



**Final Report  
Community carbon Challenge and Cosy Keith  
November 2008 – March 2011**

**31 March 2011**

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# Overview

## Background

This report focuses on REAP's three year Community Carbon Challenge and Cosy Keith projects from November 2008 to March 2011.

REAP is an award winning sustainable development charity based in Keith and working in Moray and the North East of Scotland. Our three main activities follow the sustainable development triple bottom line: social enterprise and economic fairness; environmental activity including energy efficiency and waste reduction; and community development through community consultation and capacity building. REAP was founded in 1997 under the aegis of CSV and has been an independent charity since 2007.



Our projects have included:

- Community consultation and action research for a range of partners including the NHS, Cairngorm National Park Authority and the Scottish Government
- Environmental workshops for schools, community organisations and charities, young people and others funded by the Climate Challenge Fund among others.
- energy awareness and reduction, waste reduction, carbon foot printing and renewable energy.
- Waste reduction research and projects in Keith
- Social enterprise advice, promotion and training
- Thermal imaging camera surveys and energy advice
- Administration, payroll and bookkeeping services to other charities and community groups

## Summary

This report focuses on our highly successful 3 year Community Carbon Challenge and Cosy Keith projects which commenced in November 2008. These community based interventions set out to bring three separate but interlinked projects to the local community:

- 1 To develop “Grampian Thermal Surveys” using thermal imaging technology to identify heat loss in buildings
- 2 To roll out the Community Carbon Pack which REAP developed with Moray Council and Scottish Natural Heritage to help communities calculate their carbon emissions and agree a strategy for reduction.
- 3 To create a project for the town of Keith - Cosy Keith - to raise awareness of climate change and put in place practical changes.

## Our achievements:

### Thermal Camera

- Conducted over **120 surveys of domestic and public buildings (including village halls)** have been carried out attracting interest from the architectural and building trade, community groups and schools throughout the Grampian and east Highlands regions. This resulted in roof space insulation, cavity wall insulation, boiler replacement and double glazing installations. (See Fig. 1)
- Thermal Camera Project Officer also trained as an Energy Performance Certificate assessor offering a powerful combination of technical expertise for the future when combined with the Thermal Camera
- Demand for the camera has grown considerably since the beginning of the project. In the first full year of operation (2009) 22 surveys were carried out. In the first 12 weeks of 2011 alone 28 surveys have been completed with 12 more booked.
- REAP created “Grampian Thermal Imaging”. A local social enterprise that has begun generating income enabling more free surveys to be offered to those who cannot afford to pay. **This gives the project its sustainability beyond the current funding round.**

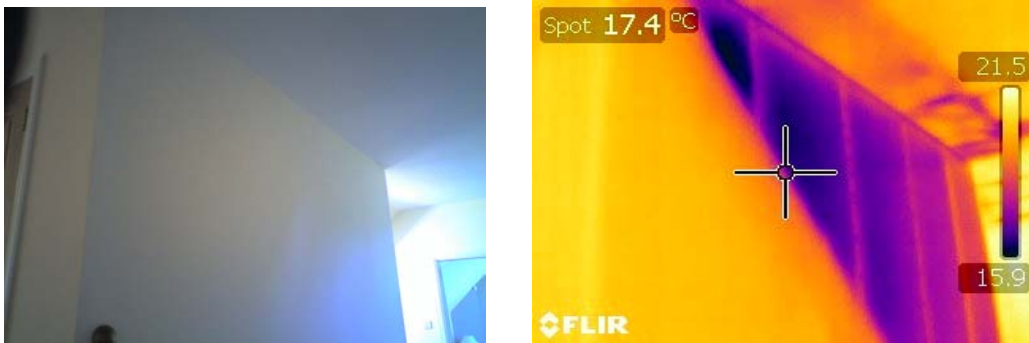


Carbon saved to date:

Actions identified	Loft insulation	New gas condensing boiler	Cavity wall insulation	Double glazing	TOTALS
Actions planned	12	0	4	3	16
Actions completed	8	1	2	1	9
CO <sub>2</sub> saved	4877kgs			960kgs	5837kgs

Fig.1

The vivid images produced by the camera have enabled people from all backgrounds and ages to engage with the concept of heat loss.



Cold voids



Insulation faults

*"I think this is a first class service that REAP is providing."* B McLean, Banff.  
December 2010

*"The survey you have carried out in my house regarding heat loss has been invaluable"* E Ogilvie, Lossiemouth. October 2010.

*"I would recommend that everyone needs to have their building surveyed."* Mr Dutton, Rosiemay

*"As a result of your efforts, I am sure I will be able to significantly improve the heat losses from my home and you have provided the evidence I needed to finally go ahead with fitting triple glazing to replace the aluminium glazing. I will definitely now get round to finishing the loft insulation and the downstairs toilet wall too."* Mr. Mulholland, Aberlour, March 2011.

### Case Study 1

#### **Vital help for ill 80 year old from REAP**

During a survey in February 2011 REAP's officer noticed that the householder was so ill that all rooms were kept at an average temperature of around 25 degrees Celsius. The householder was faced with a horrendous heating bill. Upon closer inspection during the survey REAP's camera operator noticed the typical brick pattern for houses with wall cavities. Shortly after this discovery SCARF and Energysavingscotland have been contacted and within a few weeks the householder was given a social energy tariff and the wall cavities will be filled free of charge. The householder will also get a refund for the loft insulation received last summer and charged in spite of having the age for getting such measures done free.

- Attendance at many exhibitions such as the National Energy Exhibition in Inverurie, Energy Efficiency Fair in Elgin, Moray College Science Fair, Moray College Helping the Elderly, Energy Efficiency Fair in Inverness, Hard to Heat Homes in Keith plus considerable marketing and promotion led to appointments for surveys and subsequent CO<sub>2</sub> savings (listed above).
- This winter has been our busiest period to date showing a **60% increase** in demand for surveys in January compared to the same period last year. Our volunteers have had training in thermal imaging and a further operative will be trained in the near future.

## Community Carbon Footprinting

- We developed our Community Carbon Footprinting Toolkit. This is a resource that we plan to continue using and offering to other communities to help build their capacity.
- We worked in close partnership with several village halls and community groups – Village halls in Newmill, Mulben and Drummuir, The Loft Youth Project, Kilt Keith School and the British Legion to reduce their carbon emissions. With Newmill Village Hall REAP were instrumental in gaining the hall £130,000 in funding from Scottish Gas and Community Energy Scotland to install a biomass boiler and a solar panel water heating system saving early 3000 kgs of CO<sub>2</sub>.
- Working in partnership with EST business advisors & Keith & Strathisla Regeneration Partnership we contacted all Keith businesses and recruited 6 to complete a business survey. This has led to these businesses taking a variety of carbon saving measures such as increased insulation, boiler replacement and reduced transport usage saving an estimated 1500 kgs CO<sub>2</sub> annually.

## Cosy Keith

- REAP has held a series of awareness raising events – Hard to Heat Homes Seminar, Permaculture courses, presence at Keith Traditional Music Festival, Green Christmas event, school workshops in local primary and secondary schools. Arising from these events has been a number of pledges from the public to reduce CO<sub>2</sub>. Schools have engaged more deeply with the issue of carbon reduction asking our officers back to run subsequent workshops.



- Two project officers are fully trained to carry out energy audits
- REAP trained volunteers from Transition Town Forres in energy advice
- Five volunteers were trained to carry out energy audits with additional funding from Scottish Power.
- We developed REAP's Keith office as an energy advice drop in centre that has now become well established in the community. This was supported by ESSac. Visits have increased from 3-4 weekly to an average of 8-10.

Benefits of the advice centre:

- ✓ Advocacy with landlords
- ✓ Helping those in fuel poverty without phone or internet access
- ✓ Helping the elderly without internet access
- ✓ Enabling access to financial support to improve the quality of home insulation



- Distribution of 3000 Home Energy checks in Keith. Almost one-third were returned enabling ESSac advisors to support these households in accessing the necessary advice. An estimated 2000kgs of CO<sub>2</sub> per annum were saved in home insulation and pledges were received of a further 21.4 metric tonnes in annual CO<sub>2</sub>.
- ESSac has supported REAP in developing Cosy Keith as a model low carbon community.
- Volunteers have been recruited to assist homeowners in accessing advice and support
- The thermal imaging camera was used extensively in Keith to conduct street surveys
- A series of quarterly newsletters were given wide community circulation



- Cosy Keith's success has led to queries and requests for support from towns and settlements within a 15 mile radius of Keith. (See new project proposals)

## Case Study 2

### Man gets more than he bargained for!

Mr Reid came into the REAP office around a year ago to enquire how he could reduce the energy bills in his house. He was interested in reducing his bills for heating his hot water and after researching on line, decided to go for installing solar water heating panels with a grant to help with costs.



Through Mr Reid's contact with REAP, his house was checked for insulation and brought up to the current standards. He also changed all his light bulbs to low energy ones and EAGA came and installed the 2x2m solar panels in one day!

*"It was fantastic the amount of heat generated through the panels. The day after they were installed it was a typical Keith day – pouring with rain and cloudy, but the panels still got the water up to 70 degrees! In the summer months the panels provide almost all the energy for my hot water and there's always plenty for showers and washing up etc. Even in March on a bright day the water temperature can reach 87 degrees – they are really efficient panels and just need light to work."*



**Lasting legacy in the community of our CCF funded work to date:**

- Community Carbon Footprinting Toolkit will continue to provide benefit to local residents for many years to come enabling the calculation of individual CO<sub>2</sub> emissions.
- Newmill Village Hall has a biomass boiler and solar heating system. REAP is continuing to work with the community to develop a community interest company to sell the energy to the local community Annual CO<sub>2</sub> saving = 2769kgs..
- Our work with Newmill Village Hall has enabled REAP to develop a community-based consultancy service to other similar small community enterprises, helping them build their practical capacity and sustainability.



- Established a very popular drop in advice centre in REAP's Keith office adding to the community's resources.



- Over 40 people have completed ESSAC (Energy Savings Scotland Advice Centre) energy surveys through the REAP office during our Cosy Keith project

- Through REAP's Energy Audits many householders were enabled to upgrade their homes and reduce their carbon emissions. Annual CO<sub>2</sub> savings = 13.58 metric tonnes plus pledges of 21.4 metric tonnes. (See Fig. 2)
- Resulting measures have included loft insulation, cavity wall insulation and installing solar panels to heat hot water, as well as double glazing and draught stripping doors and windows, turning down heating thermostats by a degree, and sorting out heating controls so that people aren't heating the house when they are not in
- Advocacy on behalf of householders with their landlords
- Heightened awareness among the local community of their carbon emissions as evidenced by the increasing demand:
  - ✓ on our Drop in Advice Centre
  - ✓ for thermal camera surveys
  - ✓ from schools and outlying communities for support and information.
- Local youth project – The Loft – enabled to upgrade their buildings saving 2 metric tonnes CO<sub>2</sub> annually.
- Two trained and very experienced project officers in conducting energy audits, delivering climate change initiatives and providing practical advice and information to the community
- One Project officer trained to conduct EPC assessment and thermal imaging for the community. The combination of these resources and skills within a community group has greatly developed our skills set and the service we can offer locally to upgrade buildings thermal qualities and reduce carbon emissions.



- We have laid the groundwork with the extensive marketing of the thermal camera throughout the Grampian region to develop both an ongoing free service and as an income generating social enterprise for those that can afford to pay. To date £ 6,300 income has been generated enabling REAP – as a social enterprise - to reinvest in free surveys for those that cannot afford to pay. As the camera's popularity continues to increase significantly (see above), this will provide a healthy income stream, employment and benefit to the local and wider community.

- REAP assisted in the development of Keith Allotment Association which is now in final negotiations with supportive landowners.
- Stronger working partnerships with many local community and statutory organisations to promote awareness of climate change have been established enabling further community based work to be undertaken: with Energy Savings Scotland, SCARF, Keith Grammar School, St Thomas' Primary School, Newmill Primary School, Loft Youth Project,. Newmill Village Hall, Mulben Village Hall, Drummuir 21, Findhorn Community Hall, Transition Town Forres, Moray College, Keith & Strathisla Regeneration Partnership, Keith Heritage Group, Moray Council Housing Department, Highlands and Islands Enterprise, CFINE, Community Energy Scotland, Aberdeen Forward, Grampian Housing Association, Langstane Housing Association, Keith Music Festival, Knockando community, British Legion, Keith Kilt School, Keith Allotment Association and Elgin Youth Café among many others.



**Actual CO<sub>2</sub> Savings per annum**

<b>Carbon Challenge Project Area</b>	<b>Actions</b>	<b>CO2 savings per year</b>
<b>Thermal camera surveys</b>	Led to actions including insulation, double glazing being fitted etc	2,320 kgs
<b>Energy advice sessions</b>	Assisted clients getting Insulation, double glazing, new efficient boiler	5,450 kgs
<b>Specific Pledges from events</b>	Using home grown veg, turning down thermostat etc	4,400 kgs*
<b>Community buildings work</b>	Installation of solar panel, insulation at Newmill Hall	5,837 kgs
<b>TOTAL</b>		<b>18,007 kgs</b>

**Agreed Target to date: 13 metric tonnes**

**Achieved to date: 18 metric tonnes**

\*This figure has excluded many other pledges received estimated at 21.4 metric tonnes.

**Financial Analysis**  
CCF-010 - Community Carbon Challenge

Budget Heading	Total Awarded:	All Years		
		Awarded	Claimed	Remaining
<b>Capital Costs</b>				
Thermal Camera, Lens	24,995.25	24,995.25	28,336.00	- 3,340.75
Laptop computer and software	515.90	515.90	515.90	0.00
<b>A: Salaries inc. management and website time</b>	14,940.89	14,940.89	14,941.89	-1.00
Salary - camera project	37,636.00	37,636.00	37,957.08	- 321.08
Salary - carbon pack	13,306.39	13,306.39	13,275.52	30.87
Salary - Cosy Keith	4,635.00	4,635.00	4,635.00	0.00
Salary - Management	13,591.00	13,591.00	12,874.88	716.12
Salary - Website Creation	1,350.00	1,350.00	1,600.00	- 250.00
<b>B: Office costs, staff training</b>				
UK level 1 Certification Training	4,145.75	4,145.75	805.00	3,340.75
Staff Travel & Training Accommodation	2,479.98	2,479.98	3,232.22	- 752.24
Insurance 127 x 12	3,165.64	3,165.64	2,896.96	268.68
Rent	5,700.00	5,700.00	5,700.00	0.00
stationary	2,326.95	2,326.95	1,504.06	822.89
electricity, phones, water, postage £127 per month	3,773.99	3,773.99	3,703.33	70.66
<b>C: Materials, promotion, equipment, volunteer costs</b>				
Manuals, literature, trade body membership	50.00	50.00	262.60	- 212.60
Advertising, stationery, folders etc	2,209.21	2,209.21	2,665.22	- 456.01
Equipment maintenance and calibration	1,250.45	1,250.45	1,366.48	- 116.03
Promotional material - carbon pack	50.00	50.00	10.19	39.81
Newsletters £300 x 4	1,570.61	1,570.61	1,230.62	339.99
Volunteer expenses	291.75	291.75	467.04	- 175.29
<b>D: Cosy Keith events</b>				
street carbon party £50 x 4	531.84	531.84	531.64	0.20
Training venue, refreshments etc £50 x 8	0.00	0.00	0.00	0.00
Trainers fees, travel etc £125 x 8	259.40	259.40	259.40	0.00
<b>TOTALS :</b>	<b>138,776.00</b>	<b>138,776.00</b>	<b>138,771.03</b>	<b>4.97</b>

**Financial Analysis**  
CCF- 690 – Cosy Keith

Budget Heading	Total Awarded	Claimed	Remaining	Revised Remaining
<b>A: Salaries</b>				
Outreach Officer	6,420.00	6,416.54	3.46	3.46
Management	2,340.00	2,467.38	-127.38	-127.38
Admin	3,194.00	3,410.64	-216.64	-216.64
Pension	600.00	456.28	143.72	143.72
<b>B: Promotional Materials</b>				
Stationery	700.00	761.90	-61.90	-61.90
Newsletters & Leaflets	1,200.00	837.00	363.00	63.00
Promotional Materials	1,200.00	786.32	413.68	6.18
Events	600.00	0.00	600.00	300.00
Volunteer Expenses	250.00	0.00	250.00	100.00
Accountancy Fees	0.00	1,057.50	-1,057.50	0.00
<b>C. Equipment &amp; Training</b>				
Computer Equipment	800.00	989.00	-189.00	11.00
EPC Training & Travel	2,250.00	2,124.35	125.65	25.65
<b>TOTALS :</b>	<b>19,554.00</b>	<b>19,306.91</b>	<b>247.09</b>	<b>247.09</b>