

# **(EC)<sup>2</sup>**

**Edinburgh Community Energy Co-operative**



## **Climate Challenge Fund Award**

### **Final Report**

## **Edinburgh Community Energy Co-operative Renewable Energy Development and Financing Project**

**March 2012**

This report summarises the approach and outcomes from the delivery of the Edinburgh Community Energy Co-op Project delivered in the Leith area Edinburgh in 2011-12. The project was supported and funded by the Scottish Government's Climate Challenge Fund.

## Contents

<b>1. Starting Point</b>	<b>Page 2 - 3</b>
<b>2. Headline Achievements</b>	<b>Page 4</b>
<b>3. Outputs</b>	<b>Page 5 - 11</b>
<b>4. Outcomes</b>	<b>Page 12- 15</b>
<b>5. Learning and reflection</b>	<b>Page 16 - 17</b>
<b>6. Finance and administration</b>	<b>Page 18 - 19</b>
<b>7. Supporting information</b>	<b>Page 19</b>
<b>8. About this report</b>	<b>Page 21</b>

## Glossary

Advice Centre	Short for Energy Saving Scotland Advice Centre
CCF	Climate Challenge Fund
Changeworks	Edinburgh Based Environment Charity and Project Partner
EST	Energy Saving Trust
ECEC	Edinburgh Community Energy Co-operative
Greener Leith	Local Environment Organisation and Project Partner
FIT	Feed in Tariff
Neighbourhood Partnership	City of Edinburgh Council Local Support Organisation
kWp	Kilowatt Peak (capacity of solar panels)
Podcast	Web based recording for download
PV	Photo Voltaic

## **Starting Point**

### **Introduction**

Edinburgh Community Energy Co-operative (ECEC) was set up in 2007 to give Edinburgh residents a vehicle to promote and develop renewable and low-carbon energy in the city. It is a non-profit, member owned organisation.

This project aimed to establish community-owned renewable energy schemes in Leith as part of a wider carbon saving project. The intention was to install renewable energy systems onto 6 community buildings in Leith and develop a community-owned finance scheme to fund the project. The financial model was expected to attract capital for the project and generate an income for the community through for example, the Feed-in Tariff (Feed in Tariffs) and could be replicated elsewhere. To maximise carbon savings the project aimed to use the solar installations as a visual focus for prompting other residents to take action to reduce their carbon foot prints. To achieve this wider aim the project sought to engage the Leith community more widely and

encourage households to install energy efficiency measures, through an insulation campaign.

Proposed project activities were:

- Survey of community buildings in Leith to identify:
  - Potential for energy efficiency improvements;
  - suitable sites for solar (or possibly other renewable) installations;
- Identifying finance for several projects which can benefit the community and develop a business case based on co-operative models;
- Carry out a survey of Leith residents to identify their needs and opportunities to stimulate behavioural change;
- Promote insulation deal in Leith in conjunction with the local Energy Saving Scotland Advice Centre.

Ultimately the project aimed to reduce carbon emissions, generate income for the community and help tackle fuel poverty.

The direction of the project changed considerably in late 2011, due to the government's decision to reduce feed in tariff rates and consult on further cuts. This meant the prospects for identifying community finance mechanisms were very slim. The uncertainty also meant there were a number of delays in engaging community buildings.

### **Feed in Tariffs review**

Feed-in Tariffs were introduced in April 2010 to provide a payment for each unit of electricity produced from microgeneration. When introduced, the tariffs were expected to reduce in April 2012 and then reduce annually at a gradual rate.

In March – May 2011, the government held a consultation on the 'fast-track review of Feed in Tariffs on stand-alone solar PV and farm-scale anaerobic digestion. This led to the reduction in tariffs for these projects from August 2011. It also meant that larger installations on community buildings would be challenging. Worse still uncertainty remained over the long-term prospects for the scheme, which meant it was difficult to positively engage community building owners.

In October 2011, the government launched a second consultation on the Feed in Tariff level for solar PV, due to a concern in the high uptake rate which was reducing the amount of Feed in Tariffs income available. They proposed halving the Feed in Tariffs rate from mid-December 2011, instead of altering them in April 2012, as originally planned.

The effect of the consultation was considerable. Many organisations, individuals and community groups rushed to complete projects before the 12<sup>th</sup> December deadline, or abandoned projects. This was further exacerbated for community groups and for social housing providers as the introduction of a multi-installation tariff (groups of properties) meant that larger projects would only receive 80% of the Feed in Tariff Rate. The returns from projects were greatly reduced, making community wide schemes unviable and securing finance very challenging. This was particularly issue for community-based schemes looking to secure finance as only self-funded (from reserves) or interest free loans would make schemes viable. Reasonably low costs were also needed to make projects stack up, which ruled out more complicated projects.

The government has now announced the new tariff will apply from installations with "a commencement date of 3<sup>rd</sup> March or later. A new tariff will be introduced in July 2012, and again in October 2012. The government is proposing to reduce the tariff every six months, based on deployment rates before this. These changes further reduce the potential for community based funding models.

This has had the following impacts on the project;

- Delayed and undermined engagement with community buildings;

- Meant there was no prospect of community fundraising;
- Meant that a PV installation couldn't occur in the project lifespan undermining the wider efforts to use visible solar panels to promote insulation measures.

### **Project revisions**

In response, a new plan was prepared by the project co-ordinators in late October this was approved by the board in November with final agreement from the Climate Challenge Fund secured in early December.

This comprised:

Enhanced marketing activities to promote the insulation offer, including the use of social media;  
Stakeholder engagement focused on community buildings, including promotion of energy audits and training;  
Promoting electricity energy smart meters via local libraries.

This work was delivered from early January to early March 2012

### **Headline achievements**

- Held three events focused on energy-efficiency and community owned renewables, each attended by around 20- 30 people
- Promoted loft and cavity wall insulation offer in Leith resulting in 4272.59 lifetime tonnes of saved
- £256,660 of financial savings for the lifetime of these measures
- 6 community buildings had energy audits through the Energy Saving Scotland Advice Centre and. With potential carbon savings of 886.3 tonnes
- Solar feasibility studies were carried out on 5 of these properties with one potential 10kWp project identified for future development. A further organisation that we worked with independently sought a quote for an installation.
- Carried out energy efficiency training with user/staff groups at 3 community buildings
- Promoted the energy monitor loan scheme through Leith libraries
- Worked with other community groups to develop interest in community owned energy

## Outputs

This section is split into five main aspects of the project:

1. Community buildings;
2. Household insulation offer;
3. Public events;
4. Energy monitor promotion;
5. Publicity;

### 1. Community buildings

Looking at the potential for solar PV on community buildings was the starting point for this project, since this was the proposed route in which to set-up a community-based renewables scheme. A list of 38 community buildings in Leith was drawn up early in the project and a brief walk-around of buildings to determine basic suitability for solar panels. Those buildings with suitable roofs were contacted to gauge interest and visits by renewable installers to assess feasibility were undertaken at Norton Park and Out of the Blue. Other buildings were referred to the Energy Saving Scotland Advice Centre for a free business energy audit.

The government announced a consultation of Feed in Tariffs rates in October 2011; this changed the direction of the project as solar PV projects, and in particular community-financed schemes, became financially unviable. This significantly changed the route of this project, making the community-based renewables scheme very unlikely. After to this change focus away from solar installs for community buildings effort was redirected towards energy efficiency. This involved a new focus on:

1. Promoting energy audits;
2. Supplementary advice and visits to persuade groups to take forward audit measures;
3. Workshops with staff/users of the buildings on energy awareness were also offered.

Considerable effort was made to engage buildings across the area, This included:

- Introductory emails and letters sent in December 2012;
- Reminder email and telephone calls sent in January 2012;
- A further mail out in mid-January promoting the availability of free staff workshops and audits (see appendix);
- Contact made with the three eco-congregations in area;
- Promotion through mailing list of the neighbourhood partnership.

As a result of the above contact with community buildings, the following activity was carried out.

#### a) PV audits

A desktop solar PV audit was carried out on the following buildings:

- Out of the Blue (additional information provided by On Site Generation);
- Pilmeny Youth Centre;
- Citadel Youth Centre;
- South Leith Parish Church Halls;
- Norton Park (additional information provided by On Site Generation).

In each case the buildings were also visited and meetings were set up with installers to discuss technical issues related to South Leith Parish Church Hall, Norton Park and Out of the Blue drill hall.

The PV report (attached to this report) found that all the buildings had some potential for PV.

South Leith Parish Church Halls and Citadel Youth Centre showed the most financially viable schemes. Actual quotes for installation were obtained for the South Leith Parish Halls and these were used for producing a business case for each of the buildings.

The table shows the estimated cost and benefits Feed in Tariff of installing solar PV onto the community building roofs (assuming Feed in Tariffs rate between July and October 2012, based on the best assumption under the government's most recent consultation).

Building	Size of PV	Installation cost	CO2 saving (lifetime)	Payback period if self-funded or 0% interest free loan	Payback period if 8.5% loan	Internal rate of return (IRR) on investment
Norton Park	40kW	£140,000	409 t	18 years	25 years	5.2%
Out of the Blue	4kW	£15,500	41 t	15 years	20 years	10%
South Leith Parish Church Halls	10kW	£17,500	103 t	9 years	13 years	37.7%
Pilmey Youth Centre	7kW	£19,000	61 t	16 years	22 years	8.5%
Citadel Youth Centre	6kW	£16,500	62 t	14 years	19 years	11.8%

Realistically only South Leith Parish Church halls install is only likely to proceed because the interest free loan term is eight years and hence costs and income will be similar in the early years - where as others will be in deficit until loans are paid off.

Whilst South Leith Parish Church committee are interested in proceeding with solar PV the project must overcome a number of challenges identified by the Energy Co-operative these include: strengthening works to the roof, panel security issues applying for planning within a conservation area and decreasing Feed in Tariff rates after July. However The Energy Co-operative hopes to work with the Church to progress this work as a legacy of the project.

## b) Energy audits

Energy efficiency was considered an important aspect to promote to community buildings, regardless of whether they were looking into solar PV. Community buildings were therefore approached about free energy audits and referred to the Energy Saving Scotland Advice Centre where interested. Energy audits were carried out in the following buildings as a result of this project:

- Pilmey Youth Centre
- Multi-cultural Family Base
- Albion Trust
- Norton Park
- St James' Episcopal church
- Citadel Youth centre
- Stafford centre (referred for audit late March; audit not yet undertaken)

These reports make a number of recommendations such as staff training, loft insulation, replacing lighting and new heating controls.

Further water efficiency advice was given by the Energy Saving Advice Centre to the Pilmey Youth Centre who expressed concern about their large water bills.

A number of buildings we were in touch with had previously received Energy Saving Trust audits or were in the process of getting an audit done: Destiny Church, Bethany Christian Trust, Hindu Cultural Centre, Out of the Blue, Pilrig St Paul's Church, and South Leith Parish Church Halls. We however, revisited the South Leith Parish Church Halls to provide further advice and also organised a contractor to quote for loft insulation. The multi-cultural family based benefited from a walk round and onsite advice as did the Citadel Youth Centre.

### **c) Energy efficiency workshops**

In order to encourage more energy and carbon savings within community buildings, and engage people with the project, all community buildings were offered a free training session on energy efficiency for the users or staff of their building. This was an aspect of the project that arose after solar PV projects were deemed less appropriate. Workshops were held at:

- Citadel Youth Centre - 9<sup>th</sup> March, 11 people attended
- Multi Cultural Family Base - 12<sup>th</sup> March, 6 people attended
- Leith Community Education Centre 15<sup>th</sup> March - 11 people attended
- Meanwhile, South Leith Parish Church was very interested in having a workshop but a suitable date was not available within the lifetime of the CCF project

The workshops at the first two buildings were for a group of staff members, although the training covered energy-saving at work and at home. The workshop at the third building was for their over 50s social club on saving energy in the home. Altogether, 28 people were trained.

The workshops covered: where energy is used in the home/buildings, how to read electricity and gas meters, behavioural changes to save energy, low cost actions and larger measures (e.g. simulation) that can be installed into properties. The presentations given to staff of the building also included specific information about the building which was gathered from the Energy Saving Scotland Advice Centre energy audit and an additional walk-around of the buildings. (See appendix for presentations).

Participants were provided with feedback forms on the event. Some quotes from these forms:

- *Excellent session - different from our usual day-to-day team discussion. Useful and thought provoking.*
- *I found the workshop very informative and we are looking forward to making changes to improve our energy efficiency.*
- *Allowed us to focus as a team on the issues being discussed. Saving energy (and money). Good education opportunity for service users and good to consider environment implications. Brought people together around this subject.*

As a result of the workshop at Citadel Youth Centre, further workshops have been booked with Changeworks (through other projects) for the next financial year. These will be about saving energy in the home with user groups of the building, such as mother and toddlers group.

## **2. Household Insulation Offer**

Promoting an insulation offer to households in Leith was always an integral part of this project. The aim was to encourage as many households as possible to install loft and cavity wall insulation. The timing was dictated by the need to issue our offer before free insulation schemes went live in other parts of the city. A delay would have meant confusion and also householders contacting the Energy Saving Advice Centre at a time of high call volumes. This was also a channel in which to promote wider awareness of the project and the Co-op.

### **Mail-out**

A mail-out was sent to 32,250 households in Leith in late August 2011, promoting:

- The insulation offer for households in Leith (council tax discount for cavity wall and loft

insulation);

- Information about Edinburgh Community Energy Co-operative and becoming a member;
- A web-link to an online survey (see below), or contact to request a paper version;
- Advertising the Leith Community Energy Day Event on the 15<sup>th</sup> of October (see below)

A copy of the mail-out is in the appendix.

### **Leith resident household survey**

An online survey was set up in summer 2011, and advertised through the mail-out above, to gather information on:

- baseline data on actual energy use across Leith;
- attitudes towards climate change, community energy schemes and related issues;
- current energy-saving behaviour;
- potential for energy efficiency and microgeneration measures.

52 responses were received to the survey. Key findings were:

- all respondents had already adopted some energy-saving behaviours (e.g. switching lights off when not using rooms);
- 74% of respondents would like to see more community-owned renewables in Leith;
- 68% would be potentially interested in buying a share in such a scheme.

The responses suggest that these are environmentally-engaged people (e.g. 82% of respondents believe that 'climate change is an immediate and urgent problem', compared to 57% of the Scottish population<sup>1</sup>). The survey also suggests potential for energy efficiency improvements and considerable interest in community energy schemes.

### **Further promotion of insulation offer**

In addition to the original mail-out, a number of other channels were used to promote the offer, in the period January 2012 to March 2012:

- Posters were sent to community buildings in Leith to advertise the offer;
- Posters were displayed in the Leith libraries during these events (below);
- Research was undertaken and a press release was issued in February to local media '*Almost £1million is going to waste as Leith feels the cold more than most*' (see appendix)
- A podcast was created and put on the Greener Leith website in March and used to create further interest through social media;
- Several posts on Twitter highlighted the offer: *It never hurts to save money on your heating bills, Leith residents are wasting hundreds of thousands of pounds from lost heat every year, want to stop?, We never know how cold it's going to get and insulation might be only a free text message away on, Save money on your heating bills with better insulation;*
- During the latest publicity, householders were given the chance to text or email for the insulation offer;
- As there are a high proportion of tenements in Leith where loft and cavity wall insulation is unsuitable, the agenda for the community event on the 15<sup>th</sup> March was designed to tackle these issue;
- This was followed by a [blog post](#) discussing the learning from the event.

### **Uptake of insulation offer**

Referrals for insulation measures have been:

- Cavity wall insulation – 68;
- Loft insulation (new) – 129;
- Loft insulation (top-up) – 13;
- Energy Assistance Package Stage 4 – 22;

At the time of this evaluation the Energy Saving Scotland Advice Centre was not yet in receipt of confirmed installation figures from contractors. However, they were able to provide estimated

<sup>1</sup> The Scottish Environmental Attitudes and Behaviour Survey 2008



conversion rates based on previous programmes. The outcome is therefore expected to be:

- Cavity wall insulation – 18 (46%);
- Loft insulation (new) – 59 (45%);
- Loft insulation (top-up) – 6 (28%);

These figures are however only up to the 29<sup>th</sup> of February and don't capture data recorded by the advice centre in March for the last two weeks of the project. Final figures will be provided to the Energy Co-operative at the end of the next monthly reporting cycle.

Further benefits of the scheme include:

- Referrals for benefit checks for 22 households;
- Referrals for energy suppliers social tariff 40 households.

### 3. Public Events

Encouraging and implementing a community-based renewables scheme was the central aim of this project. Public events were held within Leith in order to raise awareness and encourage the community to participate in such a scheme. Since promoting energy efficiency is also an important aspect of this project, the events presented an opportunity to raise awareness of how to save energy at home.

Three public events have been held:

- *Leith Community Energy Day* – 15<sup>th</sup> October 2011;
- *Community Energy Project Update* – 21<sup>st</sup> January 2012;
- *Can tenements be energy efficient?* – 15<sup>th</sup> March 2012.

Around 30 people attended the first two events and around 20 people attended the final event.

Leith Community Energy Day (October event) speakers:

- Friends of the Earth Scotland – setting context for renewables in Scotland;
- Transition Edinburgh South (TES) – update from their CCF project which aims to arrange bulk purchasing of solar panels for householders;
- Edinburgh University Heat & the City Project – findings of project on district heating;
- Local case study (Daniel Prince) - householder's perspective on installing solar panels;
- Edinburgh Community Energy Co-op– update of project.

Community Energy Project Update (January event) speakers:

- Sheffield Renewables, community enterprise operating renewable energy schemes;
- Edinburgh Community Energy Co-operative board member – summary of recent community energy coops;
- Edinburgh Community Energy Co-operative board member – update on the project a viability of community building solar projects;
- Updates from Portobello and Leith Community Wind Turbine Project;
- Update from Balerno Village Trust on plans for a hydro scheme.

Edinburgh Tenements Can Be Energy Efficient

The third event on the 15<sup>th</sup> of March focused on how tenements, since it was clear that many Leith households living in flats cannot take advantage of loft or cavity wall insulation. The speakers were:

- Sitar Ramsay (Energy Saving Scotland Advice Centre) – community energy update across Edinburgh area;
- Leith energy efficiency retrofit case study (Chas Booth);

- Lister Housing Co-operative – example of retrofit tenements in Edinburgh;
- Changeworks – tenement retrofit challenge and the Green Deal;
- BCA insulation – insulation options of tenements;
- Spokes – bike storage for tenements.

Presentations for each event are available on the Edinburgh Community Energy Co-operative website:

- <http://edinburghcommunityenergy.wordpress.com/2011/09/22/leith-community-energy-day/>
- <http://edinburghcommunityenergy.wordpress.com/2012/01/23/a-community-owned-energy-company/>
- <http://edinburghcommunityenergy.wordpress.com/2012/02/20/edinburgh-tenements-can-be-energy-efficient/>

#### *Feedback from events*

Nine feedback forms were received from attendees of the final event. Key findings:

- Attendees particularly liked the presentations on insulation for solid walls and the case studies;
- 7 participants reported an increased understanding in energy efficiency;
- All reported the event as interesting and informative;
- 5 respondents stated the event 'met their expectations' and 2 stated that it 'exceeded their expectations';
- One comment on the Edinburgh Community Energy Co-operative website stated '*This was a really interesting meeting – I especially enjoyed the practical nature of many of the talks.*'
- (More feedback is within the next section).

## **4. Promoting energy monitors in libraries**

Edinburgh residents can borrow energy monitors from their local library. This is an under-utilised scheme and the Energy Coop decided to work with the libraries to promote it in the following ways. This aspect of the project was not included in the original bid but formed part of the redirection of the project in December 2011. This offered an opportunity to engage Leith residents more fully and raise awareness on how to save energy.

### **Energy display in libraries**

Energy displays were held in Leith Library and McDonald Road Library for two weeks. This contained:

- a user-friendly leaflet on how to use the energy monitor;
- posters advertising the energy monitor drop-in sessions and the insulation offer;
- a wide range of leaflets related to energy saving (e.g. top tips, insulation);
- Leith library also put on a display of books connected with energy saving and sustainable living.

### **Drop-in sessions**

2 x 2 hour 'drop-in' sessions were held at each library with:

- an energy advisor available to speak to members of the public about how to use the energy monitor and general energy advice;
- an energy monitor set-up for demonstration purposes;
- energy advice leaflets (as in the energy display).

The events were advertised through posters in the libraries, social media. (See appendix)

### **Impact of promotion**

- The number of people attending the drop-in sessions was:
  - Leith library (16<sup>th</sup> Feb) – 3 names written down;
  - Leith library (24<sup>th</sup> Feb) – 5 people spoken to (2 names written down);
  - McDonald Road library (1<sup>st</sup> March) – 8 names written down (1 person took 10

- leaflets for a group she runs);
  - McDonald Road library (9<sup>th</sup> March) – 5 people spoken to
  - In total, this is 21 people engaged at the events;
- Around 50 leaflets were distributed at the libraries on how to use an energy monitor
- Number of energy monitors borrowed as a result:
  - Leith library – lent out 5 energy monitors in this two week period (and had lent 0 in the past 5 months);
  - McDonald library – lent out about 10 monitors;
  - In total, 15 monitors were borrowed;
- Further contacts were made with user groups at the libraries and Changeworks will be holding energy-advice talks with these groups in the next financial year (through a different project).

The poster and energy monitor leaflet used for the promotion are in the appendix.

Those who borrowed energy monitors were given a feedback form. Two completed forms were returned. This is a small sample but suggests that the energy monitors help to raise awareness of energy use, although both individuals who completed the forms stated they already made a number of energy-saving behaviours. Quotes from the completed forms included:

- *Although already aware of how to reduce my energy bills, using the monitor has been very helpful in identifying how much my appliances use.*
- *Thanks for making the energy monitors available*

## 5. Publicity and communications

Raising awareness and informing Leith residents and community buildings about this project was essential to the success of this project. This included promoting the Edinburgh Community Energy Co-operative and all the activities within this project.

The first public meeting was covered in the Edinburgh Speaker and Evening News

The project was publicised in a number of ways:

- Edinburgh Community Energy Co-operative website (<http://edinburghcommunityenergy.wordpress.com/>) – this was updated regularly with progress on the project and details of upcoming events. Website statistics show that between August 2011 and March 2012 there were 2168 visits to the website. The average number of visits per day had risen since August 2011.
- Newsletters – two newsletters were produced (Dec 11 and Feb 12) and sent to Edinburgh Community Energy Co-operative members. This contained progress of the project activity and upcoming events.
- Promotion of the insulation offer –
  - First press release circulated to: Scotsman, FL/STV, FL/BBC, Leith Magazine, Guardian Scotland, Edinburgh Reporter, East Lothian News, Greener Leith & STV, STV, Broughton Spurtle, Holyrood Magazine, Edinburgh Spotlight, Leith FM, and Radio Forth News.
  - Picked up by the Leithier - <http://www.leithermagazine.com/2012/02/22/1-million-wasted.html>;
  - Broughton Spurtle - <http://www.broughtonspurtle.org.uk/news/leithers-leaking-warmth-and-money>;
  - Picked up by STV: <http://local.stv.tv/edinburgh/news/28971-leithers-urged-to-take-up-insulation-funding/>;
  - The 'ChangeworksUK' twitter account got 15 clicks through to the press release

article;

- Second press release circulated to: all of the above, Energy Saving Trust, Keep Scotland Beautiful, The Carbon Trust and The Department of Energy and Climate Change.
- A podcast was created to advertise the insulation offer through the Greener Leith website - <http://www.greenerleith.org/greener-leith-news/2012/3/8/warm-up-leith-home-insulation-is-free.html>.
- Promotion of the March event:
  - Advert in the Leithier (distribute 9000 copies in Leith and surrounding area);
  - Advert in the Broughton Spurtle;
  - Twitter promotion of the energy Co-operative website blog about the energy conference yielded 17 hits in the period 1-21 March;
  - Greener Leith website - <http://www.thegreenerleithsocial.org/events/edinburgh-tenements-can-be-energy-efficient>;
- Publication of blog event was covered in STV city blogs round up <http://local.stv.tv/edinburgh/news/opinion/31794-edinburgh-weekly-blog-round-up-oliver-cromwell-in-morningside-and-controversy-in-canonmills/>.

#### **Working with other groups:**

- Contacts were made and maintained with various other local and national community groups e.g. Greener Leith, Transition Edinburgh South and Sheffield Renewables. For example, these groups presented at some of the events;
- In addition links were built with the Neighbourhood Partnership, which helped raise awareness of the project and promote events.

### **Outcomes**

The main outcomes of the project are as follows.

#### **Measures installed/potential installs**

- 105 Households benefited from insulation measures;
- Identified one 10kw solar PV installation on a community building;
- A wide range of carbon saving measures from 6 community building energy audits; including a substantial loft insulation scheme for one church hall;
- Around 150 people were engaged in the community.

#### **CO<sub>2</sub> emissions baseline**

From the 53 people who completed the Leith resident survey, we have been able to calculate the CO<sub>2</sub> emissions of households in Leith. This is a small sample and therefore is an indicator only. The survey showed that households paid an average of £452 per year for gas heating and £380 for electricity (a small number of people have electricity heating). This converts approximately to an annual household consumption of 8,609 kWh for gas and 2,359 for electricity. Converted to CO<sub>2</sub> emissions and multiplied by 32,000 households in Leith, this creates overall emissions of **88841.6 tCO<sub>2</sub>** per year.

However, we don't believe this sample is neither sufficiently large nor representative (based on a self-selecting group) to be wholly reliable. This confirmed by recent energy modelling using National Home Energy Rating Software of 65 tenement flats in the project area for Port of Leith Housing Association this provided a figure of 3.0 tonnes per house. This would equate to a baseline of over **96,000 tCO<sub>2</sub>** per year per annum. In practice, neither figure is likely to be reliable

for the whole area given the diversity of properties and occupant behaviours which would require a very large and carefully selected sample. For this reason savings, are estimated based on Energy Saving Trust averages which the advice centre uses for reporting.

### **CO<sub>2</sub> emissions saved**

- Loft insulation (virgin and top-ups) and cavity wall insulation 2975 tonnes
- Stage 4 of the Energy Assistance package 1277.94 tonnes
- Advice from the Energy Saving Scotland Advice Centre 14.5 tonnes
- Other advice and sign-posting through survey responses (52) podcast (84), website advice and public meetings (70) based on 10% taking action (0.25 tonnes saving as per EST advice) 5.15 tonnes

**Total 4,275.59 tonnes**

### **CO<sub>2</sub> Saving Potential**

The potential CO<sub>2</sub> savings from the community building energy audit reports are:

- Multi-cultural Family Base – 5.4 tCO<sub>2</sub>/year (43.2 tCO<sub>2</sub>/lifetime)
- Pilmeny Youth Centre – 7.4 tCO<sub>2</sub>/year (59.2 tCO<sub>2</sub>/lifetime)
- Norton Park conference centre – 11.3 tCO<sub>2</sub>/year (90.4 tCO<sub>2</sub>/lifetime)
- The Albion Trust – 42.3 tCO<sub>2</sub>/year (338 tCO<sub>2</sub>/lifetime)
- Citadel Youth Centre – (Not yet confirmed)
- There will also be more savings identified from the planned audit on the Stafford centre
- South Leith Parish Church Halls loft insulation 252.5 tCO<sub>2</sub>/lifetime
- South Leith Parish Church Halls solar PV (4.12 tCO<sub>2</sub>/year 103 tCO<sub>2</sub>/lifetime)

**Total 886.3 tonnes**

Note that the annual savings were given in the Energy Saving Trust reports; these have been multiplied by 8 to get lifetime figures (as suggested in the Energy Saving Trust audit reports) because they include a range of measures. It is not known how many buildings are likely to install these measures, although all are unlikely to go ahead. The above is therefore a conservative estimate as some measures could deliver higher savings given a longer lifespan.

The loft insulation for South Leith Parish Church Halls, which was organised independently, of the audit report, is based on a conventional Energy Saving Trust 25 year payback period. The Edinburgh Energy Co-operative will actively try to encourage this installation because it offers a good payback.

Potential savings from installing solar PV onto the five community buildings calculated is 676 tCO<sub>2</sub>; however, at present, there is only a realistic chance of one 10kWp proceeding with an estimated saving of 103 tCO<sub>2</sub> lifetime. This included above based on a 25 year lifetime.

### **Fuel bill reductions**

Based on average savings for loft insulation (virgin and top up) and cavity wall insulation the annual fuel bill savings were £12,833 and £256,660 over a lifetime with a project payback of less than four years. This doesn't include any further savings realised by community buildings after the project is finished. These paybacks also relate to the whole project cost, including the work to promote solar installs.

### **People directly engaged**

- 52 people completed an online survey

- 58 people contact and received advice from the Energy Saving Scotland Advice Centre
- 30 people attended the first event in October
- 30 People attend the event in January
- 27 people attended the final event (not all names were recorded for each event, so it cannot be known if these were the same people – it could be estimated that 50 different people attended events)
- 15 people borrowed energy monitors / 21 spoken to at library events
- 28 people attended training events (energy efficiency)
- 7 new members of the Co-operative were recruited

With an allowance for double counting it is estimated that this project directly engaged around 150 people (aside from those involved in community building audits and households who had insulation installed). It is difficult to determine the exact number or level of engagement with people online based on the additional 1953 hits to the Energy Co-op's website. Accounting for the mailer being read by one member in 10% of households, 4650 people could be aware of the project but this estimate isn't verifiable.

### **Changes in attitudes and behaviour**

#### *Feedback from events*

Nine feedback forms were completed from the final event held on March 15th 'Edinburgh tenements can be energy efficient'). Key findings:

- 7 respondents said that the event had increased their understanding of how to make tenements more energy efficient
- 7 respondents said the event had made them more likely to take action to save energy in their home
- 6 respondents said the event had increased their commitment to improving energy efficiency
- 6 respondents said the event had made them more likely to become involved in a community energy scheme

#### *Feedback from training workshops*

Three completed surveys were received from the training workshops at community buildings (the response rate was low due to nature of groups). This represents a small sample, however, the results were very positive, as all respondents stated that as a result of the training:

- their awareness of energy efficiency had been increased
- they were more likely to take action to save energy within their community building and at home
- their commitment to energy efficiency had increased
- they were more likely to promote energy saving to staff or users of the community building.

#### *Feedback from borrowing energy monitor*

- Two respondents stated that borrowing the energy monitor had made them more aware of their energy use
- one person reported reducing shower time

### **Relationships formed**

- We work closely with Greener Leith who helped to promote the project
- We also developed links with Transition Edinburgh South and Transition Edinburgh Pentlands
- Sheffield Renewables & Balerno Village Trust (community share offers)
- Two local libraries
- Neighbourhood partnerships
- 12 community buildings across Leith, although only 7 had direct involvement in the project through training, audits or solar feasibilities.

- Three Eco-Congregations
- 1953 visitors to the Edinburgh Community Energy Co-operative website

### **Predicted vs. actual outcomes**

It is difficult to judge the outcomes achieved by this project compared with those originally set out at the start of the project since the project changed direction after the government's changes in Feed in Tariff rates.

#### **1. Community buildings**

The main aim was to install renewable energy onto 6 community buildings and to create a community finance scheme for renewables. The Feed in Tariffs scheme changed the context, and renewables were not installed onto any community buildings, although feasibility for PV was analysed the potential of 5 buildings and further building sought a quote independently of the project.

Whilst the project has not delivered on the original aims of this aspect of the project, 6 buildings have received Energy Saving Trust energy audits, identifying energy efficiency options for their building and 3 buildings received staff/user training sessions identifying behavioural changes. Work to progress loft insulation for South Leith Parish Church Halls demonstrated high carbon savings.

In addition, the project aimed to create a greater awareness of community-owned renewable energy schemes. The project has engaged residents from across Edinburgh interested in community-owned renewables through the events, mail-out, website and publicity. The Leith resident's survey also showed high levels of potential interest in supporting future projects.

#### **2. Household Insulation Offer**

The *estimated* number of installs in domestic properties were:

- Loft insulation (new) – 189
- Loft insulation (top-up) – 378
- Cavity wall insulation – 95
- Behaviour change in 25% of households based on engaging 23,000 households

*Actual* outcomes as at the 29<sup>th</sup> of February were:

- Cavity wall insulation – 18
- Loft insulation (new) – 59
- Loft insulation (top-up) – 6
- For behaviour change see previous commentary on people directly engaged (up to 4650)

Whilst figures these CO<sub>2</sub> were less than hoped, the project budget was underspent and this allowed a greater focus on community building users and wider awareness raising through measures such as the promotion of energy monitors. In theory there should be a far greater number of lofts to top up; a fact that illustrates this measure needs to be free to achieve high levels of uptake.

On review the insulation targets set in this project were ambitious. Historical rates of insulation in Leith are very low according to Energy Saving Trust analysis 117 lofts (top up and cavities) and 121 cavities. Figures for this project are 56% for lofts and 15% for cavities delivered in six months. Feedback from the mail out included complaints that the grants offered weren't suitable for Leith properties which are predominantly tenements.

### **3. Awareness of community energy**

The Edinburgh Community Energy Co-operative website had 1953 unique hits over the eight month of the project a 76% increase on the previous eight months.

There have been 1,063 unique page views in the last four weeks on the energy efficiency section of the Greener Leith website where much of the information was hosted. There have been 184 unique page views of that post since the Podcast went live with 84 people listening to the podcast online.

## **Learning & Reflection**

This section provides the main learning points from the project, reflecting on what aspects worked well and which worked less well.

### **1. Project timescale**

The project timeframe was insufficient to achieve the level of engagement we anticipated and that required to fully realise our objectives. Momentum was only built up in the later months of the project. Achieving project buy in takes time, in relation to identifying partners who often take time to respond. For instance, community building managers often had to get the consent of management committees which met on a monthly cycle.

Due to a robust tendering process, work did not start on the project until late July 2011, almost three months after the project started. This shortening of the project timescale made delivery even more challenging. Excluding 1 month at either end of the project for setting up and winding down and the time needed to revise the plans after the Feed in Tariffs review this left six months of actual delivery time. In this time, the team devised and largely delivered a revised project plan.

### **2. Feed in Tariffs review**

A major obstacle to the project was the government's consultation on feed in tariff rates in October 2011 proposing to halve the rates from 43.3p to 21p per kWh (for <4kWp systems) by mid-December 2011. This dramatically reduced the financial returns on solar PV and increased payback times. Securing finance for community-finance schemes was deemed to be very difficult as schemes were likely only to go ahead if self-financed. The Edinburgh Community Energy Co-operative considered that setting up solar schemes on community buildings in Leith was still viable but much less likely. It therefore has an impact on the project, causing a redirection away from solar PV projects and community-owned renewables schemes. Instead focus was placed on working with community buildings to reduce carbon emissions through energy efficiency measures and staff training, and on the household insulation scheme. Had this been anticipated, the Edinburgh Community Energy Co-operative would have pursued a different approach which didn't rely on solar installs as the key promotional hook for the project.

### **3. Feasibility of solar PV in community buildings**

The lower Feed in Tariff rates meant most projects had long payback times and levels of return than could not support a community based financed mechanism as planned. If the feed in tariff rates had been maintained close to the original rates there would have been a high chance of organisations proceeding. Whereas, the new reduced rates and on-going uncertainties make most projects marginal.

The community building which expressed the most interest in solar PV, unfortunately, faced a number of challenges with installing PV: planning issues in a conservation area, concerns about the roof structure and the need for strategies to prevent the panels being stolen or vandalised.



This required, structural survey work, applications for building control and a full planning application, which would likely take two three months to reach committee.

Whilst these issues are not insurmountable they did mean that it was impossible to get the install completed before March 31<sup>st</sup> and within the lifetime of the project.

#### **4. Engaging with a large community**

Leith has 32,000 households and it proved difficult engaging with such a large and diverse community. The boundaries of the area aren't naturally defined and porous without a natural community focus. Meanwhile numerous local publications cover different parts of the area. Latterly it was discovered that social media was a better way of engaging with this community. With more time further work would have been progressed with the organisations using community buildings.

#### **5. Uptake from community buildings**

Although a number of community buildings were heavily engaged with the project, gaining wider uptake from others was very difficult. Considerable effort was placed in promoting firstly the solar feasibilities, then subsequently free energy audits and energy efficiency workshops for staff/users, but the uptake, especially of the latter, was limited. This was despite numerous emails/letters and phone calls sustained over a number of months. Some buildings had previously had audits completed, although it was clear that follow up was necessary to encourage them to progress improvements. In part, some needed to take proposals to committee or meetings, which delayed decisions. It was clear that there was insufficient time to gain the trust of some building users, and use case studies and examples to promote the project.

#### **6. Engaging community buildings**

Despite not engaging as many community buildings as hoped, those that were engaged were very keen and enthusiastic to work with us to identify energy saving opportunities in their building. Building up these relationships allowed us to carry out a number of activities with the buildings and has provided contact point for future work, such as talks to groups on energy issues.

#### **7. Working with other community groups**

This was a positive aspect of the project which allowed for information and experience sharing, with a range of groups including Transition Edinburgh South, Transition Edinburgh Pentlands, Greener Leith who became a project partner and the Balerno Development Trust.

The potential for future work with South Leith Parish Church also exists, which could ultimately realise the objective of a visible solar array in Leith.

#### **8. Promotion**

A lot of effort was made to encourage people to attend public meetings; however attendance peaked at around thirty. This was despite extensive use of email lists, through partners, social media promotion and advertising. A range of venues and times were also used. However, audiences were enthusiastic and participants were keen to share information about community energy scheme across the city. A higher number of individuals were engaged through social media.

#### **9. Insulation offers in tenement areas**

There was limited potential for cavity wall and loft insulation measures in area dominated by tenements. Either a free scheme (Universal Home Insulation Scheme) or a more intensive

approach towards engaging owners in a block is required to promote loft insulation. This wasn't possible with the timeframe and budget of the project.

## Finance & Administration

### Finance

- Original budget = £50,145 of which £48,331.36
- Six claims were made detailed below
- Cash flow – was managed via the project consultant who was paid in arrears. Most expenditure was spread across the period except for the mail out costs where nearly 1/3 of the budget was spent in September 2011.

- **Claims**

8 <sup>th</sup> Aug 11	£118.80
14 <sup>th</sup> Nov 11	£25,012.52
16 <sup>th</sup> Jan 11	£5,206.21
16 <sup>th</sup> March 12	£8,427.51
28 <sup>th</sup> March 12	£9,566.32

### Administration

- Edinburgh Community Energy Co-operative put an invitation to tender in June 2011 to appoint a co-ordinator for the project and concluded this project in July 2012. This was overseen by a sub-group of board members.
- 3 bids were received in July, and a consortium of Changeworks, Edinburgh Energy and Environment Consultancy and On-Site Generation were appointed to carry out the project based on the advice to board from the sub-group. The process was documented and papers lodged with Climate Challenge Fund.
- Changeworks managed the project, with some activities (organising public events and contact with community buildings) managed by Edinburgh Energy and Environment Consultancy
- The Community Energy Co-operative board met representatives from Changeworks and Edinburgh Energy and Environment Consultancy on a monthly basis to discuss reports on progress and discuss upcoming activities.
- The sub-group oversaw the day to day administrative aspects of the project including reviewing claims and progress reports.
- Changeworks manages the South East Scotland Energy Saving Scotland Advice Centre, and there was therefore regular communication between the Energy Saving Scotland Advice Centre and staff delivering the Edinburgh Community Energy Co-operative project
- Progress reports to the CCF were completed between Changeworks and Edinburgh Energy and Environment Consultancy

## Supporting information

These photos are from the most recent public event in March 2012 (Can Edinburgh Tenements be Energy efficient?).



## Accompanying Information

The following information has been sent to CCF support this report

1. Edinburgh Community Energy Co-operative newsletters X 2
2. Press coverage/articles
3. Solar PV report for community buildings in Leith
4. Mail out to Leith householders
5. Leaflet on using energy monitor
6. Posters
7. EST business audit reports
8. Leith resident survey results

## About this report

This report was produced by Stuart Hay consultant to Co-operative and principle project co-ordinator, with the assistance of his colleague at Changeworks Tessa Clark. An early outline was circulated to and reviewed by the board of the Energy Co-op, with comments provided at a board meeting on the 17<sup>th</sup> of March.

Comments on this draft were also received from Isla Valenti CCF Development Officer, who is acknowledged here for her support and advice during the delivery of the project.

A further draft was circulated on the 26<sup>th</sup> of March with comments received from project steering group members Andrew Tait (board member) and Pete Roche who was also involved in delivering many aspects of the project as a consultant.

The final draft was reviewed and agreed by the project steering group comprising Andrew Tait and Ian Cook on the 29<sup>th</sup> of March 2012.