Article:
Lucas, K orcid.org/0000-0002-4009-7017, Hamilton, J and Mayne, R (2016) Building capacity through action research: reflections on working with low carbon communities in the United Kingdom. Local Environment, 22 (6). pp. 725-745. ISSN 1354-9839

https://doi.org/10.1080/13549839.2016.1259294

Building capacity through action research: reflections on working with low carbon communities in the United Kingdom.

Abstract (250 words)

This paper describes a four-year programme of 'action research' undertaken with six communities in the UK, referred to as the EVALOC (Evaluating Low Carbon Communities) project. The research combined a programme of community-facing events with phased household-level monitoring of energy and carbon reduction interventions. These interventions were funded by the United Kingdom's (UK) Department of Energy and Climate Change (DECC) prior to the onset of the study.

Action Research (AR) has a long history within the social sciences. It has been applied at both the individual and collective level, to a wide range of policy-relevant research contexts. It has recently been adopted within the context of environmental behaviour change programmes in the UK, with a number of methodological challenges. The EVALOC project's challenges included developing a collaborative research design; building reciprocity between the researchers and research participants; dealing with biases and burdens in the research process; ensuring analytical rigour in the interpretation of the primarily qualitative evidence; and dealing with the long-term and process-driven outcomes that arise from such interactions. This paper explores and discusses these issues in relation to selected research outcomes from the AR. We conclude by suggesting that the AR approach has helped to support the low carbon communities (LCCs) who participated in the research with the design and delivery of their energy and carbon reduction activities. The research has also enabled an important process of inter-organisational exchanges between the LCCs, providing rich reflections and learning about the experiences and processes of stimulating energy and carbon reductions.

Keywords: energy behaviours, communities, action research, methodologies, social learning

Introduction (7,028 words)

This paper reports on research conducted in the context of the increasingly politically accepted global challenge to reduce the energy consumption of households in the face of anthropogenic climate change. The focus of the research is the UK, which has a legally binding target to reduce the national level of CO2 emissions to 80% reduction from 1990 levels by 2050 (Climate Change Act 2008). Amongst many other aspects of the UK Government's overarching climate change mitigation plans, attention has been given to the potential influence of local community-based organisations in

the energy behaviours of households, through local level engagement and action (e.g. Seyfang et al 2013, Burchell et al 2014).

Evaluations of behaviour change projects have indicated the value of adopting more resource intensive, personalised approaches, delivered either by professional advisors or community groups (e.g. Eyre, Flannagan and Double 2011, Letcher et al 2007). However, there is a lack of robust evaluation of the impacts of Low Carbon Community-led initiatives, combined with a growing acknowledgement that the effective evaluation of such impacts may require more detailed and time intensive methodologies (e.g. Hobson et al 2016, DECC 2014).

It is partly in response to this methodological challenge that we present our experience of undertaking a four-year programme of Action Research (AR) with six Low Carbon Communities (LCCs, see Note 1) that participated in the EVALOC research project. The EVALOC project was designed to assess, explain and communicate the changes in energy use due to community activities within six selected case study projects under the Department of Energy and Climate Change's (DECC) Low Carbon Communities Challenge (LCCC) initiative, a government-supported initiative to transform the way communities use and produce energy, and build new ways of supporting more sustainable living (Gupta et al 2015). Based upon the evidence drawn from the community participation aspects of the EVALOC project, we aim to demonstrate how AR with LCCs can be used to produce high quality research outcomes through participative processes of planning, evaluating, reflecting and sharing learning from their activities and interventions, whilst also being useful for the LCCs participating.

In particular, the paper critically examines the strengths and weaknesses of AR in monitoring these outcomes from the 'researcher' and 'research participants' perspectives.

Literature review: theoretical underpinnings of the 'action research' process

Whilst the content of the AR activities in this study has generated large quantities of data (which will be the focus of forthcoming papers), this paper specifically focuses

on the process issues and challenges of delivering AR in the context of community-scale carbon and energy reduction projects.

AR describes a diverse set of methodological practices, which at their core involve iterative cycles of planning, action and reflection through theory and practice (Brydon Miller et al 2003, Reason and Bradbury 2001, Reason et al 2009, Bradbury-Huang 2010, Kemmis 2010). This can involve opening opportunities for dialogue between the various actors and experimenting with different cycles of action, reflection and double loop learning (e.g. Argyris and Schön 1996). These actions can, in turn, encourage changes in underlying assumptions, values, considerations and interdependences with wider socio-ecological systems (Freire 1970). It also involves congruence (i.e. checking if what is claimed has actually happened); and a reframing of the issues in the light of this new social learning. AR emphasises partnership, collaboration and empowerment through participation (Todhunter 2001).

The range of AR approaches often includes participatory and deliberative methods, and there is a strong emphasis on experiential and social learning (e.g. Cameron et al 2014, Bradbury and Middlemiss, 2014). There is also a tendency towards the use of narrative and discursive methods, such as interactive workshops, focus groups, and learning histories (e.g. Reason et al 2009, Burchell et al 2014). In addition, a wide epistemological stance is usually adopted, which incorporates learning from a range of modes such as poetry, art and theatre, alongside the 'inner and outer arcs of attention' (i.e. including the feelings of participants, and acknowledging the political or social contexts in which the action is taking place (Marshall 2001).

The literatures claim that AR is particularly suited to organisational learning, as it challenges the 'information deficit model', i.e. the assumption that giving people more information will automatically lead to a change in their behaviour or actions (e.g. Irwin and Wynne 1996, Devine-Wright 2007, Catney et al 2013). Instead, AR incorporates processes for social learning between individuals and organisations (e.g. Crane et al 2013). This can help ensure that the approach is beneficial to the researchers and participants, and can bring 'actionable' results (Kemmis 2010, Bradbury-Huang 2010).

It is for these reasons that an AR approach was adopted for the EVALOC study, but specifically because of the emphasis on community participation within AR. The

amount of community participation in AR changes according to who is initiating, designing, directing, conducting and interpreting the research. As such, Participatory Action Research (PAR) emphasises a deeper level of participation and equality of involvement of all research partners. As the EVALOC research project involved differing degrees of participation, we have kept to the broader term of AR for this paper.

The literatures regularly raise a number of cautionary issues regarding adoption of the AR delivery process within research, which we were aware of at the outset of the study. We will discuss these issues in more detail direct relation to our research findings later in the paper. Here we offer an overview of the main concerns taken from a review of the literatures.

Researcher positionality

The first is the issue of *researcher positionality*. In academic-led AR, such as our own research study, a balancing of roles and expectations is clearly required, and it is the responsibility of the researcher to make the multiplicity of their roles clear (Rogers et al 2012, Charles 2011). Smith et al (2010:423) argue that whilst researchers might get placed in the role of outside expert, they must be open about what they bring and how they are perceived, and *'must approach the Participatory Action Research endeavour as people with knowledge to share who are also sincere learners, and whose knowledge is not automatically privileged over others'* .

This can present the potential for academic researchers to underplay their skills, but Stocker (2010) urges academics not to sell themselves short, but to help document and share the processes of the groups they are working with to enable further learning. Greenwood and Levin's (1998) concept of the researcher as a 'friendly outsider' is often used as a useful definition of the appropriate role of the action researcher (e.g. Rogers et al 2012, Charles 2011). However, further tensions can arise due to conflicting roles held by the researcher themselves.

Community involvement and participation in research

Another issue of contention is the real level of *community involvement and participation* in the research. Whitelaw et al's review of action research (2003) drew on Cornwall's identification of six main stages of involvement in Participatory Rural Appraisal (1996). These stages range from 'co-option' at the lowest level of

community involvement, through 'compliance', 'consultation', 'cooperation', 'co-learning' and 'collective action', where there is gradually greater involvement of communities along the spectrum and eventually communities enact their own agendas. In practice, the roles of researchers and collaborators change throughout the process of AR (Platteel et al 2010), and this was the case with the EVALOC research, as we discuss later.

In practice, academic-led AR projects, such as EVALOC, may start with the least involvement (co-option) and move towards more involvement (collective action), as familiarity with the research methods, opportunities to use the research, and trust increases over time. In this way, AR can be described as highly 'path dependant' in that what happens at any one stage of the research process is determined by the earlier choices and experiences of the academic researchers, research participants , and other actors outside their direct field of influence. The spectrum of community involvement in the research will generally differ according to the pre-existing capacities, resources, skills, knowledge, available time and priorities of the actors involved, as well as the specific circumstances of the project. Too much participation may inhibit community involvement in the research process (Stoecker 2009), as given the limited time and mostly voluntary nature of LCC's activities; it may be beyond their capacity to engage fully.

Differential power relations

Further commonly raised tensions in AR projects involving academic institutions can arise from *differential power relations* in terms of: i) the relatively privileged position of the academic (with his/her time paid for, as opposed to the mainly voluntary contribution of community participants); ii) the differing timescales and priorities attached to the action and research elements, which can sometimes take precedence over the research needs of creating a 'communicative space' (Charles 2011); and iii) in the nature of 'action' that might arise from the research, both positive (e.g. Unsworth 2012) and negative (e.g. Estacio 2012). The bid writing stage as of the research process has also been identified by Stoecker (2009) as crucial to the formation of a collaborative research agenda, where too often lack of involvement has limited the potential for collaborative research.

More critically, Estacio and Marks (2010) question the degree to which emancipation and empowerment (for all participants) can ever take place within an AR project alone, as the wider socio-political context can hinder individual and group empowerment, and the achievement of more ambitious aims. They argue that achieving wider change could require cycles of action and research that takes place over generations, and conclude that Kemmis and McTaggart's (2005) assertion that '*empowerment can be achieved through community participation in action research'* is exaggerated (Estacio and Marks 2010: 522). To this end, our research has also explored the socio-economic and resource constraints on LCCs and individuals, and the extent to which the EVALOC AR has added capacity to the LCCs.

Not all of these concerns can be entirely eradicated from the research process, but we would argue that AR is not the only approach towards which these criticisms have been levelled, the difference being that the process encourages awareness and reflexivity about how they affect the research process. Our findings demonstrate that an iterative and reflective analytical approach can help, as later sections of this paper will discuss.

Research methodology

The overarching programme of research for the EVALOC project involved a two-stranded methodological approach. This combined qualitative and quantitative methods in order to collect the data needed to a) monitor changes in energy behavioural outcomes and b) the *process behind* these changes. The research was undertaken with six selected case study low carbon communities (LCCs) in the UK. The six selected LCCs were invited to participate in the EVALOC study on the basis that they represented good geographical coverage across the UK (including rural and urban areas); were delivering a mixture of established and new carbon and energy reduction projects; and used a range of low carbon technologies and behaviour change approaches to encourage carbon and energy reduction (see table 1 for more details).

The focus of this paper is on the first strand of the research only, which specifically centred on the AR community-based aspects of the research programme. The second strand of the research (presented in Gupta et al 2014, Gupta et al 2015), involved

detailed monitoring and modelling of energy behaviour at the individual household level, which is not discussed further in this paper.

Table 1: Details of the six LCCs DECC funded projects (See Table 1, note 1)

[INSERT TABLE 1 HERE]

Table 1, note 1: The DECC funded activities only represent one strand of the LCC's wider work over the period of the research. Complementary projects run by the LCC are not documented here, but would also have had an influence on community-level energy behaviours. The DECC funding mainly paid for capital projects, with a maximum of 10% of the LCCC funding to go towards revenue costs, such as staff time.

The research also brought the six LCCs together in a series of collaborative workshops to add capacity through enhancing and increasing the social learning between the LCCs. This was designed to help maximise behaviour change impacts and effectiveness of their funded technical and behavioural interventions and associated activities. Figure 1 offers a schematic overview of the AR programme, which was part of a larger programme of events organised by EVALOC, such as steering committees, conferences and workshops (Gupta et al 2015)

[FIGURE 1 HERE]

Figure 1: Overview of the action research elements of the study with LCCs

To be able to work responsively with the needs, requirements and activities of the different LCCs, flexibility was required at the project inception stage [Figure 1, a]. Following an introductory visit to the LCC [b], the community level AR was

organised around a series of community-based and interactive activities (EVALOC research events) with local residents and other LCCs, to explore social learning about energy and carbon reduction. Other research events were planned collaboratively with the research team, either through key informant interviews with leading members of the LCCs, during the introductory visits (Fig 1 [b] or the Focus Groups Fig 1 [c]. The research events were devised in collaboration with key members of the LCC and other relevant agencies (such as schools, faith-based organisations, local councils).

In planning the AR programme with the LCC's, the aim was to complement rather than duplicate or replace their ongoing activities, and where possible, to support and build capacity for their ongoing work. For example, some research events had already been planned by the LCCs prior to the EVALOC project, with the AR providing a wider context and increased capacity for the evaluation of these events.

Focus group discussions

Facilitated focus group discussions (Fig 1c) were an important feature of the collaborative planning aspects of the AR programme. The focus groups took place in three rounds, in 2011, 2012/13 and 2014, and included key members of the LCCs, local participants who were engaged in their activities, and key stakeholders, such as the local authorities, head teachers at the local school, housing association staff, local priest, local councillors etc. The discussions provided an opportunity for LCC members and participants to reflect on the LCC's activities, impacts and external influences, assess the LCC's roles, capacity and relationships with other actors, explore specific issues for research or group development; provide feedback on data from EVALOC research and the EVALOC toolkit of resources resulting from the project as a whole.

Research events

Each community was involved in approximately three 'research events' (Fig 1 [d]) during the period of the AR. These provided one of the main focal points for data collection on the impact of their activities within the local community. Data was

collected using a variety of methods and media, including participant feedback forms, participant observation, photographs, and audio recording and post event follow-up surveys. For example, researchers noted the structure, feel and layout of the events (e.g. was it participative? Did it encourage informal learning between participants?), whilst surveys of participants contained questions about the knowledge gained, most significant part of the event, and any intended energy and carbon reduction actions. The questions for the feedback forms were composed in collaboration with the LCC, and initial findings were reported back and discussed with them. These cycles of action, research and reflection with the LCCs continued over the whole four years of the AR programme.

The EVALOC research events can broadly be divided into '*community events'*, which were aimed at directly engaging the local community in energy and carbon reduction activities and awareness raising, and '*shared learning events'*, which were designed to enable exchange of ideas, strategies, and learning between the six EVALOC LCCs, other LCCs elsewhere in the country, and other relevant organisations such as local authorities and NGOs involved in energy change programmes.

In total, seventeen EVALOC research events were undertaken in collaboration with the six LCCs, which involved a total of 2,145 participants. A full list of events is included in Appendix 1 of this paper and fuller discussion of each can be found in Gupta et al (2015: 112). A representative sample of three of these events has been selected for a detailed discussion of findings in this paper, which allows us to illustrate the full range of issues whilst avoiding duplication and repetition.

The data was analysed (a) qualitatively, through coding answers in relation to the specific research questions in the feedback forms but also allowing for new codes to emerge capture responses to open questions and emergent themes and (b) quantitatively, using excel spreadsheets and graphs to compare the themes across the LCCs (see Gupta et al 2015:13-34).

Case study 1: 'We're oil in this together', November 2011.

This event was an evening of theatre art and music organised by LCC1, and was aimed at and involved the local community. This event was already planned by the LCC, EVALOC research added capacity for evaluation.

Learning and reflections from the event: For participants, the process of creating the theatre and scripts provided an opportunity for reflective and deeper learning about the issues, and the solutions, for example: '*The realisation that to generate the gut energy, the heart for change (and to encourage, support and motivate other people) we need to embrace and get to know oil - not project it outwards as a curse or a problem,*' (participant, male).

For the audience, the event provided opportunities to engage at different levels – through information, being moved emotionally, and through providing stimulus and space and for reflection about the issues, for example: '*I appreciated the use of engaging thought and feeling'* (audience, female); and '*I feel that it is important to give people something to do, politically as well as personal. There should be a suggestions box and a series of campaigns etc'* (audience).

The research conducted at the event helped to inform the direction of future arts and climate change events, for example through the LCC providing a wider range of information about taking action on energy and carbon reduction.

Case study 2: Energy and fuel poverty event, Dec 2011.

This event was organised to help residents address fuel poverty and promote energy saving, organised by LCC5. It was aimed at the local community. The event was catalysed through discussion between the LCC and an EVALOC researcher.

Learning and reflections from the event: The event enabled residents to learn about energy saving, and a range of other practical information issues, in a fun, social, informal and safe social context. As one participant said, they learnt that '*There are people who can help*'. The event also enabled participants to meet their neighbours and strengthen social capital: 'I *am new to the country so this was useful*'. Language barriers were overcome by providing opportunities for one to one discussion and interactive activities (e.g. energy/financial saving quiz, art activities), supplemented by information leaflets. A small number of local residents had not heard of climate change or global warming and/or wanted to learn more.

Case study 3: Partnership working between LCCs & local authorities, *Jan 2012*.

This event was organised by EVALOC after one LCC had requested an opportunity to share learning and experiences of the DECC funded LCCC with other LCCs. It was aimed at other LCCs in Oxfordshire and nationally, and took place as part of a conference for LCCs across the UK.

Learning and reflections from the event: LCCs presenting their work appreciated the opportunity to share learning and more strategic discussion of their approaches; and reflect on their experiences of the Low Carbon Communities Challenge funding, and learn from other LCCs. The discussion highlighted the importance of (a) the range of partnership approaches that bring distinctive and complementary knowledge, resources and skills, in improving domestic energy efficiency and (b) a favourable policy and financial incentive framework. The learning was incorporated into some of the participant's ongoing partnership work.

Discussion of findings and methodology

Figure 2 below gives an overview of the selected analysis from the combined seventeen events, for which we had a total of 428 feedback forms.

[FIGURE 2 HERE]

Figure 2: What was learnt at the EVALOC research events. Note: the 'Other' category is large as it contained responses specific to the event that couldn't be included in other categories.

The majority of respondents at all the research events said that they had increased their motivation, ability and intention of participants to take action (Gupta et al 2015: 30-31). Analysis of surveys all of the surveys that were collected across the six LCCs at the 17 community events (Figure 2) indicates that the main learning outcomes were raising participant's awareness about energy issues and the importance of taking action, and understanding about the process of change. This included understanding why taking carbon and energy reduction actions at an individual and community scale mattered; the variety of other organisations seeking to make change happen; and the kind of change strategies being used in the local area.

The research events demonstrated the positive role and value of community facing events in encouraging carbon and energy reductions as part of a wider LCC project, given the considerable differences in the aims, organisation, content and participation of these research events. However, numbers alone offer only partial insights on their specific value to the behaviour change process. Consequently, these results need to be augmented with further in-depth qualitative analysis that is designed with the specific aim of capturing the underlying factors that played a role in these positive social learning outcomes. This is also useful for identifying the critical factors that influence the AR experience itself. These findings are discussed in the following sub-sections with the use of illustrative substantiating quotes that have been drawn from the analysis.

General reflections on the AR method

The wide epistemological stance used by AR helped to capture the different ways that participants experienced the events; learnt about energy and energy behavior changes; and made intentions to take action. Feeding back the research results to the LCCs enabled them to evaluate the event, which in turn informed the design of future events, and encouraged the LCCs to use a wider range of learning styles into their events.

For example, in Case Study 1, in addition to providing research data about the roles of creativity in engagement with energy and climate change (see Gupta et al 2015:30) the AR provided capacity for evaluation of the event with was useful for the LCC, who included information about energy actions at future events. From Case Study 2, the LCC continued to widen the informal and interactive and creative nature of its activities at its subsequent community events. The research has been most useful and 'actionable' to LCCs where it could be incorporated into an LCC's ongoing work stream, and where there was capacity to do so, for example in Case Study 3, one LCC's approach to addressing Fuel Poverty was informed by learning from other LCCs.

Emergent themes and challenges

We now discuss and reflect upon some of the key methodological issues that were raised in relation to the AR process within the literatures and that also emerged from our own research experience in the EVALOC study. These are categorised under four

themes as these emerged from our analysis of the data: i) research design and building trust and reciprocity; ii) the value-added of collaborative research; iii) researcher 'positionality' and openness and iv) power imbalances and structural constraints.

i) Research design, and building trust and reciprocity.

Whilst the overall research agenda was pre-set by the academic researchers, interactions between the LCCs and researchers have resulted in a mutually beneficial series of events and learning on specific issues. This was aided by having a flexible research design, the researchers entering the process as genuine learners, overcoming the tensions or expectations of the researcher needing to 'know' as highlighted by Smith et al (2010). However, the evaluation aspect of the research may not have reflected the individual LCC's priorities to the same extent if it had been possible to use a tailored participatory approach to design an individualised evaluation framework for each community (for example, see Mayne et al 2013).

We tried to compensate for the lack of community involvement at the research bid writing stage (e.g. Stoecker 2009:393) by incorporating a flexible approach to enable the focus of the community events to be co-determined, and giving LCCs the opportunity to comment on and co-design the feedback forms, and household questionnaires. This was reflected in the feedback about the research process from the focus groups:

> *'It's been really valuable to [bounce around ideas] with you…because it's like you're on the same wavelength ... and having EVALOC …in a supportive context has really helped shape that you know and understand what can be done …and look at what …could be done in the future*' (Group 1, Focus Group 3).

Some LCCs initially experienced tensions and concerns about being 'judged' and had concerns about who the final results would be fed back to. For example, one focus group participant cited an article in a UK tabloid newspaper which incorrectly correlated concern about climate change with higher than average energy usage: *'you'll have to manage [the information about residential energy usage] quite well'* (Group 6, Focus Group 3).

These fears have been addressed by incorporating the LCCs comments on reports before they are made publicly available, and incorporating key stakeholder reflections

about the research, which can aid the validity of the research. However, issues relating to research design, or of not enough data being fed back were also evident, as one LCC (Group 4) noted that they would have liked to see more specific evaluation of energy in specific households, whilst another would have liked to see more in depth and facilitated on-going discussion between the participating LCCs throughout the project:

> *'It's just unfortunate isn't it … at one of the workshop there was five or six representatives and before the meeting started we were all giving it verbally the drawbacks and such as that but we never got in-depth'* (Group 3, Focus Group 3).

Participation in the EVALOC programme as a whole has required a considerable time commitment for key people in the LCC. Some LCCs, particularly those mainly reliant on volunteers, did not have time to participate in shared learning workshops with other LCCs. In practice LCCs ended up participating as much as they wanted or were able (over and above the core contractual agreement), with some engaging more fully than others. We found that as trust, understanding and relationships between researchers and LCCs has increased, so have the mutual benefits arising from participation in the research. However, the large amount of data produced may restrict the number of LCCs, and the variety of participants, that can comment on the research findings.

ii) *The value-added of collaborative research*

We found that involving LCCs in elements of the design, analysis and interpretation of research findings has improved the quality and accuracy of our research questions and findings. It has also fostered community learning, and there was evidence of some of the LCCs wanting to 'own' and disseminate the research findings to their stakeholders.

For example, one LCC member reflected on the results of a survey of a local school where they had installed solar panels: *'what's interesting …is it did actually spark some people to …say they're going to change their behaviours'* (Group 6, Focus Group 3). Another LCC member considered how they could use the research findings: '*there's the opportunity when we've got the research and … validation of what we're*

doing to actually think about how to [influence government policy]' (Group 3, Focus Group 3).

AR has also enabled a more reflexive approach for researchers, who can consider how the context and engagement of specific research participants (for example in focus groups) might influence some of the data generated. LCCs have had the opportunity to comment on the fairness and accuracy of focus group, research event and final reports, and will be invited to comment on future research papers, policy briefings and articles, as a way of collaborating in the analysis and interpretation of findings.

Both the research events and the focus groups have offered opportunities to test methods of evaluation. This has enabled simultaneous learning about the LCC's activities, alongside learning about the efficacy of a variety of participative evaluation tools. These included timelines (shortened versions of learning histories); participatory and visual exercises to elicit the roles and responsibilities of the LCCs in relation to other local actors; and reflections about the community facing tool kit which the research project is developing (see EVALOC 2015).

Reflections from the second round of focus groups which specifically addressed the activities and development of the LCCs at a local level, suggest that they have been useful for the LCCs. For example, in response to feedback given about a shared learning event to explore the impact of installation of Solar PV on a local school, one participant mentioned that 'I *think there's a real use in doing this sort of thing actually. I think it's telling us a real message actually, a real story'* (Group 6, Focus Group 2), whilst one participant responded to the timeline of activities presented in FG2:

> '*It is nice to see [all our activities] in a simplified form because it … straightens out in your head … all the… [time that] networking and stuff... takes up' (Group 1, Focus Group 2).*

iii) Dealing with researcher 'positionality' and need for openness

Producing research that is useful for participants, helps inform further action and is academically rigorous, necessitates the researcher to juggle many roles (e.g. researcher, event organiser, colleague, critical friend) and skills (e.g. including

facilitation, and sometimes public relations with other participants). Different roles have required different responsibilities, and an awareness of the inherent biases that can occur. Whilst the role of researcher involves responsibility for quality, consistency and appropriate feedback of data, the role of facilitator requires combining the research needs of an event with consideration and flexibility to ensure that the research doesn't undermine the LCC's work or plans, and a knowledge of the community dynamics.

Where the 'researcher/researched' roles have been merged (for example through the organisation of events or shared learning workshops), it has produced AR of mutual benefit. For example, one group mentioned that as a result of some of the shared learning events, the group has learnt from other LCCs and this has meant: '*we've started working much more with the Affordable Warmth Network'* (Group 6, FG3). Another group appreciated that the researchers were: '*really willing to…do hands-on and muck in* [with events]' (Group 1, Focus group 3). One participant in a shared learning workshop subsequently organised a follow up strategy meeting with local organisations to carry forward some of findings: *'I'm very keen to ensure that positive outcomes arise from the [EVALOC report [of the workshop], and as such I have arranged a 'working group' meeting … to run through two main topics'*.

Nevertheless, we have faced challenges regarding how to usefully share research knowledge, survey data and timely analyses with the LCCs. For example some LCCs have requested short case studies of best practice, whilst others have requested workshops or discussions at community networking and support events. Both examples enable further reflection of the material, and can provide feedback on the relevance and accessibility of the findings, but also require time a time commitment on both sides.

Whilst close collaboration and good clear communication is necessary for AR, this may impede a more critical stance on the part of the researcher and/or reify the voice of the researcher above that of the community. If so, it is important to understand the implications of this for our research findings. For example, will positive or negative research reports help or impede a group's chance of receiving future funding? Will giving critical feedback increase the group's learning, disempower the group, or threaten the action research relationship? How could the information be interpreted by a critical media?

There are no easy, or 'right' answers to these questions, but raising them reinforces the need to adopt a reflexive and non-judgemental approach to discussing and sharing the emerging research with the LCCs, particularly when there is a need to share critical lessons and increase learning and reflection within the LCC sector as a whole (see for example Hargreaves 2011), and for government and funders to have realistic expectations of LCC action against a background of decreased funding and resources for community scale energy and carbon reduction. It also underlines the importance of the LCCs themselves having access to the final data for their own use: '*I think it's really important…for the communities to have … that data…because otherwise there's no way of knowing …what really is our impact'* (Group 6, Focus Group 3). Within EVALOC, we have approached this by using a self-rating system in the focus groups, corroborated by wider EVALOC research, which enabled LCCs to feel ownership of the assessment of their strengths and weaknesses; alongside ensuring that LCCs have the opportunity to comment on research findings.

In response to the view that it's inappropriate for researchers to direct the AR process, and to avoid the multiple roles being confused, the researcher agreed the terms of engagement with the LCCs at the initial contact stage. These included how knowledge would be shared within the EVALOC team and between participating LCCs, what roles researchers could play at community events and focus groups. These were discussed with the group to ensure that EVALOC's full research ambit was covered, and that it would be beneficial for the LCC.

iv) Power imbalances and other structural constraints

This leads us to consider the effect of the research process itself on the empowerment and/or disenfranchisement of our research constituents. Even when AR seeks to empower LCCs, structural constraints (such as changing government policy, and lack of funding to sustain the core roles of the LCCs) and power imbalances between researchers and LCCs, may act against this. Academic thematic priorities and short time frames for academic funding bids may prevent community participation in research design, whilst the lack of time and resources may prevent community participants engaging fully in the research, let alone in interpretation or writing of research findings.

For example, one LCC highlighted the tension of the time needed to participate in the research, as opposed to the need to do their project work when: '*we were so short of money ourselves'* (Group 2, Focus Group 3), which was echoed by another participant:

> '*I got the impression that the vast majority of people in academia are quite frustrated by the idea that there's loads of money for the research and not much [revenue] money for the actual [community] organisations'* (Group 2, Focus Group 3).

Additionally, there is a risk that researchers may assess the outcomes and impacts of voluntary groups with the same criteria applied to organisations with paid employees, thus missing different constraints or organisational processes. However, whilst longer timescales for research can sometimes impede immediate sharing of research findings with participants, the longer research timescale of EVALOC enabled us to more fully capture the wider impacts of LCC activities, as well as the changing relationships between the LCCs and the evolving socio-political context, which are generally beyond the timescales of most external project evaluations. This is of particular importance when considering the emancipatory claims, and limits, of AR.

The long timescale of EVALOC has enabled LCCs to reflect on the impact of changes to Government policies on LCCs' capabilities to deliver energy efficiency or renewable measures at a local level, as the following quotes illustrate:

> '[changes] *start to undermine people's confidence in dealing with some of these issues because if the government's dithering it makes people wonder whether it really matters or not'* (Group 3, Focus Group 3).

Another LCC noted that, regarding Government policy changes, *'it sometimes feels like you're in a ship at sea being blown from one port to the next'* (Group 4, Focus Group 2), whilst others noted that '*the Green Deal and Eco is such a disappointing wasted opportunity, it's really ... held back what we were hoping to be doing in our community on household energy reduction'* (Group 6, Focus Group 3).

With reference to Estacio and Marks (2010), whilst the wider socio-political and technical-economic context has hindered the aims of some groups (for example, through lack of funding for key workers), the EVALOC supported shared learning workshops between LCCs has enabled LCCs, in some instances, to better understand

and address socio-political constraints, for example through joint working with other organisations and LCCs.

Conclusions

In this paper, we have reflected on how application of AR methods has helped support and build capacity for LCCs to engage residents with energy and climate change issues and help enable behaviour change activities in this area. We recognise that the EVALOC project has been only one in a number of influencing factors on the activities of LCCs.

Nevertheless, the AR aspect of the research that took place over four years with the case study LCCs suggests that *strong relationships of trust, reciprocal benefits and negotiated mutual understandings* have emerged between the researchers and the majority of the LCCs. This helped to stimulate deeper questions about the effectiveness and impact of the LCC's activities, which have, in turn, been explored in shared learning events between the six LCCs.

A key finding of our study in this respect, is that the *inbuilt flexibility* and evolutionary nature of the AR approach has enabled us to add capacity to the ongoing activities of LCCs, e.g. through provision of additional funding support, and resources for planning, reflection and evaluation of community events. Sharing emergent findings with the research participants and their wider community networks has been helpful for improving the quality of the research, increasing learning about how change happens, testing assumptions and biases and aiding reflexivity of both LCCs and researchers.

This has helped the researchers to *collaboratively develop new resources*, such as community-facing briefing papers to help inform the change strategies of other LCCs and the generation of new evaluation resources, and strengthened the existing skills and capacities of both the researcher and community participants. However, in some cases collaboration proved more difficult and may even be seen as an additional burden for the already stretched capacity where the LCCs had little or no spare resource themselves to devote to the research.

Most importantly our research has identified that by *explicitly managing and negotiating the tensions between the researcher and the researched*, and between the 'action' and 'research' elements of the study, we ensured that one was not preferenced over the other. Indeed, the very praxis of this situation can reveal the richness of action research. In this way, it is possible to change the power dynamics between researchers and LCCs, and manage the acknowledged risks that doing action *and* research sometimes brings.

Furthermore, the EVALOC project came at a time when *funding and capacity for research* about the LCCs exceeded the financial support available to support their organisational activities. As such, the EVALOC AR programme was sometimes the only way available for LCCs to continue to deliver elements of the programme of behaviour change activities; for collecting and analysing their monitoring data; or communicating their successes to the wider community. It has also enabled an important process of inter-organisational exchanges between the LCCs, providing rich learnings about what works to stimulate behavioural changes and the process of change itself.

One of the wider aims of the EVALOC project has been to generate recommendations for government about changes needed to the policy framework. The research took place at the same time as policy consultations on issues that directly affect LCCs, such as the Community Energy Strategy (DECC 2014). Whilst LCCs could contribute to these consultations (and two LCCs participating in EVALOC did), in practice LCCs are rarely resourced to do so. Additionally, researchers may have a more *privileged access to policy makers* than some LCCs. We attempted to overcome these resource and power imbalances by compiling a response from key points arising from the research, and gave participating LCCs the opportunity to comment and input to the report (Gupta et al, 2013).

In sum, the EVALOC supported research events have in some instances helped to empower participating individuals and organisations, and in one case has catalysed improvements to local services. The AR component of the study has also helped to empower LCCs through helping to resource their needs. Nevertheless, engaging with actors beyond the local level, such as national government and the big energy companies, remains an ongoing challenge within the wider local energy change agenda. The ways to achieve this would be a fruitful avenue to explore in future

research, which should explicitly seek to involve both LCCs *and* national policy makers and other key national stakeholders in an interactive research process as part of the AR programme design.

Acknowledgements:

Notes

Note 1: Low Carbon Communities: The organisations in a geographical locality involved in promoting community level energy and carbon reduction. This term can cover a single Low Carbon Community Group (LCCG) or a partnership or multi-agency approach involving LCCGs, local authority, other statutory agencies and intermediary organisations.

References

Argyris, C., Schön, D.A., 1996. *Organizational Learning II: Theory, Methods and Practice*. Reading, MA: Addison Wesley.

Bradbury-Huang, H. 2010. What is good action research?:Why the resurgent interest? *Action Research*, 8:93-109.

Bradbury, S. and Middlemiss, L., 2014. The role of learning in sustainable communities of practice. *Local Environment***,** 1-15.

Brydon-Miller, M., Greenwood, D. and Maguire, P., 2003. Why action research? *Action Research,* 1 (1), 9-28.

Burchell, K., Rettie, R., Roberts, T., 2014. Working together to save energy? Report of the Smart Communities Project [online]. Kingston University: Behaviour and Practice Research Group. Available from: http://business.kingston.ac.uk/sites/all/themes/kingston_business/charmproject/smartcommunities.pdf [Accessed 12 July 2015].

Climate Change Act, 2008 [online]. Available from: http://www.legislation.gov.uk/ukpga/2008/27/contents [Accessed 10 February 2012].

Cameron, J., Gibson, K., and Hill, A., 2014. Cultivating hybrid collectives: research methods for enacting community food economies in Australia and the Philippines. *Local Environment*, 19:1, 118-132.

Catney, P., Dobson, A., Hall, S.M., Hards, S., MacGregor, S., Robinson, Z., Ormerod, M. and Ross, S., 2013. Community knowledge networks: an action-orientated approach to energy research. *Local Environment*, 18(4), 506-520.

Cornwall, A., 1996.Towards Participatory practice: Participatory rural appraisal and the Participatory process. *In* de Koning, K. and Martin, M. (Eds) *Participatory Research in Health: Issues and experiences* London: Zed Books.

Crane, A., Viswanathan, L. and Whitelaw, G., 2013. Sustainability through intervention: a case study of guerrilla gardening in Kingston, Ontario. *Local Environment,* 18(1), 71-90.

Charles, L., 2011. Animating community supported agriculture in North East England: Striving for a 'caring practice'. *Journal of Rural Studies*, 2 (4), 362-371.

DECC, 2013. Community Energy in the UK: A review of the evidence. Interim report [online]. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205218/Community_Energy_in_the_UK_review_of_the_evidence.pdf . [Accessed 2nd March 2015].

DECC, 2014. Community Energy Strategy [online]. Available from: https://www.gov.uk/government/publications/community-energy-strategy [Accessed 3rd November 2014].

DECC, 2015. Community Energy Strategy Update: Creating the conditions for long term growth. [online] Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/414446/CESU_FINAL.pdf. [Accessed 3rd November 2014].

Devine-Wright, P., 2007. Energy citizenship: psychological aspects of evolution in sustainable energy technologies. *In*: J. Murphy, ed. *Governing technology for sustainability*. London: Earthscan, 63–88.

Estacio, E.V., 2012. Playing with Fire and Getting Burned: The Case of the Naïve Action Researcher. *Journal of Community & Applied Social Psychology* 22: 439–451 DOI: 10.1002/casp.2106

Estacio, E.V. and Marks, D. F., 2010. 'Critical reflections on social injustice and Participatory action research: The case of the indigenous Ayta community in the Philippines'. *Procedia Social and Behavioral Sciences* 5: 548–552.

Eyre, N., Flanagan, B., Double, K., 2011. Engaging People in Saving Energy on a Large Scale: lessons from the Programmes of the Energy Saving Trust in the UK. *In* L. Whitmarsh, S. O'Neill and I. Lorenzoni (Eds) *Engaging the Public with Climate Change: Behaviour Change and Communication*. Ch. 8, pp 141-159. London: Earthscan.

EVALOC. 2015. ENACT – Energy And Communities Toolkit [online].Available from: http://www.evaloc.org.uk/#!howto/cvjp [Accessed 3rd March 2016].

Freire, P., 1970. Cultural Action and Conscientization. *Harvard Educational Review,* 40(3): 452-477.

Greenwood, D. J and M. Levin. 1998. *Introduction to Action research*. London. UK: SAGE.

Gupta, R et al. 2013 *Submission to the Department of Energy and Climate Change (DECC) on the Community Energy Call for Evidence* [Online]. EVALOC, Oxford. Available from : http://media.wix.com/ugd/caf2de_e1829d7358dcc3c942bac5a0415bf057.pdf [Accessed 3rd February 2015].

Gupta, R, Barnfield, L and Hipwood, T., 2014. Impacts of community-led energy retrofitting of owner-occupied dwellings. *Building Research & Information*, **42**(4), 446-61.

Gupta, R., Eyre, N., Darby, S., Lucas, K., Barnfield, L., Hamilton, J., Mayne, R., Gregg, M., Fratter, C., and Irving, B., 2015. *Evaluating the impacts, effectiveness and success of low carbon communities on localised energy behavours (EVALOC).* Final report. Oxford: Oxford Brookes University and University of Oxford.

Hargreaves, T. 2011. *What Lessons Get Shared? Case studies of community energy. Grassroots Innovations Research Briefing 9*[online]. University of East Anglia. Available from: https://grassrootsinnovations.files.wordpress.com/2012/04/gi-9-cise-3rd-party-case-studies.pdf . [Accessed 2nd March 2015].

Hobson, K., Hamilton, J. and Mayne, R., 2016. Monitoring and evaluation in UK low-carbon community groups: benefits, barriers and the politics of the local. *Local Environment* 21:1, 124-136.

Kemmis, S & McTaggart, R., 2005. Participatory Action research: communicative action and the public sphere. *In* N.K. Denzin and Y.S. Lincoln (eds) *The Sage Handbook of Qualitative Research* (3rd edition: pp.559-604). London: Sage.

Kemmis, S., 2010. What is to be done? The place of action research. *Educational Action Research*, Vol 18, 4:417-427.

Letcher, M., Redgrove, Z., Roberts, S., Longstaff, B., and Inverarity, A., 2007. Mobilising individual behaviour change through community initiatives: lessons for climate change [online]. Final Report of study for DEFRA, CLG, HM Treasury, DTI & DfT. DEFRA, London. Available from: https://www.cse.org.uk/downloads/reports-and-publications/community-energy/behaviour-change/mobilising-individual-behavioural-change-through-community-summary.pdf . [Accessed 2 March 2015].

Marshall, J. 2001. Self-reflective Inquiry Practices. *In* P.R. Reason and H. Bradbury (Eds) *Handbook of Action Research*. London: SAGE, Ch 44, pp 433 – 439.

Mayne, R., Hobson, K., Hamilton, J. 2013. *A step by step guide to Monitoring and Evaluation.* [Online] Oxford, School of Geography and the Environment. Available from http://media.wix.com/ugd/caf2de_d4250b926cca4d6fb7daca707671c214.pdf .

Platteel, T., Hulshof, H., Ponte, P., van Driel, J., Verloop, N., 2010. Forming a collaborative action research partnership. *Educational Action Research.* Vol 18 (4) 429-451.

Reason, P., Coleman, G., Ballard, D., Williams, M., Gearty, M., Bond, C., Seeley, C., McLachlan, E., 2009. *Insider voices: Human Dimensions of low carbon technology.* Bath: University of Bath.

Reason, P., and Bradbury, H., 2001. *The Handbook of Action Research: Participative inquiry and practice.* London: Sage Publications.

Rogers, J.C., Simmons, E., Convery, I., Weatherall, A. 2012. Social impacts of community renewable energy projects: findings from a woodfuel case study. *Energy Policy*. Vol 42: 239-247.

Seyfang, G. and Smith A., 2007. Grassroots innovations for sustainable development: Towards a new research and policy agenda'. *Environmental Politics* 16: 4: 584-603

Seyfang, G., Park, J.J., Smith, A., 2013. A thousand flowers blooming? An examination of community energy in the UK. *Energy Policy* 61, 977-989.

Smith, L., Bratini, L., Chambers, D., Jensen, R., Romero, L., 2010. Between idealism and reality: Meeting the challenges of participatory action research. *Action Research.* Vol 8: 4: 407-425.

Stoecker, R., 2009. Are we talking the walk of community-based research? *Action Research* 7 (4): 385-404.

Todhunter, C., 2001. Undertaking Action Research: Negotiating the Road Ahead. *Social Research Update* [online]. Guildford: University of Surrey. Available from: http://sru.soc.surrey.ac.uk/SRU34.html. [Accessed 3rd March 2014].

Unsworth, R., Ball, S., Bauman, I., Chatterton, P., Goldring, A., Hill, K., Julier, G., 2011. Building resilience and well-being in the Margins within the City: Changing perceptions, making connections, realising potential, plugging resources leaks. *City: analysis of urban trends, culture, theory, policy, action.* Vol 15:2:181-203.

Whitelaw, S., Beattie, A., Balogh, R., Watson, J. 2003. A Review of the Nature of Action Research [online]. Sustainable Health Action Research Programme, Welsh Assembly Government. Available from: https://www.academia.edu/1357382/A_Review_of_the_Nature_of_Action_Research . [Accessed 15 July 2015].

Appendix 1: Table 2. Full list of Community Events (see also Gupta et al, 2015: 112-114)

Building capacity for action research

Figure 1.

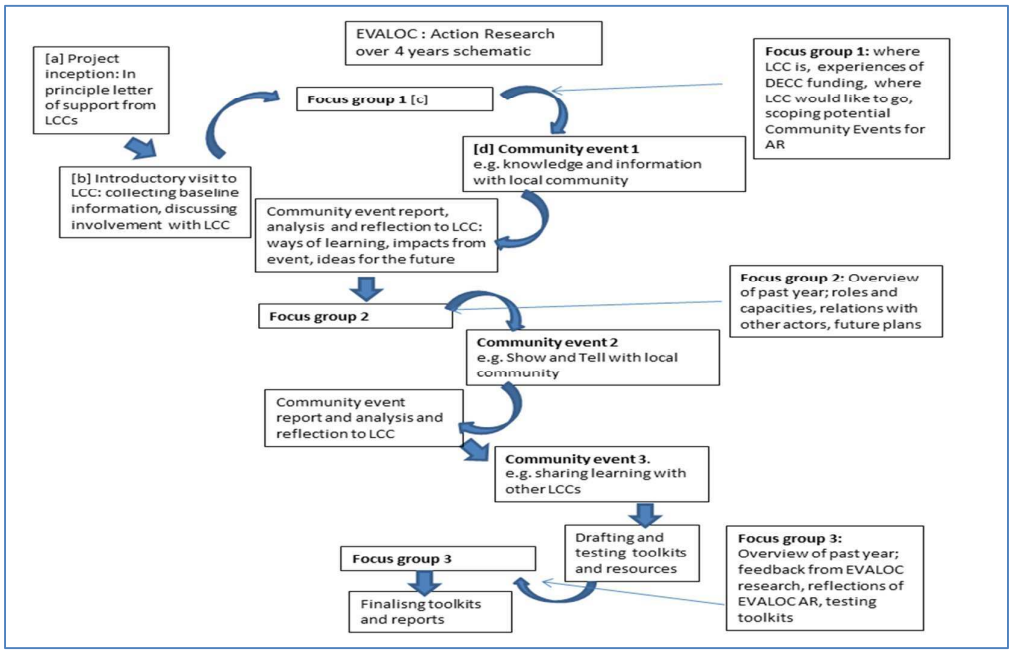
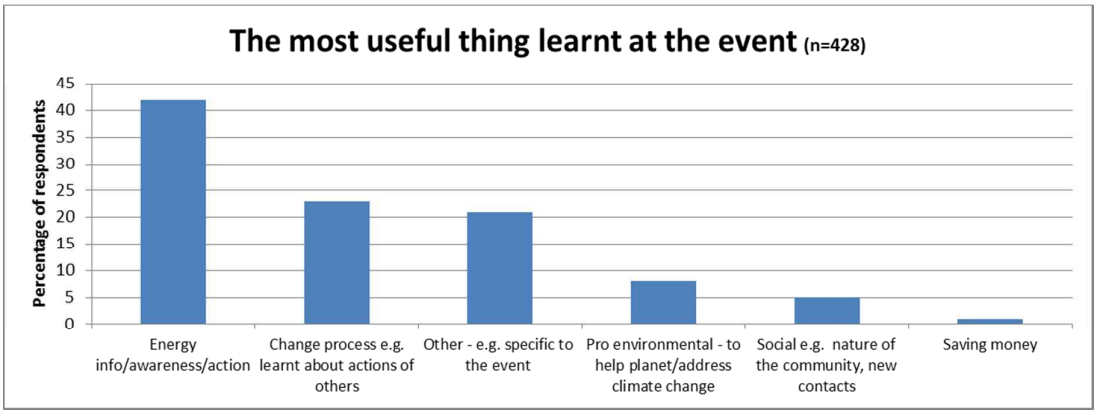


Figure 2.


The most useful thing learnt at the event (n=428)
Percentage of respondents
45
40
35
30
25
20
15
10
5
0
Energy info/awareness/action
Change process e.g. learnt about actions of others
Other - e.g. specific to the event
Pro environmental - to help planet/address climate change
Social e.g. nature of the community, new contacts
Saving money

Building capacity through action research

Table 1

Community, location and socio-economic status.	**LCC activities funded by DECC**	**LCC governance model**
1. Rural South Wales. Disadvantaged.	Organised a series of arts and climate change workshops, and are finalising the installation of two 2MW wind turbines.	Community led social enterprise and charity.
2. Urban, North West England. Disadvantaged.	Trialled a variety of energy management systems, delivered energy efficiency savings to 150 homes, and retrofitted two show homes.	Community led social enterprise linked to community development trust.
3. Urban, North East England. Disadvantaged.	Installed two wind turbines in primary schools, heat pumps and solar electric panels in community buildings and 20 private homes, and have started an electric car club.	Partnership between a Local Authority, town-wide not for profit, and community partnership.
4. Rural, South East England. Affluent, with pockets of deprivation.	Installed solar PV and solar thermal panels on the local school, provided loans to enable whole house retrofits, insulation and solar measures, and initiated a community car club.	Community led charity and social enterprise.
5. Urban, North East England. Disadvantaged.	Installed solar electric panels on three community centres, and 54 homes	Local Authority led multi agency approach.
6. Urban, South East England. Middle income, with pockets of deprivation.	Installed solar electric panels on a school, church, supermarket, and social housing, a small wind turbine in a nature park, and have plans to install micro hydro on a weir of local river.	Community led charity and social enterprise.

Building capacity for action research.

Table 2.

Name and number and type of event	Community	Description	Number of Participants	Process	Method / materials	Data collection method	Data collected
1a. 'We're oil in this together' Type: Knowledge building	1	Theatre performances, community choir, story telling and art, plus display by group in the foyer.	135 in total. Approximately 70 audience, 65 participants.	LCC led and planned, involving script writers, actors, artist, members of community choir, youth theatre and workshop participants	Mainly performance, copies of the art prints, brief information about the LCC at the stall.	Questionnaires, Participant observation, photographs, reflection in a focus group post event.	44 Feedback forms, observations from event, audio recordings, photographs.
1b. Follow up questionnaire from DECC activities	1	Questionnaire to capture the experiences of involvement in DECC funded engagement	44 responses	LCC led activities, questionnaire combined with LCC mailout.	Questionnaire	Questionnaire posted to 240 of the participants in arts and climate change engagement events.	44 Feedback forms
2. Fuel poverty event Type: Show and tell	5.	Informal event about fuel poverty and energy for local residents.	45 local community members attending.	LCC led, involving EVALOC for energy information.	Informal stalls, energy quiz.	Questionnaire to Participants, Participant observation.	Feedback forms, observation notes.

3. Community and Local Authority Partnerships for Local Energy reduction Type: Shared learning, knowledge building.	3, 5, 6	Workshop	45 in total , consisting of LCCs, Local Authorities, Low Carbon Communities Network.	EVALOC led from idea from LCC 6.	Presentations and small group discussions, copies of slides and hand outs.	Questionnaire to event Participants, Participant observation, slides, photographs, notes from the discussions.	21 feedback forms plus notes from event.
4. Feedback event from energy management project Type: Show and tell.	2.	Feedback talk and interactive workshop.	40 in total, consisting of LCC core group, programme participants and Universities.	LCC led	Presentations from evaluators, small group work and discussion to develop energy messages.	No feedback forms (administratively difficult due to staff changes), observations from the evening.	Observations and write up from the evening.
5. School play Type: Show and tell.	3.	One school produced and performed a play involving pupils.	25 audience LCC, school, EVALOC.	LCC led with local school, prompted by EVALOC.	Performance.	Observation on the evening, questionnaire from audience and participants.	22 feedback forms.
6.Solar PV learning day at local school Type: Show and tell	6.	Learning and reflection convened at secondary school which had Solar PVs installed as part of the LCCC.	18 LCC members, school staff and pupils, Local Authority, school energy service providers, another LCC.	EVALOC led from LCC idea.	Short 2presentation, facilitated small group work with flip charts, discussion and reflection.	Questionnaires at the event, observations, audio recording, and flip charts.	10 feedback forms, write up from flip charts and discussion at the workshop.

7. Facilitated board meeting Type: Shared learning	4.	Discussion about next directions for the group.	10 LCC board members.	LCC led.	Facilitated discussion.	Reflections after the event from board members.	
8. Shared learning for community loan scheme Type: Shared learning.	4.	Discussion and presentations between LCCs.	10 LCC, plus representatives from neighbouring LCCs.	LCC led.	Short presentations.	Feedback forms, observation form, a few photos.	9 Feedback forms.
9. Feedback and reflection on Eco-homes	2.	Workshop and discussion from LCC volunteers involved in demonstration eco-homes.	10 volunteers LCC coordinator , plus survey of visitors.	EVALOC led with LCC.	Discussion and reflection at eco-home, going through visitor information.	Participant observation at workshop, notes from discussion.	13 feedback forms from online survey of visitors.
10. Carbon reduction in communities of disadvantage Type: Shared learning, knowledge building.	2, 3, 5, 6		LCC core members and volunteers, both community and Local Authority.	EVALOC led from LCC stimulus.	Discussion and reflection.	Participant observation, questionnaire.	5 feedback forms.
11. Creativity and climate change. Type: Shared learning	1, 2, 3, 6	Two day workshop on using creative methods in low carbon communities.	28, 20 from EVALOC LCCs, 10 from artists and LCCs in Manchester.	EVALOC led with stimulus from LCCs.	Workshops, presentation, small group discussions, practical exercises.	Participant observation, questionnaire, write up notes from presentations and emerging creative material.	19 feedback forms.
12a and 12b. 'Green Routines' exhibitions	1.	12 a) Interactive exhibition installed in National Trust in	450 visitors to exhibition, 282 Participants in AAT's survey	LCC led .	Completion of initial survey, information – visual and aural at	Participant observation at exhibition, questionnaire for	163 in total: 146 feedback forms from 12a, plus 19 feedback from 12b.

Type: Knowledge building.		May 2013, and b) in Welsh Assembly Govt in Feb 2014.	Participants in survey for the content.		exhibition.	visitors.	
13. Eco gala day Type: Show and tell, knowledge building.	2.	Gala day	Around 1,000 local residents.			Feedback form, observations, photos from the day.	35 feedback forms.
14. Fuel poverty in higher income areas Type: Shared learning.	6.	Workshop for LCCs, LA, and energy agencies in Oxfordshire.	14 Participants LCC members, Local Authority.	LCC led	Background information on Fuel poverty schemes, short presentation, small group discussions.	Participant observation, feedback forms, transcriptions, write up from notes.	9 feedback forms.
15. Shared learning visit to Westmill Windfarm Type: Shared learning.	4.	Community event for members of the LCC.	10 Participants.	LCC led.	Discussions and reflection.	Feedback forms and report from organizer.	9 feedback forms.
16a and b – Fuel poverty community event and follow up campaign Type: Knowledge building.	5.	Community event for local residents.	150 Participants from LCC, Local authority, local residents.	LCC led.	Informal discussion at stalls.	Participant observation, feedback forms.	24 feedback forms.
17. School play # 2 Type: Knowledge building.	2.	School play in another primary in LCC location.	55 Participants.	LCC led.			32 feedback forms.