

Final Project Report Form with Guidance Notes

Name of project, organisation and CCF number
Moray Junior Eco – Forum Park Ecovillage Trust 2409
Starting Point
Park Ecovillage Trust (PET) was incorporated on the 11 th February 2009 to provide a geographically based organisation for the Findhorn Ecovillage Community to apply for CCF and other similar funds.
Park Ecovillage Trust is a private company limited by guarantee and registered also as a charity in the UK. It was formed by members of the Findhorn Community to develop, deliver and support grass roots, non-corporate, community-based projects. PET is one of the many initiatives supported by the Findhorn Community, a long established Ecovillage which celebrated its 50 th birthday in 2012. The Findhorn Foundation/Community is an NGO to the United Nations, a training centre for the UNITAR Cifal international Ecovillage training programme in sustainability, ecovillage design; whole systems theory; permaculture and planet-friendly living. Findhorn is a living demonstration of a community intentionally engaged in reducing its carbon/ecological footprint and working with nature is one of the community's core principles.
<p>From 2010-2012 PET was the applicant organisation for the Findhorn EcoKit Project CCF 908 Sustainability Education and Carbon Reduction in Moray Schools and CCF 1221 Sustainability Education and Carbon Reduction in Scottish Schools.</p> <p>Through a partnership with Ekopia, our Community IPS, Duneland Ltd. and Moray Council PET has also launched a Community Housing Initiative.</p> <p>In 2012 PET received JCCF funding for the Moray Junior Eco-Forum. The idea was to bring together children from schools across Moray to create a young people's think-tank on environmental change, giving them an opportunity to manage a carbon saving initiative in their own communities and to run a carbon-reduction project of their own.</p> <p>The students would receive training in project and financial management and underpin enterprise, eco-school and carbon reduction initiatives already working well in Scottish schools.</p> <p>The project is a partnership with young people from Moray schools and an opportunity to pilot an approach to greater empowerment and youth-led initiatives in Scotland. It builds upon the trust of a shared relationship between Moray schools and the Findhorn Community and maintains the public profile of carbon reduction as a way to tackle climate</p>

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change and meet national targets.

The aim was to extend the great work achieved from previous projects by shifting the focus to child led carbon reducing initiatives. We aimed to provide a supportive environment to encourage empowerment, independence and confidence. The result would be confident carbon literate students running carbon reducing projects in their communities. The project would enable children to gain a deeper understanding of the issues concerning carbon footprint.

In order to secure the funding JCCF asked PET to adapt the original outcomes to more directly address their funding requirements. Here are the updated outcomes:

- CO2 Outcomes: Cut CO2 emissions by 40.6 tonnes per annum by working with the families of 201 Moray pupils to reduce their food waste by 25%
- Community Outcome 1: To improve the schools' community awareness and engagement in a low carbon future by managing the Food Waste Challenge component and their own initiative
- Community Outcome 2: To increase the work-based skills of the eco-reps taking part

Headline achievements

The Moray Junior Eco-Forum was a project run by and for primary children from several Moray schools by the Park Ecovillage Trust in the Findhorn Community. It was a unique experiment with funding from the Junior Climate Challenge Fund, to see if children as young as 9-12 years could initiate and manage their own carbon reducing projects in their schools' communities.

The children met in the Forum in the Findhorn Community from October 2012 – July 2013. They received training in project and financial management, group and team building and have been placed in positions of responsibility directing a 'Food Waste Challenge' in their local areas which they completed before Christmas. From the beginning of 2013 they researched into carbon saving initiatives that they could run themselves and this 'Big Idea' took place throughout May.

The 'Big Idea' was in the end two activities. Waste Less Wednesday was a campaign by the children to get their school and local families to identify, switch off and avoid using all non essential energy devices every Wednesday through May, to save money, energy and the planet. The 'Big Bag' idea targeted large stores in major Moray towns, with the children setting up their own campaign pitches and giving out 100% recycled nylon bags each made from three plastic bottles to members of the public to use instead of supermarket plastic bags. The schools ran a logo design challenge for the campaign, with the winners from each school being voted on by the Forum. The winning logo was a central motif of the children's campaign, used on the posters, leaflets and bags used in the 'Kids Take Action' campaign and events.

The Forum was made up of 2 eco-reps from each of 8 primary schools across Moray: Aberlour; Alves; Burghead; Findochty; Greenwards; Hopeman; St.Gerardine and

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St.Thomas. The eco committees in each of the schools supported the eco reps with their work and responsibilities. Schools have welcomed the project which continues to build upon the Eco-Schools' initiative.

The Moray Junior Eco-Forum was also unique in that head teachers viewed the experiential learning that takes place in the Findhorn Community, as being an example of a curriculum enriching activity, supporting deep learning and the Curriculum for Excellence's four capacities.

The Forum met once a month in school time, for two and a half hours. The children were transported to and from the Findhorn Community.

Findhorn's Park Ecovillage Trust 's project team are themselves teachers and scientists, with a background in sustainability education. The team worked with Moray Primary and Secondary schools through the Findhorn EcoKit project from September 2010 to March 2012 and developed the relationship with schools that has enabled this new model of interaction with a community provider to take place.

Highlights:

- To witness the eco reps over the course of the year increase their understanding of what reduces carbon and what doesn't
- To witness the eco reps over the course of the year grow in confidence and ability in carrying out projects
- The practical sessions of the eco - forum were great examples of experiential forms of learning. We approached the assimilation of project management skills and carbon literacy in creative ways. We invited Leslie the eco clown, we had tours of the Findhorn eco village, invited in community experts where appropriate. Collin Chamberlain the local community shop owner for example illustrated beautifully to the reps such things as profit margins, making difficult decisions and general business management of a sustainability aware enterprise.
- We facilitated group learning opportunities wherever possible encouraging the students to share wisdom and knowledge and ideas.
- The parliament trip was a great success and captured the overall essence of the project. The children were excited, and confident, and delivered their presentations to the MSPs and civil servants competently and enthusiastically. Duncan Easter observed that 'The MSPs took a real interest and they saw it as important work.'

Duncan Easter Technical Consultant's report

The Moray Junior Eco-Forum began three initiatives with the potential to save a total of

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8.65 tonnesCO₂e per in the course of a year. These were:

- The Food Waste Challenge:

4.96 tonnesCO₂e saved through reducing food waste in the homes of 60 pupils.

- Waste Less Wednesday:

0.72 tonnesCO₂e saved by reducing electricity usage in 7 Moray primary schools.

- The Big Bag Give Away:

2.97 tonnesCO₂e saved by persuading the public to use re-usable recycled bags.

Outputs

Duncan Easter Technician Consultant's report

The Food Waste Challenge (FWC) involved weighing the food waste produced by participating families. For the FWC food waste was defined as food that would normally have been thrown in the bin. Two measurements were made three weeks apart, each based on the food waste of a family gathered over the Tuesday, Wednesday and Thursday.

In addition to the FWC, the children of the Moray Junior Eco-Forum instigated two carbon reducing initiatives under their own steam. These were called Waste Less Wednesday (WLW) and the Big Bag Give Away (BBGA).

WLW involved the whole school in trying to minimise electricity usage on Wednesdays. OWL energy monitors with USB connection and software were installed in seven schools to provide children with direct access to electricity usage data. Appendix G shows the simplified instructions provided for the OWL monitor display module. The two other schools were Andersons (who had withdrawn by this stage of the project) and St. Gerardines.

The supply cables at St. Gerardines were too large to accept the OWL sensors, so 15 plug-in electricity meters were provided instead. Appendix H shows the pictorial manual create for the plug-in meters. It was hoped that these would be used to measure the power consumption of a variety of common school equipment, including operation and stand-by modes. Sharing this information with the other schools would inform and support their WLW efforts and link St. Gerardines into the schools using the OWL monitors.

The BBGA sought to reduce carbon emissions by persuading shoppers to make multiple use of bags made from recycled plastic bottles. The re-usable bags were printed on one



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side with the winning logo from a competition the children organised. The eight schools participating handed out 1,500 bags, chiefly at supermarkets local to the schools.

The rest of what our project did, the services we provided, the events we ran, etc. are detailed on the data CCF Data Collection Sheet

PLEASE SEE CLIMATE CHALLENGE FUND DATA COLLECTION SHEET

Outcomes

Chrisanthe Georgiou Education (Carbon Literacy) Consultant and Project Coordinator's report

Community Outcome 1: To improve the schools' community awareness and engagement in a low carbon future by managing the Food Waste Challenge component and their own initiative

Outcome met:

Food Waste Challenge (FW Challenge): Appendices 34-38

This carbon reducing project asked a lot of the children. Due to time constraints we launched it at the first eco-forum when the children were completely new to the project. We knew it would be challenging yet critical to the learning process. Even though the reps engaged 180 individuals, they struggled on the whole to encourage and motivate them.

They left the initial eco forum excited and enthused and raring to go but were disappointed and frustrated at how difficult it was for them to actually get a significant number of students and their families on board and to get them to hand in accurate data (Appendix 1 and Appendix 4 ~ 0.03 minutes in).

A positive outcome is that the reps learnt so much from this challenging process about what saves carbon and what does not and how to manage their own project with greater success, that overall the outcome was met (Appendix 19).

Initially 9 schools joined the project. Schools decided to target individual classes and one school decided to conduct the challenge with just the members of the eco committee. One school, 6 months into the project, decided to withdraw entirely. The reps had felt discouraged by what they interpreted as the target class's unenthusiastic attitude. Their eco coordinator also worked part time and had found it challenging to find the time needed to support the reps.

Big Bag Give Away (BBGA):

When asked many reps reported that the BBGA was a great success :

'It was a good experience for the children as they were sharing information with the public and raising awareness' Findochty primary

&

Ruori from Alves (Appendix 4, 3m.55s into the video)

Schools reported that the Big Bag Give Away was confidence and self esteem building and many volunteers offered help (Appendix 9).

Waste Less Wednesday (WLW):

Duncan visited schools. Firstly to establish if they could have energy monitors fitted and

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secondly to fit the monitors and provide training to the reps on how to use them.

Eight 'OWL+USB' energy monitors were installed in the eco-forum schools. They were installed to monitor power consumption of the entire school. Aberlour had two, the second measuring consumption of the school kitchen. Permission was obtained from the licensor to run multiple copies of the OWL software and this was installed on at least one computer in each school. One teacher was trained to use the equipment, with the exception of Burghead. This was due to unexpected staff absence and training was completed in due course.

A previous visit to St. Gerardine's had showed that this school was not able to be fitted with an 'OWL' because the cable size is too large even for the larger sensor. Instead, St. Gerardine's were supplied with 15 plugs in style energy meters to monitor and learn about the power consumption of individual electrical items.

There were many issues that arose with the equipment (see Duncan's report) which hindered the consistency and continuity needed to provide a stable environment from which the reps could gather data from their schools regarding energy consumption. Appendix 32 illustrates the challenges that some schools had in collecting data or having the opportunity to record it. In spite of this due to a great deal of support from the project team most reps had a good idea of what the monitors did, how they worked and on the whole made great efforts to encourage their schools to reduce energy consumption on Wednesdays.

The publicity generated by the project really helped the children's excitement and momentum in engaging with the project, whilst also spreading the word far and wide. There were many and varied ideas about how to publicise the project e.g. posters were put up at the Vue cinema in Inverness (Appendix 5, 1 & 8), leaflets were designed and printed, (Appendix 7), printed posters and hand made were displayed around schools and at supermarkets (Appendix 6 & 8), Moray Firth Radio interviews were given that advertised the carbon reducing initiatives and the trip to Edinburgh and there were articles in the Press and Journal (Appendix 20) and Northern Scott. The posters and leaflets direct the public to the website <http://parkecovillagetrust.co.uk> where they have an opportunity to learn more about the project and the organisations supporting it.

Overall there are many examples of the students and schools expressing the positive outcomes as a result of the reps managing the carbon reducing initiatives as evidenced by the following: Appendix 4 (1m.36s, 2m.10s, 4m.32s).

The feedback reports written mostly by the eco coordinators gave their perspective on the successes and challenges of the projects (Appendix 3). The summary of feedback (Appendix 9) also suggests strongly that the inclusion of the whole school for Big Ideas and logo competitions were motivating factors and that sharing learning and progress with other schools during the eco forums increased general motivation.

Sadly, due to the end of term busy schedules only half of the reps managed to attend the final eco forum. Of the 8 reps that were asked were asked if they had increased their knowledge about carbon and carbon reduction 75% said 'a lot more' and 25% said 'a bit

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more' (Appendix 15).

All schools were left with energy measuring either monitors or metres, approximately £200 of carbon reducing themed literature and information books, and eco gadgets and tools to use in their schools. This legacy we hope will encourage the continuation of the eco forum's good work.

Community Outcome 2: To increase the work-based skills of the eco-reps taking part

Outcome met:

The FW Challenge created the opportunity to begin teaching the children about carbon and carbon footprint and how to organise, manage and implement a project. We were keen for them to learn how to work out carbon reduction achieved by their schools so they could take ownership and responsibility for the project outcomes (Appendix 22).

The Big Bag Give Away was confidence and self esteem building and the reps and eco committee members on the whole carried out their tasks competently and effectively. The eco forums facilitated a shared learning with other schools and increased motivation (Appendix 17).

School visits by Chrisanthe and Sue reinforced the learning from the forums and they supported reps to carry out tasks and responsibilities. The project team provided a safe environment for the eco committees to generate ideas, ask questions and to take notes. These visits also provided opportunities to other children in the school and eco committees and were occasions to disseminate information to coordinators and heads thus widening the support network given to the students.

On the whole reps enjoyed the responsibility of running the projects and they appreciated the independence they had. They were left with a sense of achievement, confidence and raised self-esteem (Appendix 25 ~ Burghead eco rep approaches Tesco's for the BBGA project). They developed excellent communication skills and a shared responsibility for the use of energy in school (Appendix 12) and awareness of the larger issues involved in running projects. They discovered fun ways to save energy and learnt how to use valuable energy saving resources. Most reps ~ 75% of those who attended the final eco-forum, also learnt that the projects that were most fun did not necessarily achieve the best results in carbon reduction (Appendix 23).

The eco-forum members realised that to engage the whole school they needed to develop appropriate strategies. They came up with interesting and novel ideas e.g. all schools used new eco books about carbon reduction as resources to engage other classes (Appendix 11, 13, 14) and launched a school wide eco-forum logo competition. Burghead school designed award certificates for logo competition participants (Appendix 24).

The Parliament trip was a great success and created a lot of excitement, publicity and momentum in schools. It gave the forum an ideal opportunity to showcase its achievements and learnings. Please refer to the 'Moray Junior Eco-Forum Parliament Trip June 2013' DVD. Also see Appendices 25-29) that illustrate the preparatory work of the eco reps and youth ambassador.

Sue Clutterbuck: Education Development / School's Liaison Report

In the original application submitted to the Climate Challenge Fund (CCF), we had 5 Community Outcomes and following substantial changes to this application by CCF the Community Outcomes were reduced to 2.

Community Outcome 1:

To improve the schools' community awareness and engagement in a low carbon future by managing the Food Waste Challenge component and their own initiatives.

The Food Waste Challenge:

Outcome met:

The Food Waste Challenge replaced the Carbon Reduction Homework as the initial motivator to engage school communities and families with the project. It was the first test for the eco-reps to manage a mini-project in their schools that was not chosen by them to do, but initiated by the Findhorn Project team.

A national campaign on food waste 'Don't feed your Bin' had already introduced some awareness into local communities, but neither the eco-reps nor the Findhorn team had had experience before in running a food waste event.

The reception in schools to the Food Waste Challenge (FWC) was mixed. Eco reps were directed by the Findhorn team to target a P6 class or another class of a different age if this was not possible. Initially, eco-reps were asked to give the class teacher involved in the target class, a pair of scales with which to measure the food waste brought back in by the children, after 3 days of collecting it in their homes. Sue, as education liaison was then contacted by a number of teachers who were concerned about decaying food being brought back into schools and being handled by the eco-reps. On consideration of this presenting a live bio-hazard, schools were asked to ensure that families measured their food at home. St.Thomas Primary however, did have food waste brought into school and their eco-reps commented that this made the campaign in school very visible and they measured it in front of the class.

The down side was: 'It was very smelly! We couldn't throw the bags in the school bins, so our headteacher had to take them home in a black bag to go in his bins!'

At the second forum meeting and subsequently, the same comment that participating children hadn't liked the FWC because it had been smelly and yucky, was repeated as something that didn't help children and families to repeat the food waste challenge again.

Greenwards School commented that the FWC worked in their school because it was easy to get their eco-group to do the challenge. Alves School targeted their composite P4-P7 class (they are only a 2 class school), and got only 4 responses, of which only 1 did the challenge. This despite the eco-reps talking to the class and working hard to persuade others to join in.

Other eco reps reported slips not being brought back to school with the measurements on; due to names not being indicated on the report slips, participating children didn't fill in their names and so the eco-reps didn't know whose measurements belonged to who. This was important, because the second measurement could only be repeated by the same

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people that did the first measurement.

Several eco-reps reported that participating families had only 0g food waste, or that the dog ate the food before any measurements were taken and then it was decided that that was not a waste of food anyway.

Anecdotally, in the P6/7 class in Aberlour, where several children and families took part, an interesting class discussion also threw up that families were embarrassed by the amount of food they wasted and this challenge had highlighted that. Also, one girl said that she was used to filling her cereal bowl with food, only to leave half of it, on a regular habitual basis. After doing the FWC, she realised that she was not taking what she needed and changed her eating habits. Other stories back from schools also showed how families had been influenced by doing the FWC and had changed shopping and food preparation behaviours.

Despite the challenges of achieving accurate data and keeping people involved, 180 people were estimated to have taken part in the FWC, with 41kg of Co2e made as a carbon saving over 3 days. The FWC introduced the eco-reps in each school to the challenges of engaging people and retaining their ongoing participation in a project. They learnt a lot about running a mini-project e.g. they made posters that the eco-reps and committees put up around schools letting other classes know what was going on and why, they organised handing out and collecting in data, collating information and analysing it and public speaking.

The Eco-Forum managed to raise their schools' community awareness of how wasting food is linked to carbon emissions.

Community Outcome 2:

To increase the work-based skills of the Eco-Reps taking part

Outcome met:

Eco reps worked hard to administer this mini-project in their schools. There was a lot of planning; delegating of tasks amongst eco-committees; organising people including teaching staff; taking responsibility in a very public way as leaders of the initiative in their schools; working to deadlines which were shortened in some schools because of a limited time frame (Alves and Findochty Schools did not join in the Eco Forum until the second forum meeting- so their FWC began late).

Waste Less Wednesdays:

Community Outcome 1:

Outcome met:

Waste Less Wednesdays (WWs) and the Big Bag Giveaway (BBGA) were the two carbon reducing initiatives that came out of the Big Idea campaign that the children ran in their schools. These 2 initiatives were voted as the winners from the 3 ideas presented by each school in the Forum at Findhorn.

St.Thomas school built a home made robot out of recycled materials called Waste Less Wally, who delivered a message about switching off non-essential energy on Wednesdays during May, in schools and some schools invited families to do the same at home.

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To help measure the amount of carbon saving in each school two forms of energy measurement devices were used: the OWL monitor and energy meters.

Elsewhere in this report the technical challenges of these two measuring systems will be discussed.

From the education perspective the eco reps in each school were supposed to have been present when Duncan went in to train their school on how to make use of the OWL monitor, which was the most commonly used data gathering system (7 out of 8 schools used it). However, because we had asked schools if a teacher/eco-coordinator could also be present to receive the training, it transpired that some schools opted to do the training when the children weren't available i.e. after school.

The software programme and how to utilise it to collate the data from the OWL monitor was quite sophisticated and not adapted to school use by relatively young children. Some of the children found taking the data from the OWL difficult and others found it simpler. Hopeman reps wrote: 'a highlight has been the recording, we learnt lots and it made us feel more in charge instead of us suggesting and the teachers making the decision'.

Eco reps and eco-committees engaged their schools with the WW initiative through speaking in assemblies; making posters and putting them up around their schools; speaking to classes on an individual basis; reminding classes every week through 'pester power' (Greenwards School); encouraging children to remind their families; using 'green teams' to check classes to turn off computers/lights that had been left on and generally raising awareness in their schools through a vigilante approach.

Some schools feedback that they had had not much success with involving their families, although they had raised the profile of WWs and invited families to participate. 'Sometimes children would tell their parents to use less energy, but we didn't provide any extra information for families to encourage them this time' (St Thomas School).

St.Gerardine School had to use individual energy meters in their classrooms and one of the challenges they had was maintaining continuous readings from all the different classes and recording them. The issues that arose are discussed elsewhere in this report.

Learning was a very individualised experience for each school, with varying levels of engagement of the school community. What seemed to make a difference was the involvement of the eco-coordinators to support the eco-reps and eco committees.

Comments on the OWL monitor results by the eco-reps showed their increased levels of understanding about energy consumption and usage in a school environment and how difficult it was to make a difference to consumption patterns.

Hopeman school recorded that their OWL results over a weekend were high because their lights were automatically controlled and came on even when school was not in session. Several other schools confirmed this lack of control over their energy consumption. Other comments by the eco-reps were that it was interesting to see how much the energy used cost their school; that incoming peripatetic teachers influenced the increase in energy consumption because they came in on Wednesdays to teach; that net book trolleys used a huge amount of energy to recharge all the net books and sometimes this was done on a Wednesday for a particular lesson on a Thursday.

So, altogether it has been estimated that approx 900 people were involved with the WW

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initiative, with 17kg Co2e carbon saving being made each Wednesday.

Whilst whole school awareness was increased, it was challenging to maintain whole school engagement and the initiative was only partially successful in engaging families. Hopeman commented that the 'Logo Competition' run in their school helped to make families more aware because this was a holiday activity that was organised by the eco-reps in their schools over the Easter holidays.

Community Outcome 2:

Outcome met:

The administration of this carbon saving initiative in schools by the eco-reps required a huge effort to engage the whole school community and to keep everyone contributing to the energy saving target. Various problems with the OWL monitor functioning and the accompanying software programme were without the control of the children and the project's technical consultant had to re-enter some schools to give more support. Despite all this, eco-reps remained committed to collecting the data and encouraging their school to maintain energy saving behaviours. Leadership qualities were in evidence here, with some eco-reps also feeling overwhelmed at times.

Waste Less Energy Campaign:

Community Outcome 2:

Outcome met:

This activity was initiated through the Waste Less Wednesdays focus in project schools and became the energy-saving public campaign going under the slogan 'Kids Take Action'. Three giant posters were commissioned from a media company featuring the winning logo which the Eco - Forum had chosen from a range of entries from all the project schools. These posters were displayed in the Vue Cinema in Inverness for 6 weeks during May/early June.

During this time all the people attending the cinema would have been exposed to the message of the campaign to save energy. On a BBGA day (1st June) project leaflets were given out to families, telling them about the project and also about the JCCF for their schools.

The Big Bag Giveaway:

Community Outcome 1:

Outcome met:

The Big Bag Giveaway (BBGA), was the second of the two 'Big Idea' initiatives that the Forum chose to take up. In the final forum it was the activity the eco-reps voted the most enjoyable in the project.

The awareness-raising and engagement of local communities in each school area was encouraged by this public activity of giving away free recycled bags in large stores. Tesco stores in Elgin, Buckie, Keith and Forres; Asda in Elgin and the Co-operative in Aberlour were the venues for the BBGA. Findochty had so many children who wanted to be involved, they had to hold a draw to see who would go and they went to Tesco's in Buckie on a Saturday.

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This captured the children's imagination in each school and the eco-reps were excited about all the publicity coverage we got from local papers.

Schools sharing a store also had to liaise with each other over the planning of the event and eco-reps had to approach stores and speak to managers about holding the BBGA in their store. Alves eco-reps wrote: 'We gave away loads of bags and leaflets and both schools worked really together.'

The eco-reps and accompanying volunteers were subjected to a wide range of responses from the public: 'There was a mixed reaction to us giving away bags. Some people refused to take them and didn't want to listen to us.' (St. Gerardine School)

Altogether, 1,500 bags were given away and about 1,200 leaflets. If every person taking a bag uses it a 100 times, we will have encouraged a carbon-saving of 2.97 tonnes Co₂e from the general public of Moray.

Community Outcome 2:

Outcome met:

The BBGA required liaison between schools sharing a venue; planning and approaching the stores to negotiate access and support for the initiative and public speaking skills to engage people in conversation: 'Some people didn't want to talk to us, and some got into debates with us about climate change and nuclear energy!' (St. Thomas-Keith)

Several of the children said they had felt very unsure and shy when they first began approaching people, but they then said they had become more confident in themselves. Several people commented to accompanying adults with the children about how polite and interesting the children were and that it was good to see children running such a venture.

Duncan Easter Technical consultant's report

Cut CO₂ emissions by 40.6 tonnes per annum by working with the families of 201 Moray pupils to reduce their food waste by 25%

Outcome partially met

The Food Waste Challenge

The Food Waste Challenge (FWC) only partially met our goal of reducing the food waste of 201 Moray families, amounting to carbon savings of 40.6 tonnesCO₂e. The FWC was early in the project and the children of the Moray Junior Eco-Forum found it challenging to persuade their peers to participate in sufficient numbers to meet the target. At least 40 participants in the first measurement period of 3 days did not return any data for the repeat exercise three weeks later.

However, 180 individual family members completed both measurements and collectively reduced their food waste by 10.08kg in the second three day trial when compared to the first. Because this food was not wasted, it means that less food need be produced, packaged and transported. The carbon savings therefore result from both the embodied

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emissions of 3.59kgCO₂e/kg and the landfill emissions of 0.45kgCO₂e/kg (DEFRA 2011). 10.08kg of food waste therefore represents a CO₂e reduction of 40.73kg in 3 days. These results are summarised in appendix A.

Assuming a family size of 3 and that the behaviour is maintained, the carbon saving amounts to 82.6kgCO₂e per family per year and a reach of 60 families. A total saving of 4.96 tonnesCO₂e.

The 'Big Idea'

Waste Less Wednesday (WLW) and the Big Bag Give Away (BBGA) were the two carbon reducing 'Big Ideas' to come from the Eco-Forum. The structure of the project meant that these activities were not defined by Park Ecovillage Trust at the time of funding and so no target for their carbon reduction benefits could be made. In as far as the Eco-Forum successfully created and executed two carbon saving initiatives rather than one, the goal might be said to have been exceeded.

Waste Less Wednesday

WLW contributed an average saving of 17.07kgCO₂e for each Wednesday in May from the combined efforts of the schools. Appendix B shows the OWL monitor totals for each school for each day of May. Where the monitor did not record data for the full 24 hour period the data was omitted to avoid skewing the results. The summary figures in appendix C show the average power consumption on Wednesdays and other days and the corresponding carbon savings using a conversion factor of 0.59gCO₂e/kWh. Graphs of the energy, carbon and cost savings are shown in appendix D. If the changes made continue throughout a school year of 42 Wednesdays, the saving will amount to 0.72 tonnesCO₂e.

The results from the OWL monitors varied greatly from school to school, with three out of seven actually showing increased usage on Wednesdays. The Eco-Forum children were keen to understand this and were able to identify rhythms in the school week that would adversely affect the results.

For instance, at Burghead laptop/net-book computers are routinely charged on Wednesdays for use on Thursday. Whilst WLW data showed a 10.7% increase in power consumption at Burghead, if Thursday is compared instead of Wednesday the data shows a fall of over 3%. Other rhythms identified as effecting WLW data included the visits of some peripatetic teachers and the cycle of PE lessons.

At St. Gerardine the recording form for use with the plug in meters was simplified for use from P1 to P7. The results returned did not identify the equipment connected or the time taken to use the power measured. No carbon savings have been attributed to WLW at this school and there was no information to pass on that would be useful to the WLW campaign in other schools.

Big Bag Give Away

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The Big Bag Give Away (BBGA) cannot really be said to have resulted in carbon savings as yet. When presented with the choice of bags that could be used, the Eco-Forum chose the most environmentally friendly option available (the Pack away Shopper). A selection of the bags considered is shown in appendix E. The figures for the number of uses are the lowest that produce any carbon saving.

Through developing carbon literacy in the Eco-Forum, the children understood that the carbon savings will begin when the re-usable Packaway Shopper is used for the seventh time. Promoting continued use of the bags was therefore an important aspect of the BBGA and was achieved through posters, leaflets, logos on the bags and personal interactions at the supermarket events. Appendix F shows the projected carbon savings from 100 uses of 1,500 of the bags.

Through my error, the hoped for BBGA carbon savings have previously been reported as 0.03 tonnesCO₂e. This figure should in fact be 2.97 tonnesCO₂e, based on each of 1,500 bags being used 100 times before being recycled. The calculation assumes the project's re-usable bag is made from virgin material, though in fact it is manufactured from recycled bottles, possibly resulting in greater carbon savings. If each bag is used 100 times and then recycled there will be a reduction of 150,000 single use carriers going to landfill. This amounts to 0.99 tonnes.

On the day of our visit, the Scottish Parliament voted to introduce charges for single use carrier bags. It is anticipated this news will consolidate the BBGA promotional activities and help realise the 2.97 tonnesCO₂e carbon saving.

Learning & Reflection

Chrisanthe Georgiou: Education Consultant (Carbon Literacy) and Project Coordinator's

report

PET was awarded the grant on the condition that we would change our carbon reduction homework pack, which was a significant part of our initial proposal. The carbon reduction pack was one of the main premises upon which our project was based and so we had to work very quickly with a short space of time to develop and deliver a new carbon reduction model for the eco-forum to trial in their schools. This had to be ready for the first eco-forum meeting.

We realised that we had to keep the new idea simple, measurable, achievable and that it needed to have a maximum impact with minimal disruption to the school communities.

There was also the question of fitting in around the school academic year which has further complicated matters. We decided to focus on food waste in order to achieve all that was needed within the time frame of the whole project. This meant that we had to launch the FW Challenge on 29th October and our meeting with Kate Airlie to cement our new idea only occurred on 21st September.

The academic year is set. We ideally needed more time to develop and trial a new initiative, but that was not possible.

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Levels of communication have been an interesting challenge for the project team. With schools, on the one hand our aim was to pilot a project that gave students responsibility and independence and on the other hand we had to constantly adapt how much to involve the school coordinators and how much support to give the schools overall.

Schools raised concerns about the quality of communication between the project team and themselves e.g. See Appendix 3, P.3 last paragraph.

Feedback from one of the youth ambassadors at our final review meeting also flagged up this issue.

Emails were sent out detailing events, tasks and requests for information but there was at times some confusion. One result of this was that 2 of our project schools Findochty and Alves did not attend the first Eco - Forum which put the reps and schools at a disadvantage. Feedback from coordinators generally requested more communication re content and planning process.

Schools and heads are very busy and it proved challenging at times to have a clear line of communication.

We tried following up emails with phone calls and asking for confirmation of receipt of emails, which helped a little.

We had to be flexible regarding the original project participants. Initially, the idea had been for us to include older children as 'elders' to support the junior aspect of the eco-forum.

The idea put forward in the JCCF proposal was that we would have a Secondary School level of representation from Elgin High. This high school had been interested and very supportive of the project. In the end the school did not feel it could justify the amount of school time their reps would miss. Time was a key factor in getting a replacement school. Because having 'elders' was an important support mechanism for the junior eco-forum, we substituted secondary school involvement with older pupil input, from the Findhorn community i.e. Lara and Robin (youth ambassadors). One youth ambassador, Lara committed to the whole of the project. Robin committed to half of it. The feedback received from Robin was that he had not felt adequately informed in time of the eco-forum itineraries.

An issue arose around transporting the children to Findhorn. Travel times for some schools were very long. However, these journeys occurred a total of 6 times and we felt the benefits of having the forum conducted at the Findhorn Ecovillage were worth it.

Food Waste Challenge: Five out of the nine (one school dropped out half way through) schools carried out the Food Waste Challenge as originally expected. Others struggled as they required more adult support to organise and plan the activities.

The implications of the delay was that the 2nd FW measurement had to be done close to the Christmas break and this is never an ideal time to conduct projects, as it is a very busy and hectic time in schools. Also, there was data missing from the 1st measurement, which had implications on the children and the team being able to effectively evaluate the results.

We found that in schools generally the children were at times overwhelmed by the level work required of them. When the eco coordinators actively supported the reps to work

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independently, encouraging them when needed, then the students had higher levels of success in getting families to participate.

Sue and Chrisanthe during school visits gave support where necessary to help the reps, for example, to organise and collate data, write receipts, write letters. The reps at times required a great deal of reassurance due to the fact that some struggled to get results back from their target audiences.

We found that some schools, despite emails, written explanations, verbal explanations to reps and adults, still did not provide the complete data needed for carbon evaluation. In these cases the team continued to follow up with email requests and offer support.

We felt that the amount of time we had with the reps during the Eco - Forum to ground carbon literacy ideas and work based skills was limited. This meant that our school visits took on an especially important role.

During the eco forums, we had to balance developing and increasing the children's carbon literacy with preparing them to work with their schools to generate their own carbon reducing ideas. We also had to help motivate and inspire them to be effective managers.

We decided that we would need to increase our level of support and communication out with the forums to schools to ensure that the eco reps had a sufficient understanding of the task in hand in preparing for the Big Ideas presentation. This decision paid off enormously as it shared out the responsibilities of some of the bigger tasks and made the projects more manageable for the children and schools.

When it came to the Big Ideas project children came up with many exciting ideas. The challenge was, at times, to assist them in thinking ideas through to their logical conclusion, so that the initiatives were realistic and measurable. The team provided relevant information to the eco committees during our visits regarding carbon reduction figures.

One school unfortunately pulled out of the project. The head teacher explained that one eco rep no longer wished to take part. Her partner, although keen, did not want to continue on her own. The two part time eco coordinators of the school decided that there was not the time and resources to appoint some one new and preferred to withdraw. These two reps had had a particularly challenging time with the class that they had been allocated to do the FW Challenge with. These reps and school nevertheless eventually felt the positive impact of the project and wrote a letter to this end (Appendix 19) The eco reps and their newly formed eco committee were awarded a congratulatory award and carbon literacy reading books as a big thank you for their contribution. The decision was a disappointing one for the project as the eco-reps' carbon reducing big idea had been an interesting one. They had wanted to distribute paper doggy bags to local restaurants to encourage customers to take home and reuse left over food from their meals.

It is clear that some eco reps and eco committees were more engaged than others. A learning would be to outline more thoroughly at the beginning of a project proposal the demands and levels of flexibility required of the project, thus allowing schools to consider more carefully if they are able to commit to the project fully.

Ultimately, the nature of the project was one that took shape as the year progressed and the students created the content as the year went on.

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In schools timetables are somewhat set and so it is understandable that schools would have preferred more structure. We had not anticipated how complex the project was going to be e.g. the reps chose to initiate two carbon reducing projects not one. We had to be willing to follow unknown outcomes. The BBGA gave momentum to the WLW whole school project in spite of the fact that it took a lot of organization.

We issued one school, St Gerardine's with monitors for the junior classrooms that measured the energy output of individual equipment. The idea was that they would feedback information to other schools regarding how much energy individual equipment used to support the other schools in their whole school efforts to reduce energy consumption on Wednesdays.

The data recording sheet that they were given by the project team was not suited to primary age range. The school's eco coordinator attempted to simplify it but had not created a form that collected data that was helpful for measuring energy consumption. The form did not indicate what equipment was being monitored. By the time the project team reworked the original form and sent it out the project month was drawing to a close and the form was not used.

Some schools fed back that they would have liked more clarity on the FW Challenge data collection sheets, which they felt would have made the data collection process easier. This brings up the issue of time. The project team needed more time to develop and produce more suitable resources or an additional education consultant to take on a supportive role and had had no opportunity to pilot the materials before they were handed out to the reps.

Here is a summary from Appendix 3 (see also Appendix 9) of feedback from eco coordinators of what could be done differently if the project was to run again:

- Provide schools with overview of the session requirements and project plan as children are not a reliable source of information and teachers needed to feel more involved to engage more with the project
- Information issued to schools could be clearer – at times it was difficult to know what the eco forum required of the schools
- Conduct Big Ideas earlier on in the year to allow project responsibilities for the reps not to happen so intensely at the end of the year
- Transport logistics revised to make travel time shorter
- Hosting more sessions outside for the reps to see more of the Findhorn Community
- Less project demands on their time as eco reps sometimes felt being a rep was too much extra work
- Consultation with schools regarding planning of the project
- Opportunities out of school hours for eco coordinators to meet with team to enhance communication
- More time was needed – there was a feeling of being rushed (eco-rep comment)

Learning and reflection from the project team in the final review meeting on 4th July:

'We only had 20 hours of face to face contact time with the reps and schools over the

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whole year to deliver the outcomes of the project (not including the parliament trip). We had very little time to deliver a lot.' Sue Clutterbuck

'It was a high energy project. It took a lot of energy and a lot of work. It's the nature of the project. A great deal of time has gone into the planning, administration and organisation to carry out the 20 hours of contact time.' Gilda Westermann

'The logistics of travelling meant that travel was very time consuming' Sue Clutterbuck

In conclusion, in the final weeks of the project, I found myself continuously moved by and in awe of the children that had take part in this year long project. They presented themselves as confident, knowledgeable, informed young people. They illustrated a much deeper understanding of the complexity of energy saving issues facing our communities today and an increasing ability to manage complex initiatives with grace and maturity.

Sue Clutterbuck: Education Feedback: Learning & Reflection report

'This project is a partnership with young people from Moray Schools and an opportunity to pilot an approach to greater empowerment (for) Youth- led initiatives in Scotland'. (Moray Junior Eco-Forum Project Application).

On June 27th this year the Moray Junior Eco-Forum travelled to the centre of Scottish national governance, the Scottish Parliament at Holyrood, to make sure their voices were heard. The presentation to politicians and civil servants, accompanying parents and officials was a testimony to the way this project empowered these young people. These children are the confident individuals and responsible citizens of the Curriculum for Excellence.

Over fifty years the Findhorn Community has developed into an ecovillage, an intentional community where social values of equality, democracy and shared interest have supported a sustainable way of life. At the heart of community living is the social interface of living and working together and this takes practice, awareness and commitment. For planetary communities to develop and succeed in sharing the earth's resources, it is not just carbon literacy that will bring people together in co-operative living.

The Forum was modelled on the principles of shared living and working. It emulates the Roman and Greek systems of debate and discourse as a basis for decision-making. The eco-reps were involved with their own election processes in their schools and were encouraged to develop their own electioneering strategies, including actively promoting themselves and their leadership qualities. Schools then voted on the two children from each eco-committee that would represent the body of the membership, their school community. (See School Circulars Appendix 31).

The October 29th 2012 meeting was the first time that these children came together to work at creating a Forum. The out-of-school space enabled children to experience working with other schools and a variety of other individuals who each brought their own personalities and their school's culture of learning and doing with them. Opinions about this experience varied. Unfortunately, because of school activities in the end week of term, the last Forum was attended by only 8/16 children. Of those attending 50% said they thought working with other children very good- 25% said good and 2% weren't sure.

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'I liked it when we meet up with the other schools'
'I didn't like working with other schools'
'I worked well with the other schools'
'It was good meeting other people my age' (Appendix 33).

'Giving young people out of school space will support out-of-role thinking i.e. instead of being pupils in a subject-led environment they can be independent thinkers and doers.' (Moray Junior Eco-Forum Project Application).

The project focused on involving eco-reps from the older age range of the Primary sector (Level 2- 9-12 years). From the outset of the project (See October Circular Appendix 31), the independence of the eco-reps was reinforced:

As you know the idea behind the eco-forum is for the activities and decision-making process to be as child-led as possible...'

The eco reps travelled to and from schools unaccompanied, apart from St. Thomas who sent a student along with their children, who was following her own studies. This was a different experience for the children right from the outset and although eco-committees in each school were asked and encouraged to support the work of the eco-reps, this support varied between schools. Eco-coordinator teachers were asked to take a step back to allow the eco-reps to make their own way with project outcomes and responsibilities.

For the eco reps aged between 10-12 years, this was a big space to step into. In the final forum on 1st July, with only 9/16 eco-reps attending, 80% of responses confirmed the children's enjoyment of coming to Findhorn.

The experiences from the Food Waste Challenge had given the eco reps an insight into the amount of work that leading an initiative can bring and some thrived on this, with support from their schools and others found it a challenge. One school found that even with the support they gave to the eco-reps ...

'Throughout X and Y have been quite daunted by the enormity of the tasks given as they are not the most confident of pupils...'

Another school made the point that...

'The children are capable of relaying information, but they are not always reliable at doing so. The success of the project requires the class teacher's support and encouragement, and if they don't feel involved, they won't timetable time for the eco-forum's work to be discussed'.

Feedback from eco-coordinators/class teachers (not all teachers involved were the school's eco-coordinators), was varied along a range of more involvement being needed by teaching staff and teachers also experiencing a project through the capabilities of something that was child-led.

'In the second half of the year, the Eco-Forum will initiate, carry out and evaluate their own carbon reduction project.' (Moray Junior Eco-Forum Application)

Communication in the project was enormously important to maintain the trust that our schools had in giving over the process of learning to the project space in Findhorn. Email circulars went out to schools on a monthly basis from September 2012. (Appendix 31) Into these circulars as much guidance and information as possible was put and as the complexity of the project activities grew, the amount of information passed in this way

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increased. One school commented...

' At times it has been difficult to understand what the Forum needs from us, because numerous requests are contained in one email and it is not clear what exactly is required from the children and teachers.' (Appendix 3 Greenwards)

The project team were also finding their way in a pilot that, as far as we knew, had not been replicated as a model of working with schools, outside school. Following the first Forum meeting in October 2012, an overview of the project programme was sent to all schools setting out, in broad terms, what the steps of the project were going to be, as far as could be planned in a project that was set-up to facilitate a child-led approach. This document gave a planned framework to schools (Appendix 30), but some schools seemed to not take this document on board, or because of high levels of school-based commitment, it may have been overlooked.

Sending information out is very different from ensuring that it is received and acted upon and within the time constraints of the project, it was not always possible to keep contacting all schools to check whether outgoing information had been received. However, schools were encouraged to contact the project team throughout the project running time if they had any queries.

Also, the experiences that were shaping the project forum sessions were very much organic and came from the children themselves. Requests from schools for more explicit information about session requirements (seen as feedback from schools in school reports), were more a reflection of how schools wanted to shape the project so it was easier to incorporate into school-based activity, and not necessarily about what and how the children wanted the sessions to be. Maintaining the balance between experimental space for the project and meeting the fixed demands of schools was a constant challenge.

Sometimes to compensate and help schools with unknown directions in the project, we were led time and again to micro manage the experiences of the eco-reps.

Time constraints also played a huge part in shaping the project forum experiences for the eco-reps. By the time they had been transported to Findhorn, which for some was an hour and a half on the bus, we had two and a half hours in which to run the main activity of the project with them.

Given that this was a whole school morning, or half a school day, no more time could have reasonably been given up by schools away from curriculum-led schoolwork.

However, when viewed from the achievements of the project, which involved a huge amount of work, the project team only had a little over 20 hrs in total to work with each school over a 9 month period. This period included two school holidays (Christmas and Easter- 4 weeks), and so our contact time with the children was minimal.

The last word on the project must be the children's. What had they learnt and was it all worthwhile?

From the final forum responses, the children attending were divided- 50% said they could have learnt some of what they learnt at Findhorn at school and 50% were 'not really sure'. Had they learnt more about carbon and reducing carbon- 75% said they had learnt 'a lot more', 25% 'a bit more'. Had they changed in themselves as a result of working in the project, 25% felt they had changed a lot, 63% felt they had changed a bit.

The 1 minute video cam clips, (edited content appears in the main project film), revealed how some children had been working with a counter-part eco-rep that they didn't

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get on with, but that they had coped with this and made it work for the greater good of the whole venture. This level of maturity and commitment is important to acknowledge as one of the unseen outcomes of self-learning in a group situation that lies at the heart of co-operative living.

Other children revealed how under-confident they had started out and how they really enjoyed themselves i.e. at the BBGA when they realised they could step into this 'bigger than themselves' space...

'I admired how hard I worked on the project and my leadership skills'

'I helped the group reduce carbon in the challenges'

'I gave ideas to the group'

'Things I liked: knowing that what I am doing helps the environment'

'I was happy with myself that I was confident enough to show our PowerPoint to the Scottish Parliament.

And things they learned...

'We think that just sending letters home and doing quick and strict speeches like you were in the army, haven't worked very well. We also think that some of the older ones won't co-operate because they think it is a waste of time.'

'We have found that making the projects more fun for them has worked. We have also realised that persuasion within talking has worked.' (Burghead Primary BBGA report)

'We made people think more about using plastic bags.' (St. Gerardine, BBGA Report)

'...a highlight has been the recording, we learnt lots and it made us feel more in charge instead of us suggesting and the teacher making the decision.' (Hopeman Primary-WW report)

'I know how to reduce more energy' (Greenwards Eco-Council WW report)

'Sometimes the teacher had to adapt lesson plans around WW, but it was good because it reminded them to consider the environment when planning activities'. (St. Thomas-WW report)

'When we analyzed our result, we found that we used most energy on Mondays and Thursdays...we proved that the lights in the hall do generate more power on a Thursday because the music teacher was not available one Thursday and the kwh were lower.' (Burghead WW report)

'Listen to others and try out there ideas, most of them worked'

'We realised how much we wasted. It makes us not want to waste anything any more!!!' (Hopeman FWC report)

'The time in between to two weeks meant that some children didn't bother the second week. 2 weeks in a row might be better next time, and hopefully as the weeks go on, people will bring in less food waste.' (St. Thomas FWC report)

'I wasn't organised. I wasn't that persuasive at school' (Final Forum feedback)

'I found the reports and the FWC hard work' (Final Forum feedback)

'I enjoyed looking around the Ecoplace because it made me feel calm and peaceful'. (Final Forum feedback)

'I'm going to come and live here. There are so many places you can draw inspiration from'. (Renee, 11, in conversation with Sue)

In conclusion, the last 9 months have been a huge journey of mixed experiences and learning. Ultimately, with hindsight, the project became very complex for young children to deliver and this is also an aspect the children saw and experienced for themselves. Originally the project team had planned to help the children run only one carbon-reducing initiative from their 'Big Idea' thus reducing unforeseen levels of work. However, we were persuaded by a suggestion from one eco rep and the response of our project advisor to carry out two 'Big Idea' carbon-reducing initiatives and this doubled the amount of planning, organisation and delivery of outcomes for the eco-reps and schools.

As in all things that trail blaze a new approach, unforeseen challenges were also opportunities for growth and learning and every effort was made to encourage and support the eco-reps at every stage of the project. And also to enable them to see where they could support each other and themselves, from exploring leadership skills with Leslie the Clown, to business management from Colin the Findhorn Community shop manager. Tours of the Findhorn Community exposed the eco-reps to an active outdoor sustainable built environment, whilst every trip entailed contact with different community members who weren't on the project team, but were seen to be working and running their own daily lives in the community. Seeing bicycles used as a main source of transport; observing food waste being recycled into animal food; witnessing the shared social and community spaces and how they were used, including the spiritual space of the community sanctuaries.

The experiential learning acquired from this project on a sub-conscious level is not measurable, except as a longitudinal study following the eco-reps in later life stages to see how these life experiences have influenced the life choices they make.

Reading the feedback from schools, a pre-project induction/info. session was suggested, along with more information to support schools short-term and advanced planning. More opportunities for school staff to discuss the project outwith school time would have been welcomed by some and clearer instructions about tasks from the Forum meetings would have been welcomed by others. All schools, with varying provisos, agreed that the project had in its essence, a model that could work for other schools.

Duncan Easter technical Consultant's perspective learning and reflection

After funding was awarded, the project was significantly re-written at the request of CCF. This meant exploring alternative CO2 reduction measures and measurement methodologies. There was time pressure on this in order to be ready for the first meeting of the Eco-Forum, and our development officer provided valuable support in the process.

The contact hours between the teaching staff and the Eco-Forum were very limited, leading to difficult decisions as to what could be included. It is also challenging to marry the requirements of quantifying carbon reducing behaviours with the knowledge and skills of primary age children. Improvement in the project team in this area would result in improved data recording sheets.

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Despite the modest carbon reduction achieved in the Food Waste Challenge (FWC) in absolute terms, it represents a saving of over 50% amongst the participants. This far exceeds our 25% reduction target that was based on typical levels of food waste in Scotland. It seems those fully engaged in the FWC may have been the few families who already wasted very little food, and yet managed to do even better. Perhaps it was too much for the newly formed Eco-Forum to greatly change the home habits of their peers' families.

The OWL energy monitors with USB connection were selected because this model had been installed on a temporary basis in a number of Moray schools. This meant Bill Anderson (the council energy officer) was able advise on the hardware installation in some of the project schools. Nevertheless, installation and use of the OWL energy monitors was not always straightforward. The challenges were:

- School IT systems required administrator login to load the OWL software. Though this was readily arranged and the software was installed for access by all users, this was often not the reality. Extensive knowledge of the school IT network was required to address this. Sometimes the appropriate person was unavailable and in small schools may have been off site. Additional school visits were made to assist.
- In some schools the wireless connection between the OWL sensors and the OWL display was unreliable, even when close proximity between the two was maintained. Though the OWL technical support is excellent, it required more time than the teachers could be expected to give to address the problems. In some cases I was contacted when the schools realised there was a problem and I made unplanned school visits to assist. Sometimes the problem only came to light after significant data had been lost, reducing the value of the children's efforts and their motivation.
- The OWL display transfers data automatically when the USB cable is connected to the computer with the OWL software installed. This can be very slow and there is no indication of progress. A number of school computers seemed unable to supply enough power to the OWL through the front access USB ports, but performed much better using a rear USB socket.

When the OWLs worked smoothly and the software was accessible, the children understood the information provided. Identifying and making contact with an IT expert for each school would be helpful.

The plug-in electricity meter was introduced because it was not possible to use an OWL monitor at St. Gerardines and it was important to involve all the schools in the Waste Less Wednesday project. The idea was that St Gerardines could feedback the power consumption of typical school equipment to inform the efforts of the schools using OWL monitors.

We selected the simplest model we could find – bought as the Power Plus Home & Garden Energy Meter, but also available under different names. Important features are:

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relatively large display.

3 buttons instead of the more common 4.

it requires no batteries.

there is no real-time clock to set, but the time since 'reset' is counted in stop watch fashion.

the meter 'resets' automatically when the power drawn falls below a threshold.

All but the last of these are positive. The automatic 'reset' feature caused confusion (particularly as it was not documented) and required an additional school visit. The data recording sheet was adapted in school to include the P1s (who were enthusiastic), but lack of understanding / poor communication meant no useful data was produced.

Though the plug-in power meters might have added strength to the Waste Less Wednesday (WLW) project, they proved to be too complicated. They were introduced by the project team (rather than the children) to solve the problem of involving a school that could not use an OWL monitor. Making this aspect work required more contact time and support for the school than was possible.

However, the OWL monitors in the Waste Less Wednesday project were generally a successful tool for the children, despite the problems mentioned. They supported child led data collection that could match precisely the project the children had outlined in the Eco-Forum. Given the age of the children, key strengths of WLW are:

- there was no need to account for seasonal variations in electricity consumption.
- the results were quickly available, helping to maintain interest and allowing the children to recall what they had done (or not done) to make a difference.
- the opportunity to step up the challenge by including more days of the week as understanding develops.

It is unfortunate that my spreadsheet error in calculating the carbon savings of the Big Bag Give Away (BBGA) did not come to light sooner. Only when preparing this report and calculating the weight of plastic saved from landfill did the discrepancy come to light. Nevertheless, this project was greatly enjoyed by the children.

The project team sought to reduce the carbon emissions generated by the Moray Junior Eco-Forum project as much as possible. Our efforts included:

- Organising shared transport to and from the Eco-Forum meetings.
- Wherever possible, several schools were visited in a combined trip.
- The project team all worked from home.
- Use of the Findhorn Park Carpool.

Finance & Administration

Eian Smith PET Project book keeper' report

At the outset of the project the following changes were made to the original JCCF application budget:

Due to the project involving 9 schools instead of the hoped for 10 schools, there was less need projected for the Supply teacher (BL2), the School Transport (BL1) and the School Resources (BL3) lines for whole of the project . This allowed us to allocate to two new budget lines. The first budget line was for setting up the new Carbon Program (BL14) as outlined in the requirements of the grant award. The second allocation not in the original application was a new Project Coordinator role (BL6) created by request of the Park Ecovillage Trust (PET) board of directors as there were concerns about the management of the project due to experiences with previous CCF projects. The report writing line was amalgamated into the new Project Coordinator role and the Misc. line was taken out and re allocated into the Eco-Forum Training and Consultants line. Changes to the previous title of Project Manager to Education Liaison/Development were also requested by the PET board to clarify the roles and responsibilities which came out of the new Project Coordinator position.

Once the project was up and running the following was important from a finance perspective:

In the first month of running the project (September) we found that some areas showed a potential under spend, and other key areas showed the need for more resources. It was clear that due to the pilot nature of the project that some flexibility would be needed as we went along.

Very early we recognised that we would likely have significant underspend on the School Relief teacher line (BL2), which is one of the largest budget lines in the project. The inconsistency compared to budget was due to changes that happened internally with Moray Council after the grant application process. Basically, Moray Council changed how they allocate for relief teachers due to the budget cuts they are experiencing meaning that even if all teachers had attended all the Eco - Forums we would likely have been over resourced. When combined with what turned out to be a much smaller than expected take-up of teachers actually attending the Eco - Forums the underspend grew significantly. Examples of the low teacher turnout for the project are that for the trip to the Scottish Parliament only 1 teacher came along, and we were hoping for more, and for the final Eco - Forum, no teachers came at all, though the hope for all to attend had been there.

Overall the newly introduced (to us) claim procedure of multiple invoices under one claim sheet took some resources to initially set up and run, and in the long run turned out to be much easier to manage and work with. We appreciate the clarity of the KSB team and Kate in particular for setting us straight on this. This being the third CCF project that PET had worked on we were able to move into the financial processing parts of the system quite quickly.

Even with the particular case of Budget Line 2, we found that in the second month we found ourselves still under spending against the original proposed project budget timeline.

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This was due to a somewhat later than anticipated start of the project. We started to notice some underspend on the School Transport (BL1) and the School Resources (BL3) lines. In the short term we distributed the combined £16,130.98 underspend to in 3 equal allocations for the remaining 3 months, which is not how it worked out. We did an evaluation process around what the needs were going forward into the remainder of that financial year (up to end of March) and for the completion of the project (until July) and discussed with Keep Scotland Beautiful about requesting further budget line re-allocation within that time. At this point it seemed that we would need some more resources in the Findhorn Admin/Office (BL8) and Book-keeping/banking/invoicing (BL9) lines even though we had not yet been drawing on these lines properly. Basically the budget did not take into account that admin and book keeping lag behind other elements of the project.

At one point we discussed with KSB the idea of moving up to £8,000 into the 2013-14 financial year.

We had hoped not to have to follow through with any request to move any of the 2012-13 year's allocation into the next year. It did come clear at this point however that the placement of the £2,000 for Eco-Forum Initiative Budget (BL20) in the 2012-13 financial year (end of March) was problematic. That part of the project would not happen until after the first of April. We did not foresee this challenge at the start when we were re fitting the budget as we have not done a CCF project that had spanned two financial years before. In month 5 we were grateful for the agreement to reprofile the project allowing that the aforementioned £2,000 for budget line 20 be moved into the 2013-14 financial year. And we are happy that we did not need to reprofile any more than this amount. This did still mean that for the 2012-13 year we had almost £20,000 remaining to spend in that last month. The project raised its dreams and raised its game and did amazing work to facilitate the students to come up with great ideas.

In the final set of claims for the 2012-13 financial year we endeavored to process as many of our achieved and expected costs as invoices as opposed to quotes. This caused some later difficulty in our internal book keeping as we now had to reconcile both the new invoices as they came in and the claims for work done that we had already drawn funds for. It took some time and effort to set up this parallel system which then involved more running costs in turn, again highlighting potential for under resourced lines 8 and 9. This may mean as well that when KSB reconcile their records with PET's banking records it will take some doing. I have worked hard to keep the level of documentation and tracking as robust as possible and feel confident that with the extra time spent that it has worked out.

In the end we still finished the 2012-13 year not having spent £5,734.73 of that year's allocation. We sincerely hope that that money can go to other worthwhile projects. In month 7 as we moved into the 2013-14 financial year we once again saw that our draw down on funds was coming in later in the project than the original budget had foreseen. There was some small confusion as to the Claim for £1602.00 made in April with a quote for Advertising, I had thought that we were going to squeeze that in under the 2012-13 claim year utilising more of the underspend on Budget line 2. I did not realise the ambiguity that had crept in until compiling the figures for this set of claims and this report. In the end of course it has not been a problem as there are still funds to spare for the project overall.

I noticed that for silly reasons I completely skipped Claim set 11 in our numbering, which

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for some time caused some confusion for us and the JCCF team. Basically when the final invoice for the Primesight advertising expenditure came in I called it Claim 11, even though it did not get reconciled with the quote until later. When I started the next claim I skipped to numbering it as 12. I hope this has all been sorted out now.

In the penultimate month we were looking to fall short on a couple of Budget lines, as previously flagged up, namely 8 and 9. As has happened in the past we have to claim under other well provisioned lines, instead of moving funds into the shortfall areas. Many claims in the final set were simply put under Budget line 2. In the first instance, for staff time not originally budgeted for from Sue, Chrisanthe, Gilda and Martin. In the second instance for lines 8 and 9 that were under provisioned in the final stages of the project.

Overall the initial budget for the Eco Forums project was over stated. We were not prepared for how over allocated it was.

Obviously the significant underspend on line 2 for both financial years of the project, as covered in other parts of this report is due to the difference between projected spend and what actually transpired. We anticipated actually using the relief teacher line much more robustly in both parts of the project. After the underspend in the 2012-13 financial year we held this as a focus for the second part of the project. As stated above however the teacher take up of attending the trip to Hollywood and the final Eco Forum was low resulting in, sadly, yet again significant underspend on that line.

The School transport line BL1 would have followed that increase of teacher engagement, and obviously did not do so, meaning that that line was over resourced. The project team had also found ways to save money and carbon by combining trips and journeys for the Eco Forums and other events. The cancellation of the last set of school visits due to constraints around the schools rhythms at end of term also meant some lines were not drawn on as anticipated.

Changing some quotes to invoices for the final claim of the 2012-13 year (claim set 9) set up a parallel system that became much more complex to manage than anticipated, as stated above this resulted in extra needs for budget lines 8 and 9 because many of those invoices needed to be split into multiple payments.

Only day to day book keeping and admin was covered in the original budget, not more robust professional accountancy services which is a direct cost of the project, which is why we have had to claim some of that under the resources of other lines. And on this final claim I personally have matched many of the other project team's rates of £20 per hour.

It was interesting that though this was a smaller project than previous CCJ-PET projects, it was also a smaller team, so this involved some awareness for us for how money was allocated.

It turns out that with cancelling the final School visit and other over provisioning, Budget Lines 12 and 13 are also under spent. Again, working to the School year can be tricky.

Overall we are pleased with how the project has run and the results. We sincerely hope that the £5,000+ that we have not needed will benefit another worthwhile project.

Chrisanthe Georgiou: Project Coordinator's Administration report

The initial team included a project coordinator, a sustainability education consultant, a technical assistant and an education liaison/development person.

We realised early on that we would require a schools' support person to help with the travel logistics and someone to support with technical equipment, photography and video. This was straightforward to organise as we had the budget to do so.

Interviews were held for the project coordinator's role and I was given the role as I had been the sustainability education consultant in the previous two projects and had supported Sue Clutterbuck in putting together the proposal for this project. I was deemed the most suitable person for the post given that the school year had already begun and we had to hit the ground running due to the changes made to the project outcomes and the delay this had caused.

Sue had a history of links with Moray schools due to her involvement in other sustainability education programmes with PET and so she assumed the role of School's Liaison/Education Development . An interview was not required for this post or for the sustainability education consultant or technical consultant as the team had worked on similar projects in the past with PET and so the board provided JCCF with letters to this effect.

Living in the Findhorn Ecovillage meant that we had an abundance of workshop facilitators, professionals and local resources to support the children in learning key skills.

We also had an abundance of venues within which to host the forums. The Universal Hall is a striking example of community at its best as it was built almost entirely by volunteers and the Moray Arts Centre is a splendid example of a zero carbon output building.

In schools, often parents took the place of teachers when supply cover could not be found. There was good support by parents for the BBGA and the parliament trip and for transporting the reps to and from the Findhorn community when necessary.

The team felt pressurised at times due to the extensive and complex tasks that needed to be undertaken. A small team delivered a complex project.

At times the team dynamics were challenging. Issues around communication and time keeping regarding deadlines arose, and also some boundary issues around assigned roles. When necessary we asked PET board to intervene to support team members in carrying out their roles and to encourage better communication. This was successful to some extent, but slowed down the overall process of getting things done on time and on some occasions could be seen to have compromised the overall quality of the work.

In past CCF funded projects, funds were allocated for team supervision. This proved helpful. This provision was not made in this project.

Supporting information

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Please refer to the memory stick labelled JCCF 2409 PET. Here there are examples of the development of the project including photos, work sheets, educational resources, and a video report by the eco reps who attended the final eco – forum information for schools and more.

The memory stick also has all appendices mentioned in this report. Please also refer to the Moray Junior Eco-Forum DVD and the Moray Junior Eco-Forum Parliament Trip June 2013 CD/DVD set.

Name of report authors and date it was finalised:

Chrisanthe Georgiou (Project Coordinator, Education Consultant), Sue Clutterbuck (Education Liaison/Development), Duncan Easter (Technical Consultant), Eian Smith (Book Keeping)