

Climate Challenge Fund

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Name of project or organisation:
<u>REAP</u>
Starting Point
<u>Strand 1: Energy Action Moray : Home Insulation</u>
<p>Project Aim:</p> <p>To work with families, individuals and the fuel poor in targeted districts of the Moray Council area to improve the energy ratings of homes and reduce carbon emissions.</p> <p>Working in close partnership with ESSac and Moray Council (see attached letters). our targeted outcomes will be:</p> <ul style="list-style-type: none">✓ 144 homes will introduce home insulation measures saving 47 metric tonnes of CO₂ annually✓ 170 households will receive an energy audit agreeing their energy saving strategies.✓ Energy advice sessions & workshops will produce 200 pledges of behavioural change totalling 5 metric tonnes of CO₂.✓ Work closely with 6 households to produce detailed case studies of their progress and experiences over the 12 months.✓ 500 individuals will attend our advice sessions, events and seek general energy advice.✓ 6 Schools will introduce an energy saving measure eg buying energy efficient appliances, fitting low energy lighting, eating locally sourced food, reduce waste, reduce car use during the 'school run' saving an estimated 5 metric tonnes of CO₂ per school.
<u>Strand 2) Power to the People: Solar Community</u>
<p>Project Aim:</p> <p>To provide a turnkey approach to the supply and installation of 161 competitively priced solar panel systems to homes and community buildings throughout the Moray region (See Fig 4) displacing on average 950kgs of CO₂ per installation annually and increasing the usage of renewable energy while saving local consumers annually at least 20% in capital cost and 10% in annual energy bills.</p> <p>Our targeted outcomes will be:</p> <ul style="list-style-type: none">✓ Install solar thermal panels in 161 homes in Moray saving 150 metric tonnes of CO₂ annually.✓ Negotiate a 20% reduction in cost for the supply and fitting of solar thermal panels to homes✓ Reduce energy consumption in 161 households by 10% annually through the

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- installation of solar thermal heating
- ✓ Organise an exhibition of renewable energy technology in Moray securing 500 visitors and 50 appointments to carryout home audits for solar thermal heating panels.
- ✓ Run monthly seminars and workshops throughout Moray promoting solar thermal heating attracting 500 visitors and 50 appointments to carryout home audits for solar thermal heating panels.

Strand 3: Energy Action Moray: Community Energy

Project Aim:

To research, report and implement energy strategies within community buildings throughout Moray local council area to reduce carbon emissions, to use renewable energy and to use these interventions to also develop district heating and energy systems for the wider benefit of the local community.

Our targeted outcomes will be:

- ✓ An end of project report will be produced for public consumption clearly setting out steps to be taken in planning and implementing energy efficiency measures, the use of renewable energy technology and the use of district heating systems in relation to rural community buildings and surrounding homes. The report will list sources of advice, funding and the supply of technology and materials as well as quantify achievable carbon emissions*.
- ✓ The formal buy-in of established agencies working in this area to develop a collaborative approach and partnership to district heating in rural areas of Moray
- ✓ 3 village halls will work with REAP to develop case studies related to the implementation of district heating systems using renewable energy.

We propose employing a part time Project Officer to :-

- Research the concept
- Network with communities and relevant agencies
- Identify opportunities and sources of finance
- Develop partnerships and agreement among stakeholders on a strategic way forward
- Enable 3 communities in Moray to develop a proposal to reduce the CO₂ emissions of their community buildings through improved insulation and the use of renewable energy, and to plan a district heating system.
- Analyse and quantify estimated carbon emissions from proposed schemes.
- Produce an end of project report that can be used by communities throughout Scotland to further develop this concept and access funding.

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Headline achievements
<p>In less than ONE YEAR we exceeded our targets:</p> <p>Saved 232.1 metric tonnes of carbon (target 214) providing an annual legacy of 137.3 metric tonnes.</p> <p>(Note: our targets were based on a 12 month operating period. Therefore to compare like with like our outcomes are also based on a 12 month operating period.)</p> <p>Our activities resulted in :-</p> <p>156 homes have been insulated (target 144)</p> <p>Our activities led to the installation of up to 80 solar panels throughout Moray (target 160)</p> <p>1000 Moray householders were spoken to regarding the use of solar panels</p> <p>322 Moray homes were surveyed by REAP for the supply of solar panels</p> <p>38 energy advice sessions/workshops were held</p> <p>630 individuals got one to one energy advice</p>
<p>All staff recruited by late April.</p> <p>Basic training complete by mid May.</p>
<p>6 new staff were recruited and trained by May 2011 in giving energy advice in total, 3 trained in surveying houses for solar panels – thermal and PV, 1 in the use of thermal imaging camera and 1 in the use of renewable technologies.</p> <p>13 schools took up our offer to run energy advice workshops. Original target was 6.</p> <p>28 community halls engaged with our community energy project</p> <p>3 halls installed solar panels</p> <p>Published a practical guide to energy use in community halls that has been circulated to 400 groups and individuals in Moray</p> <p>30 newspaper articles were published on Energy Action Moray including some front page coverage</p> <p>Market research was carried out with 223 householders on their attitudes to the use of solar panels. REAP achieved an 80% satisfaction rating.</p> <p>A free phone helpline was established for energy advice.</p> <p>250 people used our free phone energy advice line.</p> <p>743 people visited our drop in advice centre in Keith</p> <p>A new, enhanced web site was established.</p> <p>A variety of marketing materials were developed and circulated around Moray</p> <p>4000 homes were mailed by ESSac in partnership with REAP promoting home insulation</p> <p>Produced a user-friendly guide for community buildings on energy saving and renewables</p> <p>http://www.reapscotland.org.uk/wp-content/uploads/downloads/2012/03/Energising-Community-Halls.pdf</p> <p>A Community Assets Seminar was held attended by 50 delegates to assess the benefits of renewable energy technology for community buildings.</p> <p>http://www.reapscotland.org.uk/sustainable-solutions-to-community-assets/</p> <p>Successful working partnerships were developed with Moray Council, Grampian Housing and AES Solar</p> <p>REAP founded the Moray Fuel Poverty Forum</p> <p>51 Moray schools have contacted REAP wanting to take part in further energy</p>

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projects.
Outputs
<p>156 homes have been insulated (target 144) the installation of 80 solar panels throughout Moray</p> <p>Saved 232.1 metric tonnes of carbon (target 214) 6 new staff were recruited and trained by May 2011 in giving energy advice in total, 3 trained in surveys houses for solar panels – thermal and PV, 1 in the use of thermal imaging camera and 1 in the use of renewable technologies. Enabled 3 halls to install solar panels Enabled 7 halls to install insulation Enabled 2 golf clubs to install solar panels Produced a user-friendly guide for community buildings on energy saving and renewables http://www.reapscotland.org.uk/wp-content/uploads/downloads/2012/03/Energising-Community-Halls.pdf Launched the guide in conjunction with a community solar panel project http://www.reapscotland.org.uk/new-community-energy-guide-available-now/ 743 people visited our drop in advice centre in Keith 250 people used our free phone energy advice line.</p> <p>Events and Awareness Raising 38 energy advice sessions, workshops and other events over the year have reached 630 individuals, <u>well in excess of our 500 people target</u>. Our staff have delivered resources to all these people including many leaflets devised by ourselves. Many of these people have pledged to save carbon or have undertaken energy saving measures. Meeting and exceeding our targets has been a result of hard work and effective marketing of our services, including web, leaflets and stall furniture.</p> <p>Schools In a ringing endorsement of our work, over double the original target number of schools have taken advantage of our energy saving workshops (13) reaching a total of 601 schools pupils of all ages throughout Moray. Our Energy Busters programme, devised by our staff has been praised – and envied by schools that didn't get a chance to take part. Over 90% of schools in Moray have contacted us to confirm that they would be keen to take part in further energy workshops and practical actions.</p> <p>Additional Work Draught Proofing Snakes – This was an additional community project that came about following REAP staff promoting the making and using of draught busting snakes. Voluntary Action Moray took control of the project and are continuing to run with it.</p> <p>Energy Saving RAP – This was an opportunity to work with young people on their terms. They embraced the challenge of writing lyrics and performing an eco- rap with help from a musician. It has strengthened an existing relationship with Elgin Youth Café, broadened the involvement in our project, and has shown that the arts are an attractive education medium for young people. Further funding opportunities are being explored to continue this activity.</p>

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Watch the rap on Youtube:

http://www.youtube.com/watch?v=GiVJZiA6V_c&feature=youtube_gdata

Schools – Our schools work has been praised by all the participating schools. Moray Council Energy Officers have called on our services to enhance the work they do in schools and we have invited them to our schools events to share our good practice. Figures for carbon savings collected by the Council show that there are good carbon savings to be made in schools. Evidence from CIFAL shows that school teachers lack confidence, time and materials to deliver the curriculum for excellence in the Energy topic. We are seeking funding to continue our effective and highly praised work in this area.

Renewable Energy Partnership working

As the result of links made through our CCF work, REAP is working on a project to link village halls and groups up with Grampian Housing Association, who wish to investigate joint ventures with such groups, to their mutual benefit. As financial help is one of the barriers identified to groups taking projects forward, this partnership could be very helpful to communities working on renewable ideas.

Outcomes

Carbon Savings

For our Carbon savings we are using the following figures for actions taken as follows:

Total Carbon saved for a **12 month period** through this project are as follows:

Pledges	21.6 tonnes CO2
Carillion referrals completed	24.2 tonnes CO2
Carillion referrals awaiting tbc by June 2012	16.4 tonnes CO2
Energy Advice Events	10.4 tonnes CO2
Enquiries and energy advice	26.9 tonnes CO2
Home Energy Check clients	8.8 tonnes CO2
Schools work	17.5 tonnes CO2
Community Halls	9.6 tonnes CO2
Solar panel installations	<u>96.7 tonnes CO2</u>
TOTAL Actual	232.1 metric tonnes CO2
TOTAL Project Target	214 metric tonnes CO2

Outcomes for April 2011 – March 2012

TOTAL Actual	148.3 metric tonnes CO2
TOTAL Target	142.7 metric tonnes CO2

Legacy

Carillion referrals completed	24.2 tonnes CO2 x 10 years = 242
Carillion referrals awaiting tbc by June 2012	16.4 tonnes CO2 x 10 years = 164
Enquiries and energy advice	26.9 tonnes CO2 x 10 years = 269
Solar panel installations	<u>96.7 tonnes CO2 x 25 years = 2417.5</u>
Total Legacy	<u>3092.5 tonnes CO2</u>

Per annum

Solar panel	1188kgs
Virgin loft	720kgs

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Top-up loft 220kgs (double the 110kgs figure as most of our lofts top up from 1-2 inches to 12 inches)
 Cavity Wall Insulation 550kgs
 Replacing a G rated boiler with and A rated one 1,220kgs
 Hot water cylinder jacket 170kgs
 Draughtproofing one external door 50kgs
 TV Powerdown meter usage 60kgs (switched on Edinburgh figures : <http://www.switchedonedinburgh.org.uk/ideas/claim-your-free-tv-powerdown>)

The details of our carbon savings are as follows:

Pledges

Total number of pledges received from energy advice sessions and events:

Date	action	carbon	discussed	pledged
April 11 – June 11	Turn down thermostat by 1 degree		2	1
	Draft proof 1 outside door		2	3
	Check appliances are A rated		1	1
	Draw curtains at night, tuck behind		1	1
	Install cavity wall insulation @ 550kgs	550kgs	1	1
	Install loft insulation @ 720kgs	720kgs	2	1
	Top up loft @ 220kgs	220kgs	1	1
	Install underfloor insulation		0	0
	Replace inefficient boiler @ 1,220kgs	1,220kgs	2	1
	Replace light bulbs		2	1
	Turn off standby		1	1
	Check how much you are paying on your		1	0

Total number = 12. Total Carbon pledged = 2.7tonnes CO2

Date	action	carbon	discussed	pledged
July 11 – Sept 11	Turn down thermostat by 1 degree (10% of		6	2
	Draft proof 1 outside door		4	1
	Check appliances are A rated		3	1
	Draw curtains at night, tuck behind		4	2
	Install cavity wall insulation @ 550kgs	550kgs	2	1
	Install loft insulation @ 720kgs	720kgs	2	1
	Top up loft @ 220kgs	660kgs	2	3
	Install underfloor insulation		2	1
	Replace inefficient boiler @ 1,220kgs	1,220kgs	5	1
	Replace light bulbs		6	5
	Turn off standby		3	5
	Check how much you are paying on your		7	2

Total number pledged = 25. Total carbon saved = 3.2 tonnes

Date	action	carbon	discussed	pledged
Oct 11 – Dec 11	Turn down thermostat by 1 degree		1	0
	Draft proof 1 outside door		2	1
	Check appliances are A rated		0	1
	Draw curtains at night, tuck behind radiators		3	0
	Install cavity wall insulation @ 550kgs	550kgs	3	1
	Install loft insulation @ 720kgs	720kgs	3	1
	Top up loft @ 220kgs	220kgs	2	1

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	Install underfloor insulation		0	0
	Replace inefficient boiler @ 1,220kgs		2	0
	Replace light bulbs		1	3
	Turn off standby		1	3
	Check how much you are paying on your		1	0

Total number pledged = 11. Total Carbon saved from above = 14.9 tonnes

Date	action	carbon	discussed	pledged
Jan – Mar 12	Turn down thermostat by 1 degree		3	0
	Draft proof 1 outside door		1	0
	Check appliances are A rated		0	0
	Draw curtains at night, tuck behind radiators		0	5
	Install cavity wall insulation @ 550kgs		1	0
	Install loft insulation @ 720kgs		0	0
	Top up loft @ 220kgs	880kgs	6	4
	Install underfloor insulation		1	0
	Replace inefficient boiler @ 1,220kgs		1	0
	Replace light bulbs		1	1
	Turn off standby		10	8
	Check how much you are paying on your		10	10

Total Pledges = 28. Total carbon = 880kgs CO2

Total carbon from pledges = **21.68 tonnes CO2**

Home visits

The following people were the baseline referrals for our 6 Case Studies. Each person contacted REAP through phoning into the office after seeing our services advertised or attending our events. Each person visited had one or two phone calls and at least one home visit

Date	Name and area	Actions taken	Carbon saved
Sept 2011	Mrs McPherson Elgin	Energy Advice Dampness and condensation, high fuel bills. Can't afford to put heating on. Reap liased with Moray Council and tenant now on heating upgrade list from electric to gas	
Sep 2011	Mrs Harley Keith	Energy Advice Dampness problems in bedrooms	
Nov 2011	Mrs Sutherland	Energy Advice Heating controls demonstration	
Nov 2011	Mr W McGregor Elgin	Home Energy Check Completed Energy Efficiency Advice	Recorded through Home Energy Checks
Nov 2011	Mr Christie Wardend Place, Elgin	Home Energy Check completed Energy Efficiency advice	Recorded through Home Energy Checks
Nov 2011	Mr George Knight Elgin	Energy Advice Install energy monitor to clients meter to monitor energy use	Recorded through Carillion referrals

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Nov 2011	Mrs Woods Elgin	Energy Advice Install energy monitor to clients meter to record energy use	Recorded through Carillion referrals
Jan 2012	Mrs Henderson Keith	Energy Advice and Home energy Check completed	Recorded through Home Energy Checks
Jan 2012	Mrs Campbell Lossiemouth	Refer from Darby and Joan club talk. Meter advice, fuel bills issues, supplier communication	
Feb 2012	Mrs Jessie Gauld Lossiemouth	Energy Advice Bedrooms very cold, but cavity wall insulation and loft insulation have already been installed	
Feb 2012	Mrs Lesley Bain Elgin	Energy Advice Reap organised a New A plus energy rated fridge from Hydro Electric to the client	G rated fridge upgraded to A rated appliance
March 2012	Mr I McConnachie Keith	Energy Advice Install energy monitor to clients meter to record energy use	Recorded through Carillion referrals
March 2012	Mr Bain Keith	Energy Advice Install energy monitor to clients meter to record energy use	Recorded through Carillion referrals
Mar 2012	Mrs McBean Forres	Energy Advice Install energy monitor to clients meter to record energy use	Recorded through Carillion referrals
Mar 2012	Mrs McIntosh Keith	Energy Advice Help with EAP application, return visit to re-apply as app went missing in Essac's department	

Carillion referrals action table

After a competitive tender Carillion were appointed as our partner to deliver home insulation services.

In total, during the whole of the project, **287** people were referred to Carillion. **210** of those contacted could have no further action taken as their lofts were already insulated or cavity walls filled, or they live in a 'hard-to-treat' home and could not afford to insulate. This shows that many of the easier energy saving measures have already been achieved. Many of the properties left are going to prove a challenge for energy saving projects and their funders, as these measures will be labour-intensive and expensive. Carbon results from the **77** properties resulting in action by Carillion are as follows

Date	Loft (virgin) insulation	Loft top ups @ 220kgs	Cavity wall insulation	Draught proofing	OWL /other	Carbon Saved

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	@ 720kgs		@ 550kgs			
1/10/11 – 31/12/11	11 virgin lofts	4 top ups	4		1 hot water jacket insulated @ 170kgs	11x 720 = 7920 4x 220 = 880 4 x 550 = 2,200 1x 170 Total = 11,170kgs CO2
1/1/12 – 31/3/12	11 virgin lofts	8 top up lofts	6	16 loft hatches draught proofed	6 OWL monitors delivered	11x 720 = 7920 8 x 220 = 1760 6 x 550 = 3300 Total = 12,980kgs CO2
Expected 1/4/12 – 31/6/12	18 virgin lofts waiting	16 top up lofts waiting		8 awaiting loft draught proofing		18x720 = 12,960 16x 220 = 3,520 total = 16,480kgs CO2
Total	40	28	10	24	1	40,630kgs CO2

Energy Advice Events

A total of **630** people attended **38** events throughout the year. Some of the actions taken are captured in the pledges table, but others are difficult to calculate. Here we have simply claimed carbon for the TV power down meters we have given to people with full instructions. It is safe to assume that many other actions have been taken as a result of our advice so we feel this is an underestimation of our carbon savings.

The total saved is

10.4 tonnes CO2

Date	Event	Numbers	Actions – power downs	Actions	Carbon saved
25/5/11	BALL group Elgin TH	10	3	General advice	
28/5/11	REAP Launch	34	10	General advice	
2/6/11	Roths Library Families Week Session	2			
Date	Event	Numbers	Actions –	Actions	Carbon

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			power downs		saved
30/6/11	Lynnburn Centre, Roths	15	4	General advice, referring for insulation surveys, referral to ESSAC	First quarter = 17 x 60 = 1,020kgs CO2
13/7/11	Speyside High School, Aberlour Eco Day	6	3	HEC's filled in general advice	
7/8/11	Aberlour Highland Games	58	15	HEC's filled in, general advice	
8/8/11	Keith Show stand	31	9	General advice	
5/9/11	Aberlour Library	8	4	HEC's filled in, insulation advice, surveys from Carillion	
8/9/11	Roths Library	2	1	Advice	
15/9/11	Craigellachie Hall	4	2	Advice	
16/9/11	Advice Session Cornerstone Tennants New Elgin	3	5	General advice, referrals	
22/9/11	Youth Engagement Project Elgin Youth Cafe	7		ECO-RAP	
28/9/11	Fuel Poverty Forum Forres	18		Talk, advice	
30/9/11	Advice Session Quarriers Carers Elgin	1	1	advice	Second quarter = 40 x 60 = 2,400kgs CO2
5/10/11	Lhanbryde Community Centre	3	1	Advice and referrals	
7/10/11	ASDA Elgin Eco Week	10	4	Advice and referrals	
Date	Event	Numbers	Actions – power downs	Actions	Carbon saved
10/10/11	Elgin Town Hall Worried about Winter	31	7	Advice, referrals, appliance running costs	
13/10/11	Keith Moray	2	1	Referral and	

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	Council Service Point			HEC	
21/10/11	New Elgin Hall	4	2	advice	
25/10/11	Talk to Quarriers Aberlour	8	8	Thermal camera survey, advice	
29/10/11	Plainstones Elgin stall	90	25	Referrals HECs advice	
9/11/11	Linkwood Medical Centre Elgin	4	1	Referral, advice	
15/11/11	Sheltered Housing Forres, Leys Road	20	20	Referrals, advice, activities	
16/11/11	Edinville WRI	35		Talk, quiz advice, 2 referrals	
21/11/11	Elgin Town Hall - BALL group AGM	15		Temperature cards	
1/12/11	Tomintoul Winter Event	20	3	Activities, referrals, advice,	
8/12/11	St Giles Centre Elgin	5	2	advice	
15/12/11	Earthtime Event Lhanbryde	1		Solar survey	Third quarter = 74 x 60 = 1,020kgs CO2
10/1/12	Derby and Joan Club Lossiemouth	50		50 Temperature cards, home visits, advice	
19/1/12	REAP office open day	2	1	advice	
2/2/12	Lossiemouth Library	24	8	Referrals, advice, insulation info,	
Date	Event	Numbers	Actions – power downs	Actions	Carbon saved
8/2/12	Elgin Library Energy Advice	3	2	Insulation advice, draught proofing advice, referrals	
16/2/12	Forres Energy Advice Session	12	5	Wall insulation	

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				advice, EAP advice	
20/2/12	Voluntary Action Moray stand	?			
6/3/12	Hopeman BALL group	40	15	Insulation advice, pledges	
12/3/12	Moray College sustainability Day	12		leaflets	
13/3/12	Lhanbryde BALL group	28	9	35 temperature cards, leaflets, draught proofing advice	
16/3/12	Dufftown Solar Panels Launch and community energy event	12	2		Last quarter = 42 x 60 = 3,600kgs CO2
totals	38 events	630	173		173 x 60kgs each = 10,380kgs

Home Energy Checks

At the start of the project, REAP worked with ESSAC to fill in Home Energy Checks with people in areas targeted both for fuel poverty and lack of much previous action by energy saving groups. For around 4 months, REAP trialled a system whereby people contacted REAP after various awareness raising activities and were then referred by REAP to ESSAC after conducting a home energy check and giving energy saving advice. We found that ESSAC had mislaid some of the forms and ultimately we changed our system to refer people directly to Carillion. However, on conducting a sample survey of **10 people from the 64 HEC forms** we have on our records we found the following results:

Date	Loft insulation	Loft top ups	Carbon Saved
June		1	220kgs
July		1	220kgs
August	1		720kgs
November		1	220kgs
total			1,380kgs

Multiplying these figures across the 64 forms we can claim the following carbon for this element of the project:

Carbon from 10 sample HECs = 1380 x 6.4 (to achieve 64) = **8.83 tonnes CO2**

Enquiries and energy advice

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Ongoing enquiries throughout the project through our freephone helpline and general office enquiries resulted in referrals to Carillion, but also **190 other enquiries** which generated **144** records of detailed energy saving advice. A sample group of these 144 people were telephoned. Of twenty four people contacted, 8 had achieved the following results:

Date	Loft insulation @ 720kgs	Loft top ups @ 220 kgs	Internal wall insulation @ 1,800kgs	Replaced boiler @ 1,220kgs	Carbon Saved
Oct 2011		1 (220kgs)			220kgs
Dec 2011	2 (1440kgs)	2 (440kgs)		1 (1,220kgs)	3,100kgs
April 2012	1 (720kgs)		1 (450kgs – 1 wall)		1,170kgs
total	3	3	1	1	4,490 kgs

We have not claimed for any behavioural change in these figures, but we know from some people we have contacted that many are now using energy monitors and changing their behaviour to save energy. This is difficult to quantify. Multiplying the sample we do have evidence for across the full number of 144 people, we estimate to have achieved the following carbon savings from this part of our project:

Total carbon saved from 24 people = 4490 x 6 (to estimate for 144 forms) = **26.9 tonnes CO2**

Schools

As our project is only for one year and it does not fit in with the monitoring period by the Moray Council Energy Officer who has been very supporting of our project, the following figures are estimated. As with the other tables, many of the carbon savings from our actions and activities in schools and in the pupil's home remain unrecorded. We are claiming a reduction of 5% on the heating bills for the schools that took part in the Energy Busters Project only. This takes the figures provided by Moray Council of the actual CO2 emissions per school for 2011 and assumes a 5% reduction from the date of our workshop, evidenced from figures that show a 10% saving on heating bills where heating is turned down by 1 degree and allowing for slippage and the fact that electricity use is included in the school figures for CO2. Many of the school children made pledges to turn off their computers and televisions off standby etc. One child even pledged to insulate their loft! (We haven't counted the carbon for this – or any of the pledges received, although carbon will have been saved in this way). The total carbon saved is estimated at

17.5 tonnes CO2

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Date	School	Total kids	No of kids at workshops	actions		
22.10.11	Roths	30	30 for workshop	Making solar ovens	Leaflet to 140 kids	
24.10.11	New Elgin – total CO2 emissions 2011 = 150 tonnes. 5% saving = 7.5 tonnes	20	20 for workshop,	Energy Busters whole school temperature cards	Monitoring heat loss, lighting, appliances, draughts blinds, clothing within a 4 week period	Trip with Wild Things to review actions
24.10.11	Roths – total CO2 emissions 2011 = 60 tonnes. 5% saving = 3 tonnes	24	24 kids for workshop	As Above	As above	As above
25.10.11	Lhanbryde – total CO2 emissions 2011 = 131 tonnes. 5% saving = 6.5 tonnes	25	25 kids for workshop	As above	As above	As above
Date	School	Total kids	No of kids	actions		
27.10.11	Craigellachie total CO2 emissions 2011 = 30 tonnes. 5% saving = 1.5 tonnes	27	27 kids for workshop	As above	As above	As above
32.11.11	St Gerardine's Lossiemouth	109		Primary 1-2 energy awareness and songs P6-7 x 2 carbon footprinting		
24.11.11	Speyside HS	15	Science	Eco-	Advice and	Temp.

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			Class S2-3	consultation	homework – heat loss, energy in home, house design etc	cards
30.11.11	Speyside HS	15	As above	Eco- consultation	As above	As above
1.12.11	Tomintoul	8		Eco committee visit to Energy Awareness day to make snakes	8 draught proofing snakes made for home	
1.12.11	Tomnitoul	25	P5-7	Energy Session awareness, Eco house		25 Temp. cards
14.12.11	Greenwards Elgin	50	2 x P7	Energy Session awareness, Eco house		50 Temp. cards
Date	School	Total kids	No of kids	actions		
1.2.12	Mortlach Dufftown	52	P5, P6, plus 2 eco- committee members	Energy Session awareness, eco house		52 Temp. cards
9.2.12	Botriphnie, Drummuir, Keith	21	P4-7	Energy Session awareness, eco house		21 temp. cards
9.2.12	Speyside HS	29	S3 x 2 classes physics classes	Thermography demo, tour of school to check draughts, insulation info		
1.3.12	Keith Grammar	16	S3 physics class	Thermography demo, tour of school to check draughts, insulation info and quiz		3 temp cards
2.3.12	Keith Grammar	19	S3 physics class	Thermography demo, tour of school to		3 temp cards

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				check draughts, insulation info and quiz		
19.3.12	Andersons Forres	25	P1-7	Eco-master class		
22.3.12	East End Elgin	91	P1-5	Eco-day focussing on energy		
totals	13	601				

Solar team actions

Whilst carrying out solar surveys, REAP staff have given energy saving advice to clients as well, and this resulted in the following actions being taken as follows:

Date	Loft insulation @ 720kgs CO2	Loft top ups @ 220 kgs CO2	House Draught-proofed@ 220kgs CO2	Carbon Saved
June – July 2011		3		660kgs
Aug 2011		4	1	1100kgs
total				1760kgs CO2

Community Halls

Activity completed by March 2012	CO2 per action completed	CO2 Savings claimed
6 community halls and buildings insulated	1,250kgs	7,500kgs
Secondary glazing installed x 1		400kgs
New efficient gas boiler installed x 1	1,260kgs	1,260kgs
188 miles travelled by electric bike instead of car	0.4kgs/mile	75kgs
TOTAL		9.23 tonnes

The three halls that have installed solar PV panels will each save 1.2 tonnes of CO2 per annum from the start of March 2012. This figure of 3.6 tonnes of CO2 has been added to the solar project carbon totals

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Learning & reflection

Lessons Learned

- Over the year of the project the busiest time has been the winter period. Cold weather makes people think about insulation and trying to keep bills low. Behaviour change with actions like only boiling a small amount in the kettle, washing at 30 degrees and checking the energy rating on your fridge is notoriously difficult to achieve and monitor, but some people we have contacted as part of our project review have taken changes on board.
- Work with our two main partners on this project has had some problems. At first we planned to conduct Home Energy Checks and referrals through ESSAC, but several forms being mislaid and computer problems at ESSAC, combined with a significant proportion of contacts being Moray Council tenants led to us setting up an arrangement with Moray Council and large insulation firm Carillion.
- However, Carillion have been very slow at carrying out surveys. They have also not been managing to meet their own deadlines with regard to contacting customers and completing works. This has been difficult to manage at times and led to clients cancelling and going elsewhere. Things have improved towards the end of the project, but new problems arose around delivering energy monitors, draught proofing doors and faults in the spreadsheets.
- Problems in communications between Moray Council and Carillion over CERT funding which led to significant delays have been resolved and meetings and communications have been held with Moray Council managers and staff to ensure a smooth exit to our joint project and continuity for council tenants. This is why we are confident that the remaining actions for which houses have been surveyed by Carillion will be undertaken by June 2012.
- As stated above, 73% of the properties surveyed by Carillion resulted in no action being taken. Many of these properties are up to the required standard or are hard to treat homes and present the challenge for future energy saving projects in Moray.
- It was not productive for us to complete and send HECs via Essac. There was a delay in receiving information back from them and this held up the referrals for survey. However, revisiting the HECs as part of our review has shown further carbon savings for the project
- From experience of organising events ourselves, it has become apparent that it is more fruitful to go to where the people are, rather than to organise something stand alone. We have received the most contact with people at

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large public events with a lot of footfall and also by attending large group meetings such as the BALL groups and WRI meetings.

- REAP have built up a wealth of experience, knowledge and expertise through this project. Our staff are well trained, efficient and helpful to a standard well beyond the levels that even their training has equipped them for. All members of staff have worked and learned together as part of a team that it has been a privilege to work in and which has delivered a very effective project for REAP and our funders.
- To date we have completed solar panel **322** surveys out of that we have converted into **80** installations. The conversion rate was lower than hoped:
 - 1) The recession reduced householders spending capacity
In our advertising we promoted a discount percentage 20% for PV and 40% discount for Solar Thermal. We promoted like this until the 13th November 2011. We found that we created a lot of contacts but had a poor up take of installation. During January and February 2012 we promoted the project with real prices, we created less contacts but those we created were more likely to continue to install panels.
 - 2) UK Energy Minister announced in October 2011, that there would be a 50% cut to the Feed-in-tariff on solar PV, this through the solar PV market into some confusion. Our installers could only do a set amount of installation in the period between the announcement and the cut-off date. After the 13th November 2012 and up to the 3rd March there was further confusion due to a court decision that stated the government made the announcement unlawfully and the government tried to appeal the decision but was turned down by the Supreme Court.

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Supporting information

- **Financial information** – see attached spreadsheet
- **Case studies** –

Ground Mounted solar panel system



<http://www.reapscotland.org.uk/ground-mounted-solar-pv-system/>

Solar energy – even in winter in northern Scotland!

<http://www.reapscotland.org.uk/solar-pv-panels-perform-well-even-in-winter/>



Dufftown Community hall invests in solar energy

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<http://www.reapscotland.org.uk/dufftown-invests-in-community-energy/>

Rappers create cool sound

<http://www.reapscotland.org.uk/eco-rappers-create-cool-sound/>

Snakes at the door!

<http://www.reapscotland.org.uk/snakes-at-the-door/>

Gaps in your walls!

<http://www.reapscotland.org.uk/whats-in-your-walls/>

TAP TEN TIPS FOR SAVIN SILLER!

<http://www.reapscotland.org.uk/tap-ten-tips-for-savin-siller/>

Summer Fair

<http://www.reapscotland.org.uk/fun-fruit-and-sunshine-in-speyside/>

- **Photos, graphs, pictures**



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Thermal Image!



REAP 2011



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Solar Panel Contractors



REAP Community Asset Seminar: Keith



Ann Davidson of REAP on her electric bike



Children at Tomintoul with homemade draught excluders



REAP's Lynne Laing shows pupils how the thermal imaging camera can detect heat loss.



Pupils at Rothes Primary learn about solar heat

- **Examples of materials which you have created – newsletters, packs**

reap SCOTLAND

Energy advice line:
 Freephone (from landline)
0800 085 4008
 Text "Call" to 07553202372
 Email insulation@reapscotland.org.uk
www.reapscotland.org.uk

°C	°F	ADVICE
27	80	HOT
24	75	REDUCE HEAT BUT STAY WARM
21	70	COMFORTABLE
18	65	DO NOT ADJUST YOUR HEATING
15	60	COOL TURN HEATING UP
12	55	COLD
9	50	DANGER OF HYPOTHERMIA

32°F

reap SCOTLAND

STAY WARM • SAVE HEAT • SAVE ENERGY

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REAP SCOTLAND

Win/Win with Solar PV Panels!!

REAP Scotland's Community Solar Panel Project is committed to bringing best value to householders in Moray, Nairn & Huntly for solar panels. In order to help householders reduce their energy bills, together with our local partners - AES of Forres - we have negotiated further reductions in prices for Solar PV panels. This makes PV more affordable and is still a very good investment.

For a free no obligation survey contact REAP on 01542 880200 Email solar@reapscotland.org.uk or www.reapscotland.org.uk

We use 250Wp panels where possible, fully MCS certified, 10 years warranted and rigorously tested prior to installation. We use fully trained local surveyors and installers, and provide on-going expert local advice and support to householders on all their present and future energy needs.

Prices for REAP Scotland Community panels are;

2.0kWp:	£8,820.00	2.5kWp:	£7,630.00	3.0kWp:	£8,430.00
3.5kWp:	£9,140.00	4.0kWp:	£10,160.00		

Prices are for our standard fully installed and commissioned systems and include 5% VAT. Also included is local comprehensive assistance with completing all required documentation.

REAP works in the North East of Scotland to encourage social enterprise, promote sustainable development and raise environmental awareness. REAP is a company limited by guarantee (No. 004880) and an equalised charity (No. 210739801).

connecting people to energy solutions
eam ENERGY ACTION MORAY

Community Solar Panel Project

"There has never been a better time to install renewable technologies"

up to 40% discount on Solar Thermal

up to 20% discount on Solar PV
*see reverse for discount details

We will carry out a **FREE Independent survey** of your property. This can be private housing, social housing, businesses or public buildings.

-
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- **Reports written for/about your project (particularly Feasibility Studies)**

Energising Community Halls

REAP guide on how to save energy and install renewable technologies in your community building

Ann Davidson, REAP Community Energy Officer

It's our future natural **REAP SCOTLAND**

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- <http://www.reapscotland.org.uk/wp-content/uploads/downloads/2012/03/Energising-Community-Halls.pdf>
- See attached Solar panel survey
- **Material from external organisations – testimonies, press coverage.**
<http://www.reapscotland.org.uk/press/>
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What Communities say about REAP

"REAP's Energy Officer identified that we were paying almost twice what we should be for our electricity by comparing our tariff with other groups. She also recommended that we get our roof insulated as a priority, told us how much it would save us and helped us with good value installers to get the work done. We will save at least £500 a year on our bills" **Brenda Cooper, Secretary, Craigellachie Hall**

"REAP's Energy Officer has really helped us keep going with our micro-hydro project. A few minutes of time from someone so knowledgeable is invaluable" **Alasdair Anderson, Margach Village Hall.**

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What People who've had Energy Advice say about REAP

"I applied for loft insulation in March of this year, despite 2 surveys (both doing the same thing) I heard nothing at all. I phoned Scottish Power several times but found them very unhelpful. I came into the REAP office on 4th October and spoke to Lynne who immediately phoned and arranged a loft survey for me that week!! The insulation was done 28th Nov and I am very pleased with the work. Thank you"

Kath Markland

"I think everyone should get in touch with REAP. I spoke to the REAP Home Insulation Officer and she has just saved me £120 on my energy bills! I can now leave my heating on a little longer in this cold weather. They are very very helpful and have also organised a free survey for loft insulation."

Ms Sandra Levy from Buckie

"REAP's Insulation Officer Barrie arranged everything for us and got the insulation company to come out and see if we could get any insulation in our loft. Barrie and the office staff at REAP were very helpful – we could pop into the office locally to answer our questions. We've now got our loft insulated for free and will be cosier for the winter"

Mr and Mrs Henderson from Keith

Name of report authors and date it was finalised:

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