



SUMMARY OF KEY FINDINGS & RECOMMENDATIONS:

ECO EASTERSIDE

COMMUNITY SUMMARY C3 - KF

SEPTEMBER 2015



1. Introduction

- This summary shares the findings from the EVALOC research project about Eco Easterside's energy and carbon reduction projects. EVALOC was carried out between 2010 and 2014 to assess and explain changes in energy use in six low carbon communities (LCCs) in England and Wales. A more detailed report has been provided to the Eco Easterside team.

- Eco Easterside is an award-winning local partnership in a disadvantaged estate on the edge of Middlesbrough that aims to reduce local carbon emissions and to promote sustainable and healthy living. In 2010 it won a £400,000 capital grant from the Department of Energy and Climate Change (DECC) as part of the Low Carbon Community Challenge (LCCC) to undertake specific energy-related activities.

- The evaluation found Eco Easterside to be a relevant, accessible, and highly effective and inspiring initiative. The lessons from Eco Easterside are highly relevant to other disadvantaged communities, although not all the projects are replicable.

2. Roles and Capabilities

- Eco Easterside is a highly effective partnership between a

town wide charity, Middlesbrough Environment City (MEC), the local authority and other statutory agencies, and local residents that works within Easterside and across Middlesbrough. Its particular strengths are its ability to engage local residents, organise the installation of renewables and energy efficiency measures in their homes, and help address fuel poverty, which can be seen in the high levels of uptake of renewable and energy efficiency measures. The team felt less sure about their ability to empower people, to change energy related behaviours or develop innovative approaches to reducing energy use.

3. Strategy Design

- Eco Easterside has a motivating and credible vision which balances environmental, social and practical aspirations, and is tailored to local people. It also has a well designed change strategy tailored to local needs which help residents overcome some of the many technical, economic and social influences which constrain them from reducing energy use.

- *At downstream level (with residents):*

- Eco Easterside's communication messages, engagement methods and projects are all highly relevant and accessible to residents;
- Its household energy reduction projects address some

of the key economic, technical and social barriers to domestic carbon reduction;

Complementary community level events and projects raise awareness, and promote more sustainable, healthy living.

- At *midstream level* (with local agencies), Eco Easterside has been involved in successful partnership working, which:

- Enables resident engagement and the effective neighbourhood and town wide delivery and installation of household energy efficiency measures to people's homes;
- Provides residents with joined up local services on related issues such as addressing fuel poverty, accessing welfare benefits and assisting people with debt payments;
- Enables scaling up and replication of activities.

- The Eco Easterside has also shared its learning from the project with other communities across the UK.

- At *upstream level* (with government or national interest groups):

- Members of the core team engage in dialogue with government to inform policy, but the partnership does not engage in public campaigning nor has it sought to involve residents in influencing policy.

4. Learning

- Research highlights the importance of learning processes to learn about what approaches do and don't work, test the change assumptions underpinning change interventions, and to inform the design of future change strategy. Eco Easterside has participated in a number of external evaluations and is beginning to design and implement its own internal system.

5. Effectiveness and impacts

Overall, Eco Easterside has successfully designed, managed and implemented complex energy projects at community and household level.

Engagement

- It has succeeded in engaging a large number of residents on the estate; 30-33% of whom are on low incomes:

- 1,328 households through newsletters, leafleting and door-knocking and presence at other events;
- 1,000+ residents participating in bespoke community events;
- 20 households benefitting from low-zero carbon technologies (LZTs) and 469 households with insulation measures;
- Community renewable projects has increased

awareness among pupils, families and residents;

- Several hundred households participating in complementary energy, transport and food projects.
- Most of the residents interviewed were motivated to reduce energy use and carbon emissions, and a significant number appear motivated by both concerns about climate change and practical benefits.

Renewable energy generation

- The community solar PV system installed on the Easterside Community Hub and two wind turbines installed at the two local primary schools have saved 28 tonnes of CO₂e since their installation in 2011. (Figures not available for air source heat pump system on local cafe).

- The solar PV systems installed on 10 local households have saved an estimated 34 tonnes of CO₂e since their installation in 2011. (Figures not available for air source heat pump and solar thermal systems).

- There are also signs of possible 'ripple' effects; for example, 20 additional domestic solar PV installations have been registered on the Department of Energy and Climate Change's (DECC's) national FiT register from the wider local area, following the installation of the 10 installed by Eco Easterside.

Household energy use and carbon emissions

- Data from the wider local area over a five year period (2008-2012) indicate the average household in Easterside and the surrounding area has reduced its carbon emissions (from gas and electricity use) by 12% from 2008 to 2012 (in line with the UK's national average). This is despite annual average household baseline (2008) gas and electricity use in the wider Easterside community being lower than the national average (15,407kWh in gas and 3,368kWh in electricity compared to national mean average of 16,906kWh in gas and 4,198kWh in electricity); which can reduce the potential for further reductions.

- There have been greater percentage reductions in annual average household metered electricity use than gas use across the wider community (using subnational lower super output area energy data figures) over the 5 year period in relation to national averages; suggesting the relative effectiveness of Eco Easterside's activities focused on electricity generation (electricity: 6% reduction in relation to 4% national reduction; gas: 15% vs. 17% nationally) and also potential for further reductions in household gas use.

- Carbon mapping of 242 households before and after LCC activities in 2010 also indicates reductions in energy use in both households that directly benefitted from LCC activities and those that did not.

- Carbon mapping indicates that further savings of up to 60% (on 2012 estimates) per dwelling could be made through packages of physical measures.

- Eco Easterside's activities also appear to have had positive

impacts in terms of the 12 EVALOC case study households' energy use benefitting from LCC interventions:

- Long term annual gas and electricity meter data (2008-2012) of the case study households show overall reductions with nine out of the 12 households involved in Eco Easterside activities (either physical, behavioural or combination) reducing either or both gas and electricity use.
 - 10 out of the 12 households involved in Eco Easterside activities stating that they felt Eco Easterside had helped them reduce their energy use.
- Energy display monitors have increased awareness and led to some reported changes in electricity use in the case study households. However, this is not marked enough to show up in the consumption data as significant – not surprising, given the number of variables involved, and the small sample.

Performance of physical interventions in case study households

- Overall performance of solar PVs is good, with four out of the five systems monitored generating more than predicted annually, two years after installation.
- Whilst thermal imaging shows that there are issues with retrofitted cavity wall insulation, particularly around and under windows and infill panels, generally occupants reported high levels of comfort and there were no reports of increased condensation or mould, or issues with the physical integrity of the dwelling as a whole, following fabric improvements.

Occupant energy behaviours in case study households

- Most occupants exhibited high levels of energy-saving awareness, and reported a range of energy-saving behaviours, although some felt that lack of technical knowledge was constraining them from reducing their energy use and from discussing energy improvements with others.
- There have been some positive changes in habitual energy-related behaviours following LCC activities, including better insulation, which has meant that thermostat settings have been turned down in some households.
- However, there has been evidence of a 'rebound effect' in reported increased use of appliances due to availability of 'free' electricity offered by solar PVs. The 'rebound effect' is the idea that the installation of energy efficiency technologies can lead to increased energy use due to negative changes in behaviours.

Social and economic impacts

- The community and household renewable installations have generated an income stream that is being held by the local

not-for-profit community association, for use initially towards maintenance and then for additional environmental initiatives in the community.

- There were self-reported financial savings on electricity bills in four out of the five case study households with solar PV installed.
- There was qualitative evidence of warmer and more comfortable homes, linked to the physical interventions in some case study households.
- There was self reported evidence of increased cycling rate across Middlesbrough as a whole linked to Middlesbrough Environment City's (MEC's) cycling training and maintenance courses, dedicated cycle path and incentivised bike schemes for schools; cycling journeys in Middlesbrough rose from 150,000 in 2010 to 350,000 in 2014.
- Increased levels of resident engagement in energy-related community activities (e.g the Eco Gala).
- Self reported anecdotal evidence of an increased sense of community pride reflected in the reduced graffiti and crime rate since project began.

6. Sustainability, Scalability and Replicability

Financial sustainability

- Eco Easterside has been successful in securing both capital funding for physical measures and revenue funding. It has sought to supplement grant funding with income generated by community renewable projects. However, the net income from the Feed-in-Tariff (FiTs) is smaller than anticipated after provision for maintenance, so the partnership will continue to rely on grants to pay staff and reinvest in future projects.
- The DECC capital funding did not provide an ongoing budget line for project management, or for related behavioural- or capacity-building projects, even though the renewable installations involve time-consuming administration and follow-up over a 25-year period.

Scalability

- The partnership approach and success in securing funding has enabled projects to be implemented at scale within Easterside and in other areas of Middlesbrough. However, as in other LCCs, Eco Easterside projects face a range of external structural influences that constrain the scale, pace and reach of change.
- At upstream level in relation to government these included: inconsistent government leadership, mixed messages about tackling climate change, reduced interest in changing attitudes & partnership working, lack of revenue funding for project management, financial cuts, short time frames and lack of budget for capacity building for government grants, and administrative delays on the Feed-in Tariffs (FiTs).
- The partnership faced less external constraints at midstream and downstream level due to effective partnership working, although low aspirations and the invisibility of energy use were mentioned

as constraints.

Replicability

- Eco Easterside's change strategy and projects are highly relevant to other communities, and there is much that other LCCs have, and could, learn from them. However, the replicability of other LCCs undertaking renewable generation projects may be limited because of EU state aid rules which now prevent communities from receiving both capital grants and the FiTs, the possible future reductions to the FiTs, and the absence of low-cost loans.

- Wealthier communities can raise capital through share offers, but this possibility needs to be tested in poorer communities. Conversely, it may be difficult for low carbon communities in non deprived areas to attract capital grants for energy efficiency and renewable measures funded under the Energy Company Obligation (ECO) to benefit the pockets of low income and fuel poor households in their areas.

7. Recommendations

- The following recommendations are contingent on financial and human resources being available.

Engagement and involvement

- Provide opportunities for new resident volunteers to get involved in community engagement and project delivery activities in a more structured way.

- Work with the Energy Champions to design a programme of structured outreach to engage other residents, and provide additional training if needed.

- Inform residents about project outputs and outcomes (see below), and if appropriate provide information about climate change impacts and actions by other local, national and international actors.

- Provision of low-cost practical remedies including radiator reflector panels and draughtproofing to help minimise heat loss through the building fabric and engage residents.

Behavioural advice and provision of feedback

- Strengthen technical and behavioural advice and support to residents through:

- Individual tailored advice to residents benefitting from energy efficiency or renewable measures from trained advisers or energy champions, using EDMs as a tool to manage energy and learn about it.
- Targeted information to residents about energy efficient appliances as well as training on accessing low energy appliances and possibly funding them e.g. low interest loans through the credit union.
- Regular advice surgeries at community hub from MEC

staff or energy champions.

- Group- action learning groups by using or adapting the approaches used by Sustainable Blacon, Carbon Conversations, Low Carbon Living Programme, or Transition Streets.
- Community-wide awareness programme relating to heating including thermal imaging survey and workshop.
- Further knowledge and awareness workshops/training relating to use of LZTs (particularly solar PV).

Delivery and installation of fabric and technical measures

- Ensure seasonal commissioning procedures are in place to ensure LZTs are working properly.

- Use quick diagnostic tools such as thermal imaging immediately after installation of insulation and draught-proofing, to ensure works have been completed to a satisfactory level.

- Support the provision of concise, easy-to-understand user guides (in variety of formats) on 'unfamiliar' technologies for ease of use, operation and maintenance requirements.

Monitoring and evaluation of activities

- Maintain a dedicated monitoring programme for LZTs and efficiency measures to:

- Monitor performance;
 - Uncover issues/faults as early as possible;
 - Provide feedback to occupants and other stakeholders.
- Set up a programme of annual thermal imaging surveys across the community to provide diagnostics on retrofitted cavity wall insulation (can be linked to engagement and provision of feedback programmes).
- Design and implement a simple and participatory monitoring and learning system to capture information about selected carbon, financial, social and economic outcomes and impacts, and communicate these to residents and other stakeholders.



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Community partners:

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The EVALOC project seeks to assess, explain and communicate the changes in energy use due to community activities within six selected case study projects under the Department of



EVALOC is a four-year multi-disciplinary project worth £1.14 million funded by the UK Research Council's (RCUK) Energy Programme. The Energy Programme is a RCUK cross council initiative supported by EPSRC, ESRC, NERC, BBSRC and STFC.

