people how to use a renewable energy heating system once – you have to repeatedly explain to them how to use the systems and this may require a number of training sessions. User interface also needs to be made more user friendly, and manufacturers should be made more user friendly, and manufacturers should be encouraged to make control panels that are easier to use.”*

Chale Green

*“Many renewable technologies are so new that going through the process of procuring them can be difficult due to a lack of knowledge of what is effective and what isn’t. We benefitted from the knowledge of a local Energy Saving Trust renewables expert during the initial procurement process. This was very helpful in providing impartial advice on technology and potential problems/hurdles.”*

Middlesbrough

*“It would be useful to have a national network of experienced accredited independent advisers to help people choose the best solutions for their circumstances”.*

Reepham

## **ii) Learning about Project Management, skills sets and support needs**

*“Legal costs are expensive and contracts were needed between us and the city for the social housing as well as between the householders and the installers”.*

The Meadows

*“A dedicated staff team is essential to coordinate the project, engage with local residents, community and faith groups and outside agencies, provide energy related services, promote the programme and develop and support the volunteering that is vital to make it a community project which will be sustained into the future”.*

Blacon

*“You need a very good understanding of issues such as planning controls, contracts, insurance and finance within your project team in order to avoid delays”.*

Haringey

*“The National Park Authority has provided significant officer time to Carbon Neutral Exmoor in support of the project. In particular, it has project managed the overarching project and provided project management support to the community groups involved. Furthermore, it has provided technical and planning advice, facilitated communication between community groups and organised meetings and events on behalf of the project. The community representatives on the steering group have also put a lot of their own time into the project to help make it a success. The blend of “top-down” assistance in support of “bottom-up” efforts and aspirations has been critical to the success of the project to date”.*

Exmoor

### **iii) Learning about engaging the community**

*“Initially when the PV was offered free we had very little take up but then, as the PVs physically started going up on peoples’ roofs, we had an avalanche. This was because people were distrustful to start with - they felt they were being offered something for nothing. Until they went up onto houses (where we had contact with the householders and trust already established) we found it difficult to convince people that it wasn’t a con”.*

The Meadows

*“While members of the Easterside community are generally in favour of carbon reduction measures, they are also suspicious of change and new technologies, so it has been difficult to get residents fully involved in community renewable schemes. This has changed when the measures begin to be installed and residents can physically see the measures in place and hear of their success”.*

Middlesbrough

*“When the agreement letters were posted to householders to sign only a handful of them responded. We carried out further door knocking to encourage householders to complete the forms, but this did not produce many more signed agreements - demonstrating a gap between householder interest and their willingness to sign binding legal documents. We asked the local councillors for their help and advice about how we could overcome this obstacle and one of the councillors offered to spend a couple of Sundays with someone from our project team, door knocking households who had not yet signed the agreement letters. This resulted in the majority of households signing up to the scheme, with the remainder completing the documents once they had seen solar panels installed on other properties. Once the PV panels were being installed on properties the installers reported that residents were showing interest in what they*

*were doing and that children who were playing in the streets would watch them working and ask questions”.*

Kirklees

*“Installing renewable technologies (particularly more visible technologies like solar PV panels) on a large scale in communities is a good catalyst to encourage conversation about renewable technologies and heating systems generally and can also inspire action”.*

Chale Green

*“Large PV sites are good tools for community engagement in schools and high profile private buildings, but the extent to which that spreads through the community is debatable or unknown”.*

Muswell Hill

*“The project has raised interest in renewable energy across the community and also sparked debates on how we might use future FIT incentives to borrow money on the commercial market to fund new renewable projects that might generate revenue for other sustainability activities in the village”.*

Ashton Hayes

#### **iv) Learning about external barriers**

*“Planners and environmental health can have poor knowledge of renewables technologies which can cause unexpected delays”.*

Camphill Glenraig

*“Local Authority procurement procedures do not operate easily in situations where technologies are so new that there are very few competitive alternatives. Where the minimum number of quotations or tenders required by standing orders exceeds the number of potential suppliers, the process of purchasing novel items can be complicated and time consuming. Delays incurred due to following Local Authority procurement rules can potentially present problems signing off contracts”.*

Middlesbrough

*“Accessing historical energy consumption data (for baseline purposes) from energy suppliers is difficult”.*

Blacon

*“The paperwork created for assigning the FIT and creating householder/landlord agreements was a new area of work for us, in addition to which, the utilities providers were also only just devising their paperwork for the process. As far as we were aware, given the FIT only came into effect April 2010, no other group or organisation had gone through the required legalities or*

*devised the associated administrative processes before, this meant we could not utilise peer learning to help”.*

Kirklees

*“The complexity of the FITs/State aid issue has generated significant learning and proved to be particularly time consuming. This is an issue of vital importance to our financial model and the success of the whole project. A lack of clarity from DECC/Ofgem/BIS hasn’t helped and LC3 communities have provided a lot of mutual support which has been invaluable”.*

Berwick

## **V) Learning about behaviour change**

*“People will only change behaviour when they see the benefit to themselves, the biggest help in this has been the energy meters as when residents have them fitted they suddenly see how much electricity they are using when they switch things on”*

The Meadows

*“With the economic down turn people are more open to change. A project such as ours can have a positive effect on people in such times”.*

Camphill Glenraig

*“Behavioural change is encouraged by use of visual displays (e.g. electricity display devices (“RTDs”)) and tangible features. Incentivisation (in our case particularly a household energy efficiency makeover at the end of the Programme) can be an effective component in maintaining householders’ commitment over lengthy periods (12 months). And engagement and cooperation between householders enhances behavioural change – the research shows that competition between groups of householders will produce short-term changes”.*

Blacon

*“In an area rated high in the indices of multiple deprivation, the key driver to behavioural change is not primarily the low carbon agenda but cost savings and the potential for job creation (in the case of the community enterprise). Residents may support behavioural change in principle, and be understanding and supportive of the low carbon agenda, but if being green costs more than the status quo, then green is likely to be of a low priority”.*

Middlesbrough

*“People will make radical changes to their lifestyles if they are empowered and supported to do so. The optimum driver in such transformation is not carbon emissions, nor the threat of climate change; it is the prospect of a more holistic lifestyle”.*

Lammas

*“Having kit installed has made homeowners much more conscious of energy saving/carbon reduction. Some householders have taken it upon themselves to take significant extra*

*measures e.g. installation of wood burner to save oil, adding an external porch to reduce heat loss”.*

Ladock & Grampound Road

*“Changing household behaviour has been difficult. Key points are the importance of trusted messengers and the value of word of mouth / personal endorsements. Response rates to press and local media have generally been low. Piggybacking on local events and other groups, on the other hand, has been very successful. Once people have engaged with us and allowed us to undertake household surveys meaningful dialogue has been relatively easier and follow up evaluation efforts are largely received positively. It is all about getting the first conversation going. The complexity of the issues is often overwhelming for people and the importance of relaxed and unhurried face to face dialogue cannot be overstated. An incremental approach appears to be effective but it is early days – people get used to talking to us about energy and are then prepared to talk about waste, water etc”.*

Berwick

*“Messaging is key - mentioning ‘climate change’ and ‘low carbon’ may not be the best way to engage with people, different audiences must be communicated with in different ways. In general, people do care about sustainability, but they care more about their wealth, their health, their families and enjoying themselves so sustainability feels like an add-on, an indulgence for the better off, the bigger picture is too ‘big’ and too remote for them to prioritise it. Don’t underestimate how difficult it is to communicate with people – use every communications method you can think of (website, email, newsletters, press releases, leaflets, posters, personalised letters, meetings, workshops, Facebook, door knocking) but even then people say that they have not received any information (and things posted through letterboxes may end up in the dog before being read!)”*

Chale Green

*“Often the primary motivation for the community groups in applying to Carbon Neutral Exmoor for LCCC funding has not been to mitigate climate change. Rather, the community groups have been primarily concerned about making their community facilities cheaper to run and warmer. The climate change benefits are often seen as an added bonus. This highlights an opportunity for Carbon Neutral Exmoor (and other projects around the country) to identify where community aspirations for improved quality of life overlap with the low carbon agenda, and to support communities in delivering on those aspirations”.*

Exmoor

## 3.2. Commentary from the projects

### **Renewable energy in communities: It's not just about the technology**

**By Katie Steiness, Chale Green**

The Chale Community Project installed 61 air source heat pumps and 41 solar PVs on a social housing estate on the Isle of Wight – one of the largest and most concentrated installations of its kind in the UK – to reduce the impact of fuel poverty amongst those households.

The project has been a continuous learning process and has allowed us to gain considerable insight into the practicalities of installing renewable technologies. It has also enabled us to gauge that the latent appetite for renewables in the community is high, and we believe that the installation of renewables in Chale has been vitally important in helping to change people's mindset and encourage debate about energy issues in general. For example, the visibility of the project – particularly the arrays of solar panels which look impressive as you pass by – resulted in a high number of enquiries from other inhabitants of the village and surrounding area wanting to find out more about renewable technologies. As a result, a 'Future Energy Event' was held to which a number of local suppliers and installers of renewable technologies were invited.

However, the project has also highlighted a series of barriers to replicating it on a large scale, most notably:

- **Affordability** – in these cash-strapped times, how many of us have £10,000 to spare?
- **Payback period** – this is uncertain but many people still think it will be long term (even though this may not be the case with energy prices expected to increase dramatically over the next 5-10 years to pay for the renewal of the UK's generating capacity as older coal-fired power stations close).
- **Whole house solution** - you have to find a whole house solution that enables a renewables installation to be effective e.g. in Chale, in spite of the homes already being to Decent Homes standard, roof insulation top ups, cavity insulation top ups and replacement windows were required to maximize energy and cost savings.
- **Lack of ease of use** – more thought needs to be given to the user interface for renewable heating systems so that they can be understood by lay people as well as heating engineers. This is particularly true where they are being installed in the homes of elderly or vulnerable people and could represent a significant commercial opportunity.
- Our own experience has been positive overall, but the renewables industry is still a **fledgling industry** so in some cases there are still technical issues and a lack of transparency in the information available.
- **Disruption** to normal life – this is unavoidable during the installation process and even if kept to an absolute minimum, some people just have a general dislike of change.
- **Aesthetics** – not everyone likes the look of the technologies.

For people who can't afford to pay outright for their technologies, there are government-backed schemes which offer panels either free or for a much smaller sum (£500) but the conditions attached to these mean they are not suitable for everyone. Overall, it is hard to see how the large scale installation of renewables in communities such as Chale can be replicated without large grants. Large scale installation might be achievable if it was done on a 'pay as you save' basis but that would only work if fuel poverty was not such an issue.

On a practical level, the most important thing that we have learnt from this project is that the support and information given before, during and after installation is as important as choosing the right technology. Apart from the need for a decent period of consultation before the technology goes in - to explain its benefits, how it works and what is involved during the installation process - and a good support and feedback mechanism both during and after installation, we made the following observations:

- **Communications:** Don't underestimate how difficult it is to communicate with people - we used a combination of leaflets, newsletters, meetings, emails, press releases, but in the end door knocking was the most effective, but also the most time consuming.
- **Messaging:** WIIFM (what's in it for me?) is the key to getting people to come to a meeting/engage in any way and we found that people responded better to the argument of improved thermal comfort and potential cost savings rather than any mention of 'low carbon' or 'climate change'
- **Ease:** You have to make it easy for people – easy to understand, easy to use
- **Behavior change:** People do have to live differently to get the best from the technology
- **Repetition:** You can't just teach people once how to use the kit – but you have to repeat it over and over again.

There is also some specific learning from the different technologies:

**Air Source Heat Pumps:** These were put in to replace night storage heaters as residents were finding they could only afford to use these in certain rooms of the house, leaving the rest of their home cold. Overall people now seem to be happy with the new heating system, but initially it took a while to get used to them because:

- the controls/timers are more complicated;
- There was initially some confusion around how to optimise the air source heat pump use with manufacturers and installers putting out different advice;
- the radiators do not get really hot like the night storage heaters, but instead create a nice ambient air temperature;
- people could no longer dry their washing near the radiators as they had done with the night storage heaters;
- psychologically people seem to need a focus for heat which they don't get if the radiators don't feel hot; and
- people had to ensure they were on the right electricity tariff: Having had night storage heaters, many people were on a dual rate electricity tariff, paying less at night but more during the day. As the new air source heat pumps mostly use day-time electricity, residents needed to change to a single rate tariff in order ensure the system was working most cost-effectively.

**Solar PVs:** The installation of these was relatively straightforward but an important issue to consider is whether you have the right sort of meter. If it is older than 10 years, it is highly likely that it was not designed for electricity flowing from the house back to the grid so in some cases the meters start to wind backwards giving incorrect meter readings. It is fairly easy for the meters to be changed and generally a call to your electricity supplier is all that's needed, although in some instances, it is clear that some call centre workers at the electricity suppliers

have not received adequate training and do not understand why households need to change their meter so a little perseverance may be required.

### **Final thoughts:**

In spite of the barriers, we believe that every effort should be made to encourage the use of renewable technologies in communities. Our experience in Chale is that it has had a very positive impact on many levels and is beyond anything the project team could have predicted.

The households that have directly benefited have become warmer and more comfortable whilst at the same time cutting carbon, and by providing education, support and advice about renewables, the project has acted as a catalyst for discussion about energy generation and usage within the wider community and inspired other members of the community to consider renewables for their own homes. We believe that the visibility of the project is encouraging much wider PV installation on all tenures than would otherwise have been the case, although we do not currently have any concrete data on this.

As a result of this project, the social landlord Southern Housing Group have enhanced their model for sustainable best practice – which extends to all planned works such as water saving devices in bathrooms - and are looking at ways of rolling out renewable technologies on their housing stock of 25,000 homes nationally. They are also encouraging other social landlords locally to do the same. At a recent meeting, these landlords confirmed that they had committed to installing 1,000 PV panels in the short term with the hope of getting to 2,000 PV panels island-wide by the end of 2012. Some of this may be down to timing, but in our view, it is unlikely that these installations would have happened for some time without the impact of the Chale Community Project.

We will be closely monitoring the air source heat pumps and solar PVs over the next 12-18 months when we will be able to provide accurate performance data which we will make publicly available, but it is currently estimated that the solar PVs will generate around 71,750 kWh per annum\*. This equates to an equivalent carbon saving of 61.5 tonnes per annum.

We would like to share our experiences so should you have any questions, please do not hesitate to contact us @ [chale@chalecommunityproject.org](mailto:chale@chalecommunityproject.org)

\* based on 41 homes x 2 kWp (average) generating 1750 kWh per annum.

## **Reducing carbon emissions by tackling fuel and transport poverty.**

**By Rex Warner, Reepham**

In the six weeks since I was asked to write this piece, the price of domestic heating oil has **increased by over 50%** (note 1), leading to a dramatic increase in the number of UK households living in fuel poverty across the two million homes in the UK who rely on domestic heating oil. Recent fuel price rises have also led to greater transport poverty and, thereby, reduced access to services for many UK households – especially those who live in rural areas.

Last month the Joseph Rowntree Foundation published research which showed that those living in rural areas have to earn up to 20% more than their urban counterparts to enjoy the same standard of living, and that the two principle causes for this rural poverty are fuel and transport poverty (note 2).

Reepham's Low Carbon Community has been able to show that by developing appropriate solutions to address fuel poverty and transport poverty we can also deliver significant carbon emission savings associated with heating and transport – the two highest sources of emissions for households across the UK.

### **Reepham Green Team**

**In 2004 we established the Reepham Green Team – a social network of individuals and community champions focused on developing projects to reduce our carbon footprint.**

One of the Green Team's first actions was to undertake a comprehensive community carbon audit. Reepham was one of the **first towns in the UK to carry out a comprehensive community carbon audit**. The 7 page survey was completed by nearly **a quarter of all households in a single day**. The audit was analysed by CRed at the University of East Anglia. The results showed that Reepham's carbon emissions per capita were **48% above the national average**.

The carbon audit showed that the three main reasons why Reepham's carbon emissions were so high was because:

- a) Only 8% of homes were properly insulated (relatively old housing stock)
- b) Reliance on domestic heating oil (no mains gas)
- c) Reliance on personal cars for transport (poor public transport provision)

As part of the carbon audit, members of the Reepham community made CRed carbon reduction pledges amounting to 127 tons CO2 per year.

### **Reepham's Replicable Projects**

**Following the carbon audit in 2004 the Reepham Green Team helped develop and deliver an action plan of over forty projects.** Three of these projects dealt specifically with our three main issues - lack of insulation, use of domestic heating oil, and reliance on personal transport.

**a) Reepham Insulation Project (R.I.P. CO2)** - we developed a community engagement model which has led to the number of homes in the town being properly insulated increasing by **over**

**100% (from 100 to 200 homes, or from 8% to 16% of the housing stock in Reepham). The project was developed and delivered by the local Rotary Club, working with installers and linking to existing Government grant schemes. The community engagement model developed for the R.I.P CO2 project has the potential to be used for other carbon reduction activities and also to be replicated to other communities across the UK.**

b) **Biofuel trials** - Reepham has been the "**test-bed**" community for the UK's first trials of **liquid biofuel in domestic boilers** - a £250,000 project funded by Carbon Connections and industry partners. The biofuel trials also covered local schools and community buildings. These trials involved the use of a blend of waste vegetable oil and domestic heating oil.

c) **Reepham Car Club** - launch of a community car club using **low emission vehicles** in the town, as the first part of establishing the Norfolk Car Club, which aims to be the **first county-wide car club in the UK** ([www.norfolkcarclub.com](http://www.norfolkcarclub.com)).

The projects outlined above have fostered **community leadership** which has resulted in the development of the Reepham LCCC projects - the next stage in our journey to become a low carbon community. The Reepham LCCC projects have been developed and delivered by grassroots community groups representing substantially all of the community as part of an integrated carbon management plan, with each project being led by a community champion.

#### **Our key learning is as follows:**

- Projects are most effectively and cost-effectively developed and delivered by well resourced **local community organisations**, led by **local community champions**. For example, the number of homes in the town properly insulated increased by over 100% with the Reepham Insulation Project (R.I.P. CO2), delivered on a voluntary basis by the Rotary Club linking with existing Government grant schemes.
- The best way to spread the message is by **word of mouth** and online through both trusted existing local organisations and new social networks.
- The key driver for change for most people is money - **cost savings** associated with new insulation, heating, lighting and transport solutions is the best way to drive change.
- **Economic benefits:** The Reepham LCCC projects have led to economic benefits. For example, the car club has sustainably delivered:
  - direct employment (project management, service team)
  - associated employment (fitting of telematics, customer service)
  - cost savings for business and personal users
  - greater flexibility for businesses to grow
  - affordable access to services, including education, training and employment which, in turn, stimulates economic growth.
  - In addition, there have been reductions in fuel poverty (e.g. 20% reduction in fuel poverty amongst tenants of the housing trust properties), and cost savings across most installations (e.g. 90% reduction in maintenance costs through using LED street lighting)
- **Social benefits:** The projects have led to a greater sense of community, and stronger local organisations with more active and empowered community champions. The momentum created within existing and new organisations has led to the development and delivery of

further projects not only within the town, but also to other communities. For example, the car club has expanded to Norwich, Aylsham and Cawston and usage has **grown 500% in the past 12 months** (from 20 bookings/month to 100/month). Successful delivery of the Reepham LCCC projects has created stronger demand for solutions based on fundamental issues such as fuel and transport poverty. Whilst these fundamental issues of fuel and transport poverty exist, **they first require translating** into demand for solutions and then delivery of solutions. The best way for this demand and delivery to be achieved is through trusted local organisations and their respective local community champions.

- **Environmental benefits:** The projects have led to a range of environmental benefits, including:
  - 61% carbon savings from refurbishment of housing trust properties (these are being surveyed, monitored and measured by Saffron Housing).
  - 65% reduction in energy use and reduction in light pollution from new LED street lighting
  - 30%-50% reduction in energy use from other heating and lighting solutions.
  - 50%-65% reduction in transport-related carbon emissions in the main user groups of the car club.
- Using Reepham LCCC projects to **showcase technologies** has stimulated demand across the region. For example, the CPRE hold a series of green buildings open days each year, and they have recently had open days in Reepham as a green community where members of the public can view a range of technologies and solutions at various sites in the town.
- A dominance of single solutions, especially solar PV, may not be good. Perhaps it is better to focus greater resources on demand reduction, more cost-effective ways of energy production, and a range of solutions based on needs. For example, solar PV does not, in most cases, directly or cost-effectively address fuel poverty or transport poverty. These issues are better addressed with solutions which improve the thermal performance of homes, heat homes sustainably and provide affordable access to transport.
- Reepham LCCC projects seek to **join up and integrate deployment of the Government's policies** and programmes. For example the car club, being replicable and scaleable, shows how local sustainable transport projects can evolve.

#### Footnotes

(1) From 43p to 65p per litre between Nov. 2010 and Jan. 2011

(2) [www.jrf.org.uk/publications/minimum-income-rural-households](http://www.jrf.org.uk/publications/minimum-income-rural-households)

#### Further Info

[www.reephamchallenge.org](http://www.reephamchallenge.org)

[www.norfolkcarclub.com](http://www.norfolkcarclub.com)

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## Learning through doing: Mistakes, successes and revelations from the Transition Streets Totnes project

*By Fiona Ward, Transition Town Totnes*

### **Project Overview - our four key components:**

- **Social groups:** Our project gets small groups of friends and neighbours together in their homes. Each group meets seven times over a 3-5 month period, and we send a facilitator along to the first meeting. Each session focuses on a different subject and is supported by a workbook, which suggests practical actions relating to energy use in the home, water, food, transport and waste. Each person commits to take on a number of the actions. At each meeting they share experiences and support each other. At the final group they decide where to take the group next, and most of them keep on meeting. This basic project was already in operation, called Transition Together.
- **Energy efficiency:** all participants fill in a form provided by the Energy Savings Trust (EST) and receive a home energy report. They can then apply for highly subsidised energy efficiency measures through our partnership with South Hams District Council's (SHDC) 'Cosy Devon' scheme, including loft and cavity wall insulation, and in some cases, secondary glazing and external wall cladding. We train up one person from each group to be the 'Street Energy Assessor' and this person then helps others in the group to identify and carry out some of the practical actions.
- **Domestic solar PV:** Once the basic energy efficiency steps have been completed (e.g. loft/cavity wall insulation, draught-proofing etc.) and if houses are suitable for solar PV we offer £2,500 or £3,500 (depending on income) towards a solar PV system. For low income households our local authority SHDC offers low interest loans through their partnership with Wessex Reinvestment Trust.
- **Community awareness:** In partnership with Totnes Town Council (TTC) and SHDC, our project installed a 14kWp solar PV system on the Civic Hall, the most central and visible building in the middle of town. The income/savings generated will be used to support further projects, with a public digital display showing the significant energy and carbon savings being made by the project and households. We also hold large public events like Energy Fairs and Eco-Home tours.

### **Successes**

We now have 57 groups of neighbours participating in the groups, a total of around 450 households (over 10% of our local residents). This is despite the fact that the solar PV grants are only available to a limited number of these participants. Project evaluation has shown that on average, each household saves £600 per year on its utility bills and other household costs, and over 1.2 tonnes of CO<sub>2</sub>. To date this means the community has saved an estimated £270,000 and 540 tonnes of CO<sub>2</sub>. This excludes carbon saved and income generated by the solar PV installations.

In terms of qualitative results we ask a number of questions to assess if the project has changed attitudes and behaviours. The greatest positive changes have been recorded in "I know what practical, effective actions I can take to reduce the potential impacts (of peak oil and

climate change) on me/others”, “I’m aware there are simple, easy things I can do to reduce household costs - and I know how to do them” and “I feel connected to, and a part of, my local community”.

Also at least 25 other transition communities (UK and around the world) have asked for the Transition Together project materials, which we openly share.

We feel our household recruitment strategy worked very well, in fact a bit too well (see below). We put a lot of time and effort into this as residents are the cornerstone of our project. We recruited a marketing expert to the project team (average of 1 day per week) who has greatly influenced our previously enthusiastic but often rather amateur attempts at designing and writing marketing materials and planning outreach activity. This was definitely worth every penny!

We looked at the kind of people in our community and categorised them into 4 groups, and then designed our strategy and materials accordingly. Our aim is recruit at least 30-50% low income households which we think we have now met. Categories include: **settlers** interested in neighbourliness/technical DIY/home improvements; **prospectors** interested in income/property value; **pioneers** active or interested in sustainability, social justice, community-building; and: interested in debt/bill reduction and often getting specialist/community support

Particularly for the hard-to-reach we have focused entirely on messages like ‘Fancy some free electricity?’ and ‘We can give you money towards a solar-PV system... and if you’ve less than £250 in your pocket after you’ve paid your household bills each month you could get it virtually for free’. It’s all about the money and we don’t get into environmental impacts, CO2 emissions etc. This worked really well.

Our strategy for both the recruitment phases was to use press releases (we have something in the local press about once a month), posters around town, project materials at every possible outlet including TTT events, local shops, library etc. (we did small versions of the poster as postcards, with quotes from existing low-income households). We also held an Eco Homes weekend then a big event in the Civic Hall (linked to our solar PV install there) with lots of energy-related traders with much related publicity, speakers from existing groups etc. We also went out into the local parishes and aimed to get 1 group from each of those. But the best means of course, is word of mouth, and those involved in Round 1 have been great ambassadors for Round 2.

Internally we have a well defined project, strong project management structures including a monthly steering group and a paid project team with a wide range of skills. Our partners are committed and supportive. We all love being involved with the project, it has a great buzz around the town and seeing the increasing number of panels up there on the roofs is wonderful.

## Problems

Our main issues have been/are are follows:

It has taken **much longer than expected** to go from starting a T-Together group, to getting the PV systems installed. Reasons for this include:

- We realise we need to do more of a ‘sales job’ on householders who may never have previously known about/thought about solar PV systems – it’s quite a leap
- Initially slow response by our installer in chasing quotes/responding to householder queries

- The householder's need to stump up the rest of the balance from savings or a loan
- Processing of low income applications is much longer and more complicated than for 'able to pay' – the very people for whom you least want long, complicated, form-filling processes
- This added pressure to our supplier who then had to deal with a bottleneck of installations
- Still, we are left with quite a challenge to get all the systems up by end of March 2011 (135 in total)

**Dealing with some negativity** from some individuals, including local councillors, about why we are giving grants to able-to-pay rather than just giving it all to low-income (fair point, but we are looking for a full and representative participation) – with more of a skew towards low-income in Round 2 we hope we have addressed this somewhat.

**Oversubscription** – for R2 we were much clearer that there were limited grants available, so that people were not too surprised when they were not selected. We have still been able to offer them some additional 'sweeteners', like training up someone in their group to be an Energy Assessor and there are fewer ruffled feathers.

**Getting the local authority to commit a definitive amount of funding** to the project that is used for the low-interest loans – we are still unclear if they will have enough to support all those that want to take this up. While they are very supportive and do all they can to help, they have their own (worsening) financial issues to deal with, which is likely going to impact our ability to install at all low-income properties.

Working with **Housing Associations** has been challenging, mainly due to the timing of their budget cycles not aligning with the tight project deadlines – however we are working with one HA now in Round 2 and are exploring how this will work i.e. around ownership, who gets the FiT, etc.

We **lack capacity to do more follow-up with the groups**, to learn more about what worked, didn't work and why, why some people dropped out of groups and so on. We'd hoped to be part of an ESRC project but ours wasn't successful so this left us with a gap. This is the focus of the research activity we are belatedly starting in Jan 2011.

## Revelations

The biggest revelation has been in the feedback from the groups themselves, who more than anything, value the **new social connections** they are making and which appear to last well beyond the 'official' group meetings, with most groups continuing to meet in some form or other. The household and carbon savings, which acted as a hook initially (external motivation) are secondary to what keeps people engaged (intrinsic motivation). **We underestimated the desire for human connection!**

The benefit most often cited by participants is the enjoyment they get from connecting with their neighbours and making new friends, and that they feel supported. There is clearly a strong desire in the community to interact more with neighbours, but it takes something like this (a workbook and a structure) to help them feel comfortable to ask the neighbours round.

Our other surprise has been that while the offer of grants for solar PV motivated people to join the project, we believe that there is a large number of people for whom this wasn't a factor. Even now, though we are no longer offering grants, we are still having new groups starting.

Finally, we realise we have created a 'market place' of over 450 homes so far, all up to speed on carbon and bill cutting and the need to wean ourselves off fossil fuel. They are more interested in saving resources, local food, non car transport options and buying less. This growing body of people, we are starting to see, is an audience for other projects and activities that Transition Town Totnes offers, and for the social enterprises that we are starting in order to offer more sustainable local goods and services (e.g. community owned renewable energy company).

If you would like to hear from some of the participants please watch the 8 minute film we made for a recent event [www.transitiontogether.org.uk/streets/home](http://www.transitiontogether.org.uk/streets/home)

### 3.3. Perspectives from outside of the LCCC

A survey of the applicants to LCCC who did not receive funding on this occasion was carried out with the aim of addressing the following three questions:

- (1) How did unsuccessful applicants find the process of applying for LCCC funding?
- (2) What were the impacts of applying for LCCC funding?
- (3) What do they see as the priorities for future government support?

#### **Methodology**

218 unsuccessful applicants to LCCC were asked to complete an online survey, of which 126 responded (an impressive response rate of 58%). The questionnaire was designed to cover the following issues:

- *Their application* – what technologies and behaviour change methods they had planned to use
- *The applicants* – who had been involved in preparing the application
- *The application process* – how they had found the timetable, written material, informal feedback available while preparing their application, and formal feedback after the funding decision; what they had found most difficult; and how the application process could be improved for future programmes
- *The benefits of applying* – what benefits they had experienced as a result of applying
- *Future support* – what areas they would like advice and support on, and what they consider the priority for government

The full results can be found under separate cover, whereas this section of the report outlines the key conclusions from the work.

#### **Key findings**

##### **1. Process**

***What worked well:*** Respondents liked the concept of LCCC, particularly the community focus. The programme succeeded in attracting applications from across England, and from both local authorities and third sector organisations. Applications included a wide range of technologies and almost all included some behaviour change or public engagement. During the application process, the opportunity to discuss applications informally with the team at DECC, DETI, and Welsh Assembly was well received.

***What worked less well:*** There were few applicants from Wales and very few from Northern Ireland. There were low levels of involvement from local businesses in preparing applications. Certain aspects of the application process were problematic, particularly the tight timescale, lack of clarity about scoring criteria, and feedback about funding decisions. Although community groups had been keen to apply, they felt at a disadvantage because they lacked the necessary time and expertise.

##### **2. Impacts**

**Positive impacts:** Many respondents gained some benefits from applying, particularly making new contacts or thinking about new ideas. LCCC was seen as a programme that respondents themselves could learn from and that had the potential to influence policy makers.

**Negative impacts:** Many respondents voiced their disappointment about the outcome, particularly given the amount of work they had to put in. It was therefore suggested that tighter criteria more clearly conveyed during the application process, a two stage process, and smaller amounts of funding given to more organisations would be worth considering for future programmes.

### 3. Future support

**What support would be welcome:** Many respondents asked for more funding to be made available and for advice to be provided on accessing funding, including from private investors (Table 1). They also requested funding to be structured differently (e.g. smaller sums to more organisations) and the application process to be more straightforward and less onerous. They would like advice and support on legal matters, technical matters, and behaviour change/community engagement. They would also like to stay in touch with DECC, be kept informed of progress on the LCCC programme, and have the opportunity to learn from LCCC.

**What support would be less welcome:** There was less demand for advice on organisational structure, planning matters, or engaging local authorities.

**Table 1: Issues on which support and advice would be welcome**

Issue	% of respondents		
	LA	3 <sup>rd</sup> sector	All respondents
Accessing funding	69	69	<b>70</b>
Engaging private investors	50	45	<b>48</b>
Behaviour change	37	24	<b>32</b>
Specific low carbon technologies	33	26	<b>31</b>
Legal matters	23	39	<b>31</b>
Engaging communities	39	16	<b>30</b>
Organisational structure	21	24	<b>21</b>
Project management	19	20	<b>18</b>
Engaging local authorities	10	24	<b>17</b>
Planning regulations	16	18	<b>17</b>
Other	11	16	<b>14</b>
<b>Base</b>	<b>70</b>	<b>51</b>	<b>127</b>

*Percentages sum to more than 100% as respondents could give more than one answer.*

### 3.4 Perspectives from the evaluators: Dialogue by Design

Dialogue by Design (DbyD) was appointed by DECC to undertake a programme of co-inquiry and shared learning with the 22 LCCC communities. This composed a team of 14 facilitators across England, Wales and Northern Ireland. The involvement of DbyD facilitators with the LCCC projects spanned from January 2010 to March 2011, and involved the following strands:

#### **i) Launch event**

In close collaboration with DECC, Dialogue by Design organised the LCCC launch event which took place in London on 8 February 2010. This one-day event saw members of all the 22 LCCC projects as well as the entire team of DbyD facilitators gathered at the Royal Horticultural Halls. Part of the day was used for inception meetings between the community groups and their facilitators. The presence of numerous experts and advisors enabled community groups to enquire about support they could call upon during their projects.

#### **ii) Engagement support**

One of the key roles of the DbyD facilitator was to help projects organise and deliver their engagement with the wider community. This was done through the creation of a bespoke engagement plan in the early stages of the project followed by ongoing liaison between the group and the facilitator, including facilitated workshops. It was acknowledged that each community would have different engagement needs; therefore they all undertook engagement reviews and agreed engagement plans with their DbyD facilitator.

#### **iii) Review meetings**

In order to collect and compare the community groups' experiences and learning, the facilitators held review meetings with them. Depending on the progress made in the communities, the review meetings either focussed on the experiences of the core project team, or included experiences of both the project team and community members having participated in the project, such as residents with renewable technologies installed to their homes. It was originally planned that each of the community groups would hold two facilitated review meetings, but as the LCCC progressed it became apparent that a single review meeting would be sufficient for several groups. After each review meeting a summary report was prepared and these collectively form the basis for much of the analysis and synthesis in this report. In total there were 27 review meetings and, as such, 27 individual reports.

#### **iv) Low Carbon Communities Network event**

As part of the Low Carbon Communities Networking event (16-17 January 2011, part funded by DECC), DbyD held a bespoke LCCC workshop. The workshop provided a space for project groups to share their learning and experiences as well as exchanging contact details.

#### **v) Thematic policy workshops**

DbyD worked with DECC to organise a series of thematic policy workshops, providing a space for community groups to share experiences on specific elements of their projects and for DECC policy leads to obtain valuable insights to inform their work in these areas. They were held in February and March 2011, according to the following themes: (i) Community scale renewables

(Bristol), (ii) Domestic renewables (London), (iii) Domestic energy efficiency (London), and (iv) Marginalised & fuel poor communities (Nottingham).

## **Key Findings**

This section is largely based on the data gathered during review meetings the facilitators held with the communities they were working with, but also builds on findings that the DbyD facilitators' team accrued during the course of their work with the community groups. It focuses on four key issues:

- Organisational model and skills
- Project focus and low carbon measures
- Community engagement
- Behaviour change and project legacy

### ***i) Organisational model and skills***

In order to manage the income and spending involved with the LCCC, community groups needed a legal entity. Groups that had been in existence for some time often had a structure in place whereas younger groups established a variety of new structures. Many groups note that the project's administrative burden has been considerable, especially given the restrictions on resources being allocated to project management. They recommend that projects of this scale make arrangements for paid staff, as the administration and coordination tasks may prove too much for volunteers.

According to the community groups it takes a variety of skills, including some specialist ones, to successfully deliver projects. Some emphasise that the application process for LCCC funds already required a range of specialist skills, likely to be found with established groups and organisations only. External advice was sought on issues where groups identified skills gaps, including legal and financial issues and technical expertise. Where possible, groups relied on existing links and networks for advice. Some of the groups believe they would have benefited from more support and guidance on acquiring the necessary skills and knowledge.

Groups' experiences of working with experts, advisers, contractors and authorities form a mixed bag, partners have not always been able to meet groups' expectations. Still, there is no hesitation among the groups that working with others has been essential in the delivery of their LCCC projects. There was a preference for working with local, trusted partners. Many groups benefited from a good relationship – or partnership – with their local authority, often secured through personal engagement with key individuals.

### ***ii) Project focus and low carbon measures***

Some groups used the LCCC funds to further and complement their existing projects and aspirations; other groups saw the grant as an opportunity to develop entirely new projects. Although the groups had a variety of reasons for selecting specific low carbon measures, some of the decision-making was dominated by practical considerations with regard to time and budget restrictions.

Another issue present in many groups' considerations was the choice between measures aimed at the best carbon result or the best 'community result'. Given the objectives of the LCCC, several groups favoured the latter and chose to invest in measures with a visual appeal, such as solar photovoltaic arrays on roofs, despite the fact that other, less visible measures

were acknowledged to have a greater carbon saving potential. A further consideration for many groups was the potential for their investments to return an income. The availability of feed-in tariffs (FIT) for renewable electricity generating installations tempted many groups into favouring these over, for instance, energy saving measures.

Although a variety of unforeseen complications was encountered across the LCCC project – from planning and insurance issues to malfunctioning equipment – the overall impression is that groups are satisfied with the measures they established. This is echoed in early feedback from community members whose homes or buildings have low carbon technologies installed.

### ***iii) Community engagement***

Among the community groups there is a widespread recognition of the value of community engagement. Several groups met with some degree of reluctance from their community once their project was up and running, something they believe might have been avoided had they consulted with the community from the earliest stages of the project. Where early engagement was omitted, groups often identify the time pressure on delivering the investments as a major reason, causing community engagement to be sidelined.

Sometimes community groups found that their assumptions and expectations did not match those of the people in the community, leading to change in their approach. One issue that was sometimes underestimated at the planning stage was the need to ensure that the distribution of the project benefits was perceived as fair and that it was clear who could participate. Groups have also become aware that it matters to be seen as inclusive, while established groups run the risk of being regarded as the ‘usual suspects’.

A great advantage of community groups delivering projects like LCCC is that they are well-placed to gain the trust of community members. Many groups, particularly those working in marginalised communities, stress the importance of trust. Their experience is that existing community structures or sub-groups can help build bridges to people who otherwise would not be prepared to engage in a low carbon initiative. Also, it matters a lot how the project is presented, with many groups testifying that ‘helping people save money on their energy bills’ resonates best with their community.

### ***iv) Behaviour change and project legacy***

Just one year after the inception of the LCCC projects, most groups believe that it is too early to draw conclusions about the extent of behaviour change achieved. Certainly, groups have seen elements of their projects, most of all visible measures and installations in schools and other community buildings, result in increased awareness across the community; evidence that this has led to changed behaviours is still sparse.

This is not a pessimistic note, rather an acknowledgement of the nature of behaviour change, which is seen to be a slow and gradual process. This is why many groups are determined to build on the momentum of their LCCC projects and make optimal use of the legacy. In some cases this means sustaining low carbon activities in the community using the income from FIT or revolving loan schemes, in other cases this supposes an active involvement of people who are benefiting from low carbon installations, as change ambassadors. Groups feel that it is important to help people see the change they are making, even if their original motivations were not predominantly environmental.

## ***Reflections for policy***

Drawing together comments of the community groups and the reflections of DbyD facilitators who travelled through this project with them, consistent themes emerge. The unique forms, ambitions and processes of the communities often represent their key strengths – where they experience difficulties this frequently relates to incompatibilities with the structure of funding programmes like LCCC. Time restrictions, evaluation requirements and a perceived lack of relevant support were sometimes barriers to success. However, these barriers were ultimately overcome, and community groups involved are keenly aware of the value of this learning, and eager for it to be captured and shared with other practitioners.

In more practical terms the project groups found that they were able to provide a flexible, trusted face of low carbon in their community, successfully engaging local people. They recognise the value of schemes such as feed-in tariffs as tools to maintain their work in the long term. Loan schemes also recur frequently, and show great potential as mechanisms to transform one-off funding like the LCCC into self-sufficient community funds. This long term sustenance of their programme is recognised by most groups as key to effecting behaviour change. While the short term gains of the projects have been great, it is frequently acknowledged that they are not yet substantial enough to constitute significant behaviour change. ‘pump priming’ role that local action can have in inspiring further change.

### 3.5 The LCCC and Social Enterprise

The nature of social enterprise is particularly well matched to the ethos of community-based initiatives, especially those that have environmental as well as social objectives. The community or social re-investment basis on which they operate synchronises well with community initiatives that require local buy-in and community participation. Social enterprises provide a business model that is sustainable, supporting and ensuring the continuation of activities and thus the good will and interest of the community. This is achieved through the provision of social benefits that supplement and build on environmental benefits, whilst incorporating broader outputs, including training and education or employment opportunities and greater community cohesion.

Three conditions for social enterprise success provide the framework against which LCCC projects are evaluated and on which our conclusions are based.

- The ‘triple bottom-line’ entails achieving a balance of social capital, natural capital and financial capital (often referred to as people, planet and profit).
- ‘Language’ and how the concept of sustainability is articulated. When social entrepreneurs talk about ‘sustainability’ they mean the successful maintenance of the balance of the triple bottom-line, not just environmental or even social sustainability.
- ‘Finance’ and sustainability of their business and activities through generation of profit. As with any business, social enterprise is underpinned by a clear business plan, predicated on earned income.

LCCC projects were found to have engaged with social enterprise in three ways, some of which meet more than one of the descriptions below:

- The project is managed and delivered via an existing form of social enterprise. This was true of fifteen projects.
- The project is in the process of establishing one or more new social enterprise structures, the case for four projects; or is considering whether a new social enterprise is required, also the case for four projects.
- The project has established one or more new social enterprises to deliver their project, in whole or in part. This was true of five LCCC projects.

#### **Key findings**

- The funding for projects through the LCCC programme allowed already established projects to continue with existing activities or to develop new dimensions that would not otherwise have been feasible. As a consequence, many of these established organisations or collaborative groupings went on to set up, or intended to set up, a new social enterprise; even those which were already a form of social enterprise.
- The evaluation identified three types (or a combination of types) of activity adopted by LCCC projects engaged with social enterprise, these were:

- Operating in support of the 'parent' organisation's aims and objectives.
  - A holding company into which income generated from project-owned assets/activities (renewable technologies or car club in the case of Reephram) are to be held for future community investment.
  - Involvement in more complex income generation practices, such as co-operatives or offering shares.
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- A condition of the LCCC grant, which required funding for capital measures (90% of the grant) to be spent within a twelve-month period, contributed to a strong focus on the delivery (installation of capital measures) phase of many projects. One apparent result of such prioritisation is a limited focus on the third principle of social enterprise and long-term business strategies.
  - In terms of business planning and income generation, projects have recognised the value of policy initiatives such as FiTs, RHI and ROCs and have developed structures to access these income streams.
  - There are clear parallels between social and community enterprises; however, the community-specific focus of the latter suggests that some LCCC projects may not fully meet the business sustainability (financial principle) of social enterprise. In their drive to generate income for community re-investment, the structure of some LCCC projects reviewed is closer to that of a community enterprise than a social enterprise.
  - LCCC projects clearly understand the case for financial sustainability; however understanding of what this means in practice and how it can actually be achieved is more limited.
  - Support can be required at every stage of a project's development, from embryonic concept to maturity and effective service delivery and, crucially, business sustainability.
  - Social enterprises enable a combination of social and environmental objectives that can uniquely engage communities and promote sustainability in all its forms.
  - LCCC projects generally agreed that, rather than relying on individual exploratory approaches to seek information, a 'light touch' toolkit would be valuable resource and that it could include: legal templates; a 'need to be aware of' section which would highlight potential problems and how they can be resolved; and a signposting section providing directions to available advice and support.
  - Many communities are unaware of the range of technologies and potential financial incentives available for developing community-based schemes and, consequently, risk making choices that are inappropriate. Some projects noted the potential for establishing a specialist mentoring service to ensure that the volume of successful projects is maximised.