

# Carbon Management Plan



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## Foreword from the Chief Executive

As an environmental education charity, FSC has rightly set itself ambitious targets to reduce its carbon footprint by 40% per learner by 2020. These are embedded in our forward plans but also form part of the core values of the Charity.

FSC has been working to reduce its carbon footprint for over 20 years but this new target will presents us with an even more ambitious challenge as we also meet the increasing needs and expectations of our learners.

Some of this reduction will be brought about by increasing the carbon efficiency of our buildings and plant with a mix of energy conservation and green energy generation as dictated by the constraints of our sites. Some will be from changing our systems and processes and encouraging our suppliers and partners to help us meet our targets.

We recognise that delivering high-quality learning experiences in a wide range of environments is essential if the Charity's core purpose of *'Inspiring Environmental Understanding through First-Hand Experience'* is to be achieved. We will not discourage those attending our courses from travelling but will encourage them to travel more sustainably. With no accurate way of measuring the carbon footprint of travel to our courses, we will not include it in our targets but will use surrogate measures to ensure we are making progress in this area. We also recognise that there is a great potential for those attending our courses to make significant changes to their lifestyles and we will encourage this but cannot include those savings in our targets.

A significant part of our reduction will depend upon the positive behavioural actions of the Charity's staff and those who attend its courses. We must all take responsibility for reducing our carbon footprint and not assume it is someone else's problem. We encourage everyone associated with FSC to rise to this ambitious challenge.



**Rob Lucas**  
**Chief Executive**

## Executive Summary

The Field Studies Council is the leading UK charity in the provision of environmental education through first-hand experience. Its purpose and background aligns very closely with the values of the Carbon Trust.

The Field Studies Council (FSC) *Carbon Management Plan (CMP)* complements the FSC's Environmental Policy and works towards ensuring the charity's activities are sustainable (as per the FSC Vision for 2020), with a focus on the management of the opportunities associated with reducing carbon (CO<sub>2</sub>) emissions. The FSC believes that preparing for Carbon Trust accreditation will support the reduction of CO<sub>2</sub> across the organisation and inform both current and future planning. FSC is committed to reducing carbon emissions through striving to improve business efficiency, environmental performance and responding positively to environmental change. It is also important that we communicate these commitments through our education programme.

This plan is a strategic tool which FSC will use to manage the reduction of its carbon emissions. It covers the FSC's emissions from 2011 to 2020 and sets out the projects we will manage to achieve the 40% reduction per learner we have set ourselves for this period. This is an ambitious target that is in line with the HEFCE (Higher Education Funding Council for England) targets of a 43% reduction in carbon emissions by 2020 against a 2005/06 baseline, as well as the UK Government target of reducing the carbon emissions by 80% by 2050 using 1990 as a baseline. HEFCE targets were used to base our projections as the Field Studies Council is a not-for-profit educational charity that has some similarities to the university sector and university groups are major customers of FSC. Interim targets were set at a 15% reduction per learner by 2014 and 25% by 2017.

To reduce carbon emissions there are a number of strategic themes that shall be focused upon to meet the targets of the organisation. These include:

- Existing Environmental Management
- Behavioural Change
- Monitoring and Targeting
- Estate Management
- Strategic Investment
- Funding

To implement these strategic themes the FSC has created a Carbon Management Team in the form of the Environment Group (comprising of representatives from all sections of the Charity). This is overseen by the FSC's trustees (to provide senior management oversight and agree decisions). The ongoing governance of the Plan will reside within the current reporting structure of the FSC.

The CMP will allow us to ensure that we reduce our carbon emissions and deliver on the benefits over the period until 2020 and beyond.

In order to plan for reducing our emissions, we need to understand where they originate and which of our 19 learning locations (field centres) we need to target. The CO<sub>2</sub> emissions were calculated using Footprint Reporter 0.3.2 powered by Best Foot Forward. Table 1.1 shows the breakdown of our emissions for our baseline year of 2011 and their associated financial costs.

	<b>Buildings – Energy Usage CO<sub>2</sub> emissions (tonnes)</b>	<b>Vehicles (Centre Vehicles) CO<sub>2</sub> emissions (tonnes)</b>	<b>Total</b>	<b>Visitor Nights</b>	<b>CO<sub>2</sub> emissions per learner (tonnes)</b>
<b>2011 Baseline CO<sub>2</sub> emissions (tonnes)</b>	2437.47	96.31	2533.78	187,718	0.0135
<b>2014 CO<sub>2</sub> emissions (tonnes)</b>	2303.87	107.07	2410.94	215,921	0.0112

**Table 1.1: The baseline figures of carbon emissions for 2011 across the whole organisation.**  
 2014 interim results with a target of 15% reduction per learner are also shown. Actual reduction between 2011 and 2014 is shown to be 17.04%.

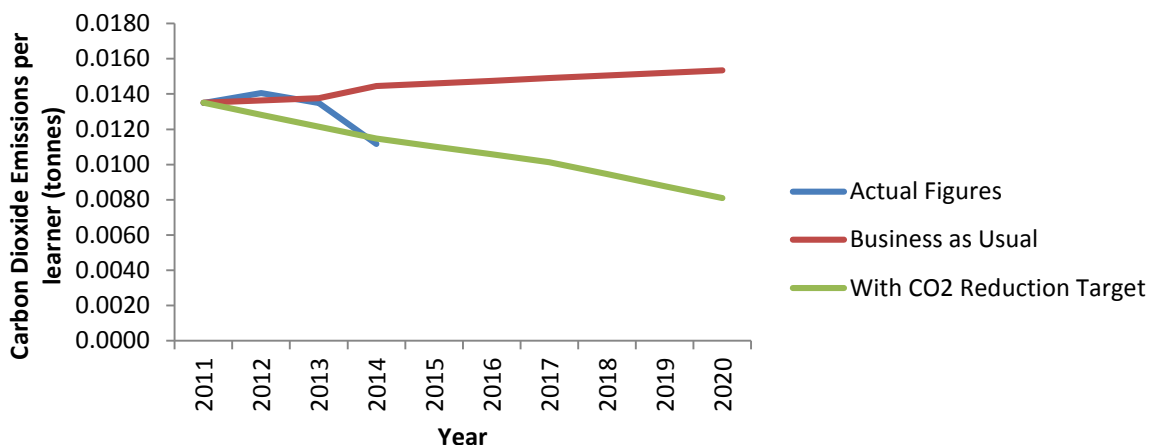
	<b>2011 Total Consumption</b>	<b>2011 CO<sub>2</sub> emissions (tonnes)</b>	<b>2014 Total Consumption</b>	<b>2014 CO<sub>2</sub> emissions (tonnes)</b>
<b>Natural Gas (kWh)</b>	2,153,796	439.74	2,030,531	414.57
<b>Electricity (kWh)</b>	2,307,133	1,255.50	2,096,751	1141.01
<b>Coal (kg)</b>	11,475	32.98	9,500	27.30
<b>Wood Pellets (kg)</b>	30,000	3.65	1,129,000	137.17
<b>LPG (litres)</b>	153,698	230.06	148,349	222.05
<b>Burning Oil (litres)</b>	185,250	471.31	140,475	357.40
<b>Propane (kg)</b>	1,551	4.24	1598	4.37

**Table 1.2: The 2011 breakdown of energy usage in centres (accounting for heating and lighting) as a baseline for FSC Learning Locations and 2014 totals.**

Since our baseline data were compiled, the FSC has begun operating at a new centre in Millport, Scotland (80 beds). This Centre was transferred to FSC ownership in January 2014.

It is clear that focus needs to be upon particular centres where current CO<sub>2</sub> emissions are greatest. To achieve our targets we have identified projects that will aim to reduce our carbon emissions by 40% per learner by 2020 in line with the FSC vision. Figures show that the interim target of a 15% reduction per learner by 2014 has been exceeded and actual results show a 17.04% reduction.

There are a number of projects planned for the duration of this plan, including capital maintenance and refurbishment projects and energy-saving initiatives, both behavioural and non-behavioural. These projects align with the strategic themes stated previously.



**Figure 1.1: FSC CO<sub>2</sub> emissions including actual figures, reduction targets and Business as Usual**

The ‘Business as Usual’ model takes the 2011 CO<sub>2</sub> emissions from our buildings and vehicles and then increases this at 1% each year (5% in 2014 with the new Millport Centre opening). The figures are based on total CO<sub>2</sub> figures and divided by the number of learners per annum. Learners are calculated from Visitor Nights. The CO<sub>2</sub> reduction target takes the 2011 baseline figure and then reduces emissions incrementally to meet the 15% reduction per learner by 2014, 25% per learner by 2017 and the 40% reduction per learner by 2020. Finally, the actual figures recorded to date are shown.

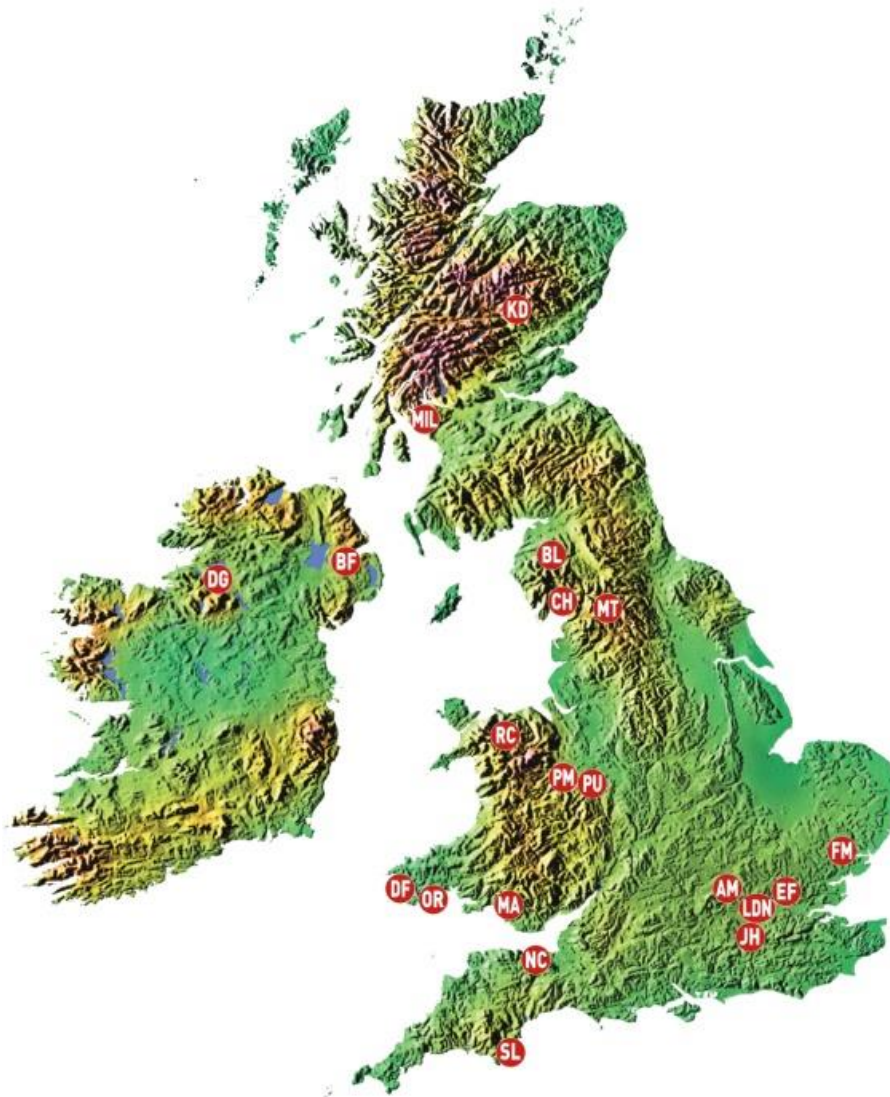
“Business as usual” calculations uses visitor nights from 2011 as this was the baseline year and this allows future predictions to be made whilst the actual number each year may fluctuate. A visitor night would be classed as one student staying residentially at an FSC centre for one night. These numbers have also been used to work out the reduction in CO<sub>2</sub> emissions per learner each year, with a 40% reduction in 2020.

Organisationally, it is very difficult to calculate the carbon dioxide emissions from our water consumption as many centres have their own reservoirs and septic tanks. According to ‘HEFCE’ guidance in January 2012, the baseline kgCO<sub>2</sub>e for 2009/2010 was 0.340 per m<sup>3</sup> of water supply and 0.700 per m<sup>3</sup> of wastewater treatment.



## 1. Introduction

The Field Studies Council is a charity that was established in 1943. With the mission statement of 'Bringing Environmental Understanding to all' the organisation now has a network of learning locations across the UK.



**Figure 1.1: FSC Learning Locations as per February 2015.**

These include: Blencathra (BL), Castle Head (CH), Flatford Mill (FM), Malham Tarn (MT), Nettlecombe Court (NC), Preston Montford (PM), Slapton Ley (SL) (inc. Start Bay), Amersham (AM), Epping Forest (EF), Juniper Hall (JH), The Royal Parks (Bushy Park, Greenwich Park & Regents Park), Dale Fort (DF), Margam Discovery Centre (MA), Orierton (OR), Rhyd-y-creuau (RC), Kindrogan (KD), Millport (MIL), Belfast (BL), Derrygonnelly (DG).

There are also some other units within the organisation including Head Office based in Shrewsbury and a Publications unit based in Telford. In 2014 the charity had 139,557 visitors attending courses at our centres and employed 461 staff.

The Field Studies Council has always had a strong environmental ethos, with many centres having previously gained EcoCentre Status ([www.eco-centres.org.uk](http://www.eco-centres.org.uk)), Green Business Tourism Awards ([www.green-tourism.com](http://www.green-tourism.com)) and Green Dragon Awards ([www.greendragonems.com](http://www.greendragonems.com)) amongst others.

This said, we acknowledge that in order for our operations to become more sustainable and to contribute towards tackling climate change, we have to reduce our carbon emissions. We have a large number of properties of various ages and design; however, we are embracing this and have already started to invest in reducing our emissions.

The FSC aims to reduce its carbon emissions for several main reasons:

- To provide security of future supplies and resilience to future changes
- To promote values and provide opportunities for sustainability education to the visitors at FSC Learning Locations
- To reduce expenditure for the organisation
- To comply with international and national legislation and policies
- To protect our reputation as an environmental charity

In order to reduce our carbon emissions and ensure that targets have been met, the FSC has established the Environment Group consisting of trustees, Directors, Heads of Learning Locations and team members from across the organisation. This group meets in person twice each year with other meetings taking place by email, teleconference and video conferencing. This group provides a strategic overview and direction along with the ownership of the CMP. The group works with individual learning location coordinators as well as both the trustees and Heads of Learning Location. We are following the model created by the Carbon Trust and implemented by Durham University for the design and implementation of the Carbon Management Plan as illustrated below.



**Figure 1.2: Carbon Trust model for design and implementation of the FSC Carbon Management Plan.**

The FSC Environment Group was created in March 2013 following encouragement from trustees to develop a Carbon Management Plan. Since this point in time, the baselines and forecasts have been researched and both the priorities for the organisation as well as risks have been identified. This allowed the group to then design a cost-effective strategy for the plan which is now being implemented across the organisation, aiming to meet the organisational target of a 40% reduction in emissions per learner by 2020.

There have been several projects that have already made an impact and improved our environmental sustainability. Some of the key milestones are noted below.



Activity	Unit/Learning Location	Date
FSC establishes Eco-Centre Award scheme in partnership with Tidy Britain Group and all Centres enrol in this scheme.	All learning locations	1998
Solar Panels installed on Soils Lab	Slapton Ley	2006
Shearwater Environmental commissioned to undertake an Environmental audit of FSC residential properties.	All residential learning locations	2007
Carbon monitoring pilot across FSC centres identified where there were issues with data quality and consistency.	All learning locations	2008
Installation of Ground Source Heating and Rainwater Harvesting in the new Chell Building	Slapton Ley	2008
Wood Pellet boiler and District Heating Installation saving 4000l oil equivalent to 12 tonnes CO <sub>2</sub> each year.	Slapton Ley	2008
Building of the new FSC Margam Discovery Centre – Purpose built ‘eco’ field centre. EPC RATED A	Margam Discovery Centre	Opened April 2009
Replacement of old boilers with new and efficient boilers - 42% less usage of LPG	Nettlecombe Court	2009
Replacement of Kitchen Immersions with LPG boiler	Orielton	2009/2010
Replacement of multiple LPG Boilers	Derrygonnelly	2010
Installation of Hydroelectric Power Turbine. Oil/LPG boilers installed to replace electric heaters and immersions, district heating & air source heat pump. HEP turbine generating 46602 KWh and saving 20 tonnes CO <sub>2</sub> each year	Flatford Mill	2012
Replacement of old gas boiler with two new gas boilers	Juniper Hall	2012
Replacement of electric heaters and oil boiler at Head Office with biomass boiler.	Head Office	2012
Installation of a 35kW hydro scheme, a 300kW biomass heating scheme and improvements to the building infrastructure.	Blencathra	2012-2014
Setting up of FSC Environment Group	Whole organisation	2013

## Case study **Flatford Mill HEP scheme.**

Designed to produce 10kW of green electricity, and occupying a site of traditional energy generation in the mill race of Flatford Mill, the Archimedean Screw Turbine received listed Building Consent and Planning and National Trust approval in 2011. Once the Environment Agency was satisfied that appropriate consideration had been given to the design and installation of eel and fish passes, a river works permit was granted and an abstraction licence agreed, the scheme was commissioned and installation completed ahead of the Feed in Tariff Scheme deadline of April 2012. The Archimedean Screw Turbine is of German design and has the potential, depending on the flow in the river, to supply between 30 and 50% of the centre's daytime electricity demand, including the power supply to the air source heat pump installed to supply under-floor heating to the Edwards room. Not only does the turbine contribute significantly to the reduction in carbon consumption at the centre but its proximity to the main building and teaching rooms makes it a powerful visible statement of the Charity's commitment to carbon reduction. It is additionally a "visitor attraction" for National Trust visitors to the site and was instrumental in the Centre achieving Suffolk Greenest County Awards in 2013 for Greenest Small Business, The Environment Agency's Award (Business Category) for Adaptation to Climate Change 2013, and the runner up in Suffolk's Greenest Building Award 2013.

Capital expenditure (£)	Carbon Reduction (tonnes) per annum	Annual cost reduction (£)	FIT payment (£)	Cost per tonne saved (£)	Pay back in years
141,688	20	2422	9,274	7,084	12



## 2. Carbon Management Strategy

The Field Studies Council's Carbon Management Plan has been designed to complement the environmental ethos of the organisation and contribute to and influence the environmental understanding of our visitors. These priorities were highlighted in the 70<sup>th</sup> anniversary publication "Reaching into the Outside". This plan also allows us to improve our management of opportunities that will reduce our carbon emissions in line with the FSC Vision for 2020. We are fully committed to reducing our carbon emissions whilst continually developing the learning experience for all our visitors to our learning locations and improving the working environment for all staff and volunteers.

The implementation of this CMP will allow us to take a more direct approach to significantly reducing our carbon footprint. We also aim to have a far greater awareness of our centre operations and the environmental impacts these may have.

### 2.1 Context and Drivers for Carbon Management

As stated by the IPCC, warming of the global climate system is unequivocal, with many changes unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased. With these changes set to continue, this will have a great impact environmentally, politically, socially and economically across the globe.

**The Climate Change Act (2008)** sets legally binding carbon reduction targets for the UK. In line with this Act we need to have reduced our carbon emissions (based on a 1990 baseline) by at least 34% by the year 2020 and by at least 80% by the year 2050. Further drivers include the **2030 policy framework for climate and energy** proposed by the European Commission which aims to make the European Union's economy and energy system more competitive, secure and sustainable. The white paper aims to reduce carbon emissions by 40% from a 1990 baseline by 2020.

For a host of geopolitical and resource reasons, energy costs in the long run will continue to rise. For the FSC it is of far greater importance to spend money enhancing our educational products than on unnecessary energy.

The FSC has a strong commitment to improving the environmental understanding of all visitors and staff. Part of this is to reduce the carbon emissions of our buildings and estates. Margam Discovery Centre has a Display Energy Certificate (DEC) with a grade A rating. The DEC gives an energy rating between A (carbon neutral) to G (least efficient). The organisation continues to increase the number of its buildings with a DEC so that staff and visitors can easily identify the energy uses in buildings. DEC's are also a useful operational management tool and will allow FSC to target refurbishment to raise DEC's to an acceptable standard.

Many buildings within the FSC are historic and therefore offer significant challenges to reduce their carbon footprints and increase their environmental sustainability. However, many learning locations are making significant progress. Some examples of good practice include:

- Blencathra – Woodchip boiler and hydroelectric turbine installed in 2013. This will reduce carbon emissions by 80% at this centre
- Flatford Mill – Installation of hydroelectric turbine in 2012
- Slapton Ley – Woodchip boilers installed 2008

- Margam Discovery Centre – Photovoltaic Panels; Rainwater Harvesting; Wood Pellet Boiler. Installed in 2009.

The examples have shown carbon reductions and encourage our other centres to adopt other measures such as these as a driver for change. The FSC is also working with other partners, such as the National Trust (FSC's landlord at centres including Flatford Mill, Juniper Hall and Malham Tarn), as both organisations are making progress in the carbon management of historic buildings and estates. Therefore, both organisations can learn from each other and develop enhanced carbon reduction schemes.

This Carbon Management Plan complements the FSC's newly redeveloped environmental policy (Appendix A) and will help to form a strategic planning tool for operational managers as part of the FSC 2020 Vision. Carbon management will be at the forefront of environmental policy including **'Encouraging our staff to develop local sustainable initiatives that support the Field Studies Council's commitment to carbon reduction striving towards improved business efficiency, environmental performance and responding positively to environmental change'**

## 2.2 Strategic Themes

The key strategic themes that will move FSC towards its carbon management goal are as follows:

- **Existing Environmental Management**  
The FSC Carbon Management Plan will be incorporated into the management and delivery of current policies and environmental management. This will include the FSC environmental policy, EcoCentre Codes and the FSC Vision. Existing policies are continually reviewed to ensure the most up-to-date practices for the organisation. We will continue to develop our properties and encourage the positive environmental behavioural actions of both staff and visitors to promote carbon reductions and improved environmental sustainability.
- **Behavioural Change**  
Carbon management within the FSC is to be clearly made the responsibility of all FSC staff and visitors, with a focus on behavioural change. This will be communicated in various ways including training, communications both internally and externally and awareness campaigns. A key component of ensuring the messages are communicated across the organisation will be through the Eco Committees based in each centre and through the FSC Environment Group. In addition, individual learning locations will be responsible for reducing their carbon footprint and increasing sustainability which will be reported on and used for target setting.
- **Monitoring and Targeting**  
The FSC will increase its capability to increase monitoring of energy consumption. This will identify areas that can be targeted for improvement. This will be reported on to trustees and will be communicated externally. We will also monitor our vehicular usage and other relevant areas.
- **Estate Management**  
The FSC is committed to carbon reduction and improving the environmental performance of not only buildings but the estates that we manage and own. We will develop our sites with reference to the Carbon Management Plan.

- **Strategic Investment**

The FSC will continue to invest in projects that will reduce the carbon footprint of both individual learning locations and the organisation as a whole. This will include refurbishments, training, improved design of new buildings, increased renewable energy and improved energy efficiency. The FSC has also launched the Green Initiative fund to which EcoCentre committees at learning locations can bid for grants towards projects at their centre that will reduce carbon emissions and/or improve environmental sustainability.

- **Funding**

Both organisationally and at individual learning locations, funding shall be sought to reduce the carbon footprint and improve environmental sustainability. This will include funding for projects that improve buildings and estates, promote positive behavioural change and increased environmental awareness. The Charity will continue to invest in areas which will aid in the reduction of our carbon footprint including: training staff; refurbishments; better design, energy efficiency and renewable energy.

## 2.3 Targets and Objectives

The FSC had a target of reducing the carbon emissions of the organisation by 15% per learner by 2014. Future targets are also set with a 25% reduction per learner by 2017 and by 40% per learner by 2020 based on the 2011 baseline figures. We will implement new projects and initiatives that will help to contribute to this reduction, along with on-going programmes that aim to reduce carbon emissions.

**FSC aimed to reduce CO<sub>2</sub> emissions by 15% per learner by December 2014 and achieved 17% reduction. Future targets are set to reduced CO<sub>2</sub> emissions by 25% per learner by 2017 and by 40% per learner by December 2020.**

**FSC baseline CO<sub>2</sub> emissions were 2533.78 tonnes in 2011. This figure is calculated from all energy usage at centres and includes vehicular usage.**

FSC recognises that the energy consumption of our buildings makes up the majority of the organisation's carbon footprint (predominantly fuel for heating, cooking and lighting). Therefore, opportunities to improve the energy efficiency of these buildings will be developed to have maximum impact and help to meet our targets. All improvements to buildings and estates will have a focus of energy efficiency and improved environmental sustainability.

Business Managers will be improving buildings and estates to reduce carbon emissions by 40% per learner by 2020. This will be done with a number of energy-efficiency programmes as detailed further in the Carbon Management Plan. Where new buildings are designed, these will aim to be as energy efficient as reasonably possible, making the most of new low-energy technologies.

The FSC also aims to improve and develop how we monitor, record and communicate our energy data usage. Through more detailed meter reading and monitoring it will allow the organisation to target areas of concern or where there can be greater development to improve energy efficiency.



We will audit, review and scrutinise our energy consumption and vehicular usage so that we can maximise opportunities for energy saving and carbon reduction. This may also advise us on how we can further save energy and reduce carbon emissions through both behavioural and non-behavioural measures.

The FSC finance team will provide centres with reports on energy usage and carbon management allowing them to see changes and progress. This will include comparisons between learning locations and temporally at individual learning locations.

The FSC Environment Group, along with the learning location Eco Committees, will oversee the improvement in the environmental performance of the organisation. They will aim to:

- Ensure all staff and visitors are involved with the implementation of the Carbon Management Plan, whilst also being aware of organisational targets and how they can contribute to achieving these.
- Report on and promote carbon reductions and environmental sustainability, allowing business managers to see where savings are being made.
- Continue to promote and encourage positive environmental behavioural actions.

### **The 40% per learner target**

The FSC has always had a commitment to improving environmental performance. Thus when The Climate Change Act (2008) was introduced, the FSC also committed to strategic carbon reduction targets. The Act required the UK to reduce carbon emissions by 34% by 2020 against a baseline of 1990 data.

In 2010 the new FSC Vision for 2020 was introduced. As part of this vision the FSC wanted a firm commitment to a reduction in carbon emissions. Through assessments across the organisation, including the Shearwater Environmental Assessment commissioned in 2007, it was decided that an aspirational long-term reduction target of 40% per learner may be achievable although this would be challenging. At this time schemes such as EcoCentres and the Green Tourism Business Award were already being used extensively across all learning locations as benchmarks.

The Carbon Management Plan and associated projects, including behavioural change, aim to reduce carbon emissions per learner without the need to restrict or limit the activities of our Learning Locations. Instead the aim is to challenge learning locations to be more efficient, eliminate waste and generate financial savings that can be re-invested into the charities infrastructure and services.

## 3. Emissions Baseline and Projections

### 3.1 Scope

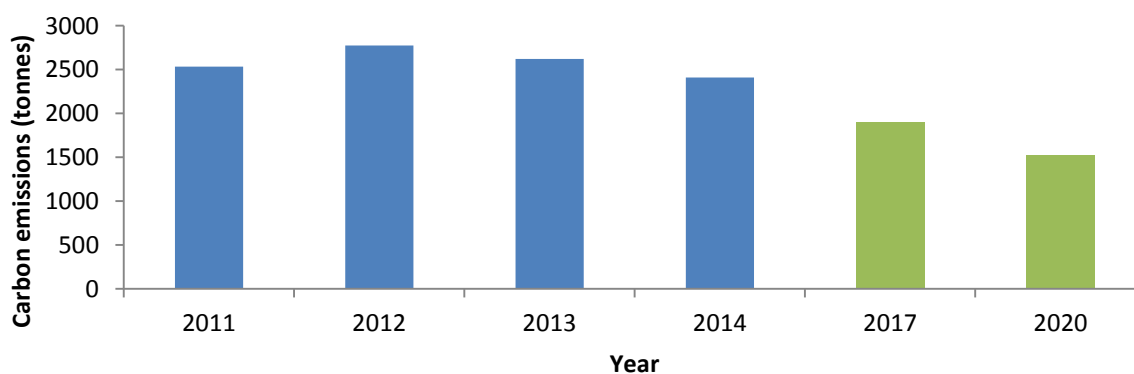
The FSC will work towards reducing carbon emissions from all three scopes produced by the World Resources Institute (WRI). These include:

- **Scope 1:** Reducing emissions from direct sources it owns or controls. The main area for FSC to work with in this area will be our vehicle usage and direct fuel usage (including gas and heating oil) in our buildings.
- **Scope 2:** Emissions attributable to the electricity, heating and cooling the company consumes. Therefore, the FSC can target reductions in our electricity usage from the grid.
- **Scope 3:** Everything else. It is within this area that we will aim to reduce the impact of our water usage and associated carbon emissions. We also monitor our waste and aim to reduce our carbon emissions from this. Although figures are almost impossible to retrospectively derive for waste and water for the baseline year, we will record these more accurately in the future and aim to reduce these as the Carbon Management Plan progresses. We also aim to see how other emission sources such as our supplier mileage can be incorporated into our targets, thus contributing to sustainable procurement for the organisation. FSC employees and trustees also strive to reduce car mileage and domestic flights in favour of train for business travel where possible. FSC will also invest in technology to reduce the need for face-to-face meetings and enable more reliable teleconferencing, videoconferencing, etc.

### 3.2 Baseline

In order to see annual progress in reduction of carbon emissions and improving our environmental sustainability, it is important to establish an accurate baseline. To fit in with our ten-year Vision and to match our reporting structure and records we have set the baseline year at 2011. FSC reporting takes places over a calendar year. Our baseline data fulfils the criteria of scope 1 and 2 based on WRI criteria. The targets of our Carbon Management Plan focus on 2020, although there are smaller targets based within this.

Based on Scope 1 and 2, our total carbon emissions for 2011 were 2533.78 tonnes. Our target for 2014 was to reduce these emissions by 15% per learner. This will further reduce, with an interim target by 2017, to 25% per learner. The target reduction by 2020 is by 40% per learner based on the initial 2011 figures. This is shown graphically in Figure 3.1.



**Figure 3.1: Total carbon emission trend from 2011 to 2014 and future 2020 target (tonnes CO<sub>2</sub>).**

2017 and 2020 targets are the CO<sub>2</sub> emissions target in tonnes per learner multiplied by 2011 baseline visitor nights.

Table 3.1 shows how our emissions for our baseline year of 2011 are comprised.

	<b>Buildings – Energy Usage CO<sub>2</sub> emissions (tonnes)</b>	<b>Vehicles (Centre Vehicles) CO<sub>2</sub> emissions (tonnes)</b>	<b>Total</b>	<b>Visitor Nights</b>	<b>CO<sub>2</sub> emissions per learner (tonnes)</b>
<b>2011 Baseline CO<sub>2</sub> emissions (tonnes)</b>	2437.47	96.31	2533.78	187,718	0.0135

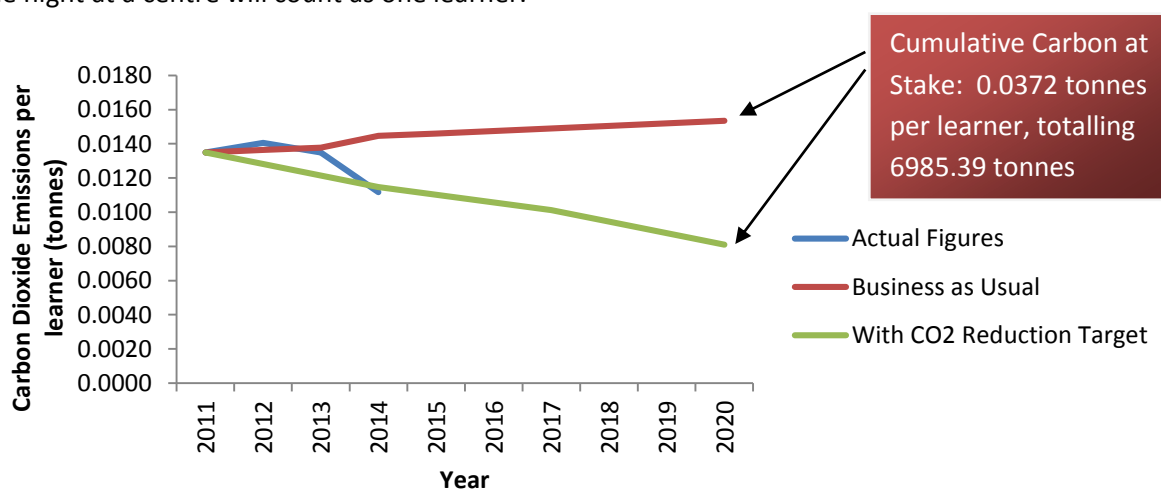
**Table 3.1: Summary table of emissions for baseline year 2011**

Further examination of the energy usage can be broken down into various sources. Some of these have far greater carbon emissions than others and so enable first target areas to be examined.

### 3.3 Projections and Value at Stake

Looking at the future operations of the FSC, one possible scenario would be the “Business as Usual” model (see Fig. 3.3). This assumes an overall increase of 1% per annum per learner (there is a peak in 2014 with the purchase of our newest centre in Millport, set at 5%). Figure 3.3 also shows our actual carbon emissions between 2011 and 2014 compared to the ‘Business as Usual’ scenario. The CO<sub>2</sub> reduction target is set as the organisational target. Whilst initially it appears that there is fluctuation in the actual emissions and is around the ‘Business as Usual’ line, there have been many projects which have shown significant reductions in 2014 and the start of a reduction towards the 2020 target. Section 4 details the projects that will be taking place over the next few years that will help us to get to our target in 2020.

If we continue on the ‘Business as Usual’ model, we will have carbon emissions of 2881.38 tonnes in 2020, equating to 0.0153 tonnes per learner (2011 visitor nights total has been used for forward projections). However, with our target scenario we will have emissions of 1520.50 tonnes, which is the equivalent of 0.0081 tonnes per learner. Therefore, this target allows us to determine the ‘carbon at stake’. The number of learners has been based on visitor nights, where a visitor staying one night at a centre will count as one learner.



**Figure 3.3: Carbon Value at Stake graphic.**

Value based on 2011 visitor nights and difference between business as usual and predicted CO<sub>2</sub> reductions by 2020.

## 4. Carbon Management Projects

Since the 2011 baseline data was established for the Field Studies Council a number of projects have been completed and others have been planned for the medium and long term, based on the 2020 targets. Many projects focus on capital investment and behavioural change.

### 4.1 Completed Projects

There have been a number of projects completed with the intention of lowering carbon emissions across the organisation. Some of the major projects are summarised in the table below:

Project	Capital expenditure (£)	Carbon Reduction (tonnes) per annum	Annual cost reduction (£)	Cost per tonne saved (£)	Pay back in years
Replacement of inefficient/failing boilers and electric heaters at Rhyd-y-creuau with more efficient mains gas boilers and wood burners.	13,500	9	1,500	1,500	9
Replacement of inefficient boiler at Castle Head with a pair of high efficiency boilers and improved zoning of heating and hot water throughout the site.	26,559	12	2,600	2,025	10
Replacement of inefficient boilers at Dale Fort and improvements to zoning.	33,195	15.75	3,500	2,100	9.5
Replacement at Malham Tarn of inefficient basement boiler and north wing boiler with high efficiency boilers and improvement to zoning.	£28,540	30.2	6,800	1,010	4.2
Work at Preston Montford to replace the electric immersions and electric wall-mounted heaters and install insulation and thermostatic control throughout the remodelled Queen Anne building.	143,000	60	4000	2,383	8
Installation of a biomass system replacing the oil fired boilers at Kindrogan, and extending the system to include the currently electric heated Monument wing of the main house.	130,000	60	7,000	2,166	7.6
Replacement of inefficient boilers at the cottages at Malham Tarn.	8,500	9.3	£2100	913.97	4
Replacement of Cedars Calorifer at Juniper Hall. More efficient and allows passive solar heating to be added at a later date.	7,717				

**Table 4.1: Some major capital projects that have been completed since 2011 across the FSC.**

## Learning Location Carbon & Cost Profile 2012 Heating & Hot Water Systems

A report was commissioned in 2012 to carry out a heating and hot water assessment for each existing learning location. The report was carried out by ARW Contracting.

Many of the centres' carbon footprint levels reflect their heating costs although there are some exceptions. Slapton Ley shows the benefit of having wood pellets lowering its carbon footprint and Castle Head shows that, even though mains gas has a good Kwh to Kg of CO<sub>2</sub> ratio, a centre can still have a poor carbon footprint with high (wasteful) usage.

### Organisational Totals per annum

Total CO<sub>2</sub>: 1,447 tonnes

Total cost: £297,370

From the survey of individual centres, a number of lists were derived based on the following Key questions:

- If this item fails, does it seriously impair the centre's ability to function?
- Does the age or condition of the equipment suggest it can no longer be relied upon?
- Is there a sufficient efficiency gain or business need to justify changing this item?

Where systems were identified that were:

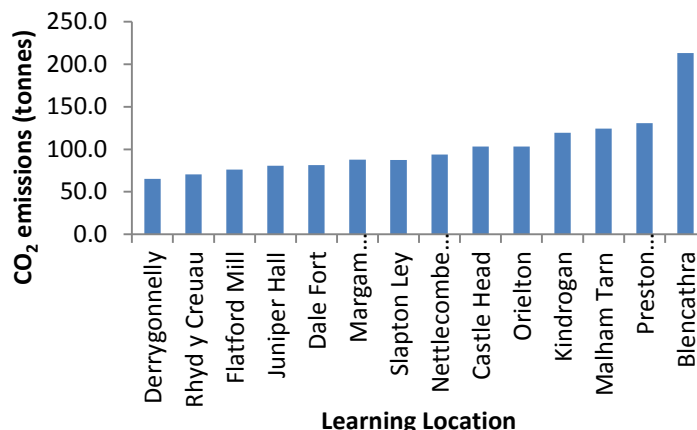
- Critical to the running of the centre
- Of an age or condition where they can no longer be used with certainty
- There is an additional cost/carbon footprint argument to change

These heating systems formed the "red list" of priorities for the charity where there was a need to replace plant and where a planned pre-emptive replacement could produce significant carbon savings over and above a reactive like for like replacement at a time of crisis.

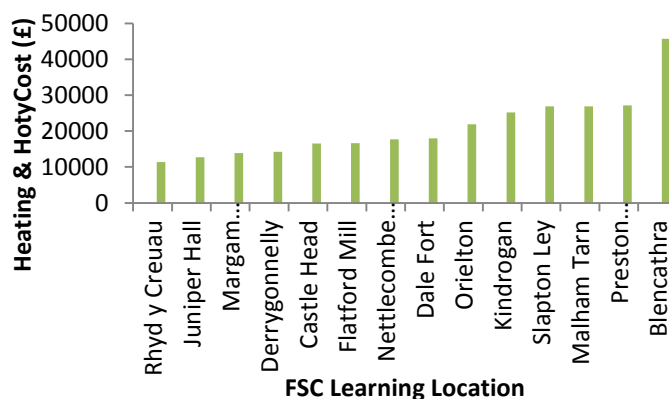
In addition, a green list was formed from centres where:

- there are currently no integrated systems in place (i.e. electric wall heaters and immersions) and
- there is an overwhelming argument to install a new system for cost/carbon footprint reductions

Where systems existed but where there is a strong case for change on cost/carbon footprint grounds a yellow list was produced; these were predominantly inefficient old oil-fired systems that would benefit from modern replacements or potentially biomass alternatives



CO<sub>2</sub> emissions (tonnes) for each learning location's heating and hot water in 2012



Cost (£) for each learning location's heating and hot water in 2012

System	Centre
50kw Worcester and Hot Water System	Dale Fort Block B
Ideal 50-65 kw	Malham Tarn North Wing
Myson 12-30 kw	Malham Tarn North Wing
Boulter oil	Kindrogan
Grant oil	Kindrogan
50kw Worcester	Dale Fort Block A
Ideal Buccaneer	Malham Tarn Main House
Sime 240 kw	Castle Head
Mistral	Dale Fort Block C
Beeston Berkeley	Rhyd-y-Creuau Main House
Restaurant Hot Water Cylinder	Derrygonnelly
Ideal Mexico boiler	Rhyd-y-Creuau Laboratory Block
Cottage 1	Malham Tarn Cottage
Cottage 2	Malham Tarn Cottage
Mistral	Preston Montford Head Office
Electric Night storage	Preston Montford Cottage
Electric Heating & Main House	Blencathra
Electric System	Orielton Stable Labs
Electric Heating	Preston Montford Main House
Monument & Steading	Kindrogan

Four centres: Blencathra, Preston Montford, Malham Tarn and Kindrogan account for 40% of the overall heating and hot water carbon output for the 14 residential centres included in the survey. This prioritises carbon reduction programmes for these four sites. The carbon reductions against capital expenditure, as well as the condition of the systems currently in place are also considered for all fourteen sites.



## Case study Head Office

A report was commissioned with the help of a grant from the Energy Saving Trust to undertake an audit and feasibility study for Head Office (HO). The Sustainable Energy Audit was produced by Marches Energy, in 2011.

Energy use exceeded typical figures for a building of this type and use and highlighted a significant issue with heat loss, poor lighting, inefficient boiler and heat distribution systems that were not only expensive to run but were not performing to the exacting standards of the office occupants.

Clearly, there was a potential to make a significant impact on the energy efficiency of the site. Reducing the use of electric heaters would on its own save 4.3 tonnes of CO<sub>2</sub> (£683) a year. The boiler, a 13-year-old Mistral 140-160 operated at about 60% efficiency. One option was to replace the existing boiler with a more efficient (90%) boiler which would save £1342/year and payback within 4 years. However a biomass boiler system, would generate £ 2725.33 and contribute a 17.7 tonnes of CO<sub>2</sub> saving per year. The new boiler was commissioned in March 2013.

The office roof had the potential to accommodate 32m<sup>2</sup> of solar panels. A combination of Feed-in Tariffs at the higher rate of 41.3 p/per unit plus displaced electricity (lighting and water heating) and exported electricity (assuming 50% was used on site) would mean a saving of 1.84 tonnes of carbon and an income of £1640 a year with a payback of less than 10 years and a life span of more than double this. Work was completed in Feb 2012.

Capital expenditure (£)	Carbon Reduction (tonnes) per annum	Annual cost reduction (£)	FIT payment (£)	Cost per tonne saved	Pay back in years
34,107	19.5	£3216	Fits £1491 RHI £2725	£1749	4.6



### Green Communities Expert Support

#### Carbon Saving in a Community Building



Additional measures that were considered as sensible and affordable were an upgrade to lighting to more energy efficient lamp units with the potential to save a further 1.57 tonnes of carbon with a payback of less than 4 years, and roof insulation, saving 1.98 tonnes of carbon with a payback of less than 18 years.

## Case study Blencathra

In 2010, FSC Blencathra was awarded a grant from the Rural Carbon Challenge Fund and match funding from FSC & Lake District National Park Authority to install a 35kW hydro scheme, a 300kW biomass heating scheme and improvements to the building infrastructure. The project commenced in early 2012 and has now been completed.

Energy use is related primarily to occupancy and the weather. Since 2010/11 the Centre has seen a shift in usage patterns, with school groups in particular using the Centre more in the winter months (October-March) and less in the summer months, resulting in greater heating demand

The Centre installed a 300kW biomass boiler to provide the primary heating for the following buildings:

- Main House & Lonscale – replacing oil heating and hot water
- St John’s, Naddle View, Helvellyn, Castlerigg, Rigg View & Borrowdale View – replacing electric heating and hot water
- Yonder End, Herdwick, Studio & Annexe – replacing LPG heating and hot water.

**CO<sub>2</sub> displaced by the hydro scheme = 59.3 tCO<sub>2</sub>/year.**

**Total CO<sub>2</sub> displaced by the project = 214.8 tCO<sub>2</sub>/year.**

This is equivalent to 80% of the average CO<sub>2</sub> emissions for the Centre (excluding transport) between 2011 and 2013.

Capital expenditure (£)	Carbon Reduction (tonnes) per annum	Annual cost reduction (£)	FIT payment (£)	Cost per tonne saved	Pay back in years
629,000	214.8	18,000	40,000	2929	5-8



The baseline energy consumption for Blencathra and related CO<sub>2</sub> emissions for the years

	2011		2012		2013	
	kWh	tCO <sub>2</sub>	kWh	tCO <sub>2</sub>	kWh	tCO <sub>2</sub>
Electricity	247,171	134	297,390	161	290,755	158
Oil	381,603	99	441,262	115	427,690	111
LPG	111,862	24	90,842	19	91,886	20
<b>Total</b>	<b>740,635</b>	<b>257</b>	<b>829,494</b>	<b>296</b>	<b>810,331</b>	<b>289</b>

2011-2013

The minimum calculated energy used for heating that has been substituted by the biomass system, based on the average demand for the three years from 2011-13, together with CO<sub>2</sub> emissions for the fossil fuels displaced by the biomass system. →

	kWh	tCO <sub>2</sub>
Electricity	77,846	42.3
Oil	416,851	108.3
LPG	63,828	13.7
<b>Total</b>	<b>558,525</b>	<b>164.3</b>
Biomass CO <sub>2</sub> Emissions		8.8
<b>CO<sub>2</sub> Displaced by the Biomass Heating</b>		<b>155.5</b>

## **4.2 Current and future projects**

The FSC Carbon Management Plan will be incorporated into the management and delivery of current policies and environmental management. This will include the FSC environmental policy, EcoCentre Codes and the FSC Vision. Existing policies are continually reviewed to ensure the most up-to-date practices for the organisation. We will continue to develop our properties and promote the positive environmental behavioural actions of both staff and visitors to promote carbon reductions and improved environmental sustainability.

Following the completion of several projects that have reduced the carbon emissions and environmental impact of the organisation there has to be continuation of this to meet the target of a 40% reduction per learner by 2020. This can be tackled by various projects that include both capital investment and behavioural change.

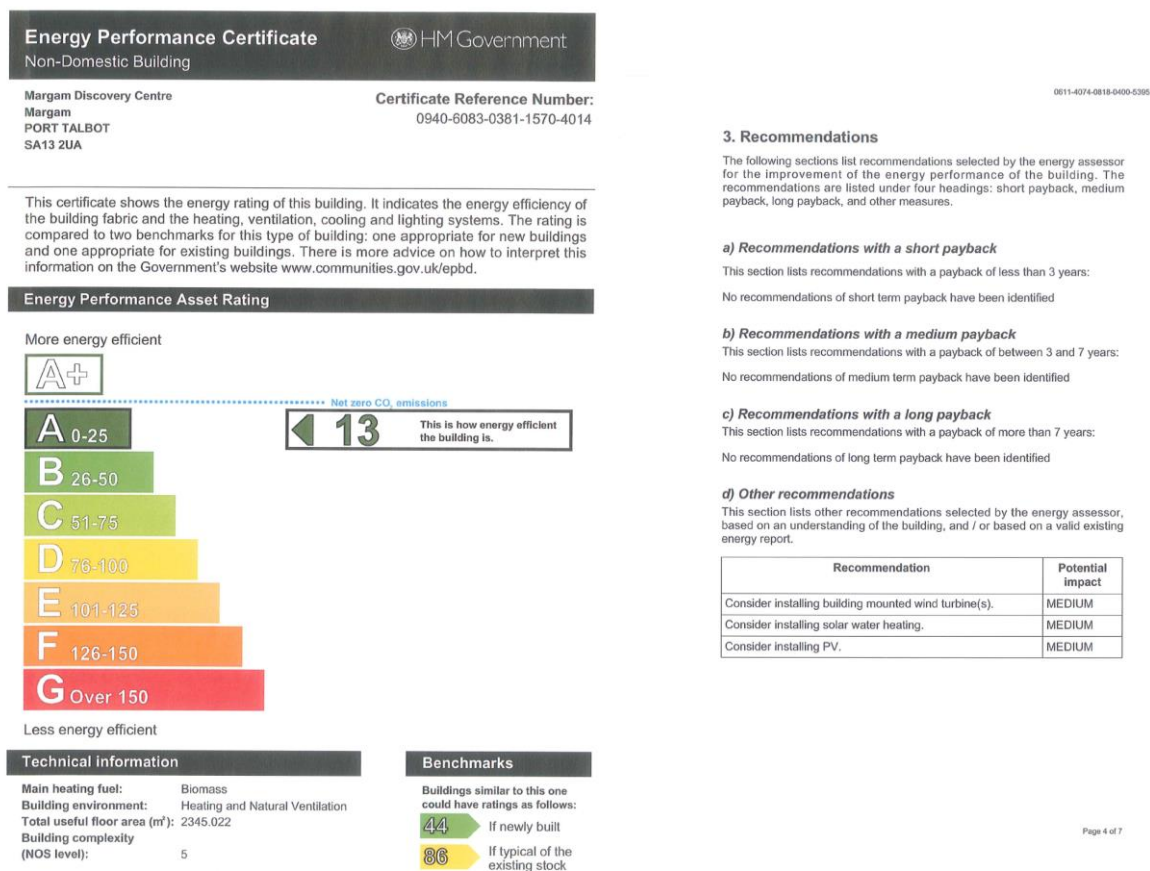
### **Energy Performance Certificates for FSC buildings**

At present only two FSC properties have Non-Domestic Energy Performance Certificates (EPCs). These are Millport and the Margam Discovery Centre, South Wales. The Energy Performance Certificates are designed to promote the improvement of the energy performance of buildings. They are based upon actual energy usage of a building and increase transparency about the energy efficiency of public buildings. The certificates use a scale for energy efficiency, i.e. from A to G with A being the most efficient and G the least. The advisory report (produced by the assessor) will help focus individual FSC learning locations to improve the energy efficiency of their buildings so that future assessments show a better rating.

From 2015 it is intended to visit all centres as part of the regular assessment of condition of properties. These will inform learning locations of their performance and can be used to encourage improvement. In addition for our residential accommodation for staff we will seek to ensure that these “tenanted” properties are at least E grade and subject to a proportional investment to improve their carbon performance in line with the requirements of legislation for tenanted accommodation. The generic nature of the software used to produce the recommendations, will be translated into useful actions for our learning locations. The Display Energy Certificates will be displayed in prominent locations at our learning locations and interpreted for our visitors, who we will seek to involve in actions to improve the ratings.

The FSC will also have, in 2015, to comply with the Energy Saving Opportunity Scheme (ESOS) – The Department of Energy and Climate Change [DECC] guidance was released in September of 2014. It is a mandatory energy assessment and energy saving identification scheme. It applies throughout UK and comes from EU legislation (Article 8 of the Energy Efficiency Directive). It applies to organisations with more than 250 employees and requires FSC to measure total energy consumption from buildings, transport [and industrial processes]. FSC would have to identify and measure the most significant 90% of energy spend/use i.e. the energy we pay for over a 12 month reference period. We need to appoint an external Lead Assessor to conduct / review the assessment and report to the Environment Agency by 5<sup>th</sup> December 2015 that we have complied with the scheme. The scheme requires re-assessment on a 4-year cycle.

The Director of Operations is investigating adopting ISO 50001 Energy Management System as achieving this standard would negate the need to go through the ESOS assessment on a 4-yearly basis and would embed an energy management system in the organisation and support the behavioural changes needed to further reduce our carbon consumption.



**Figure 4.1: The existing Energy Performance Certificate and advisory report for the FSC Margam Discovery Centre**

### Remaining Capital Projects from the 2012 Heating and Hot Water Assessment

Following the report in 2012 carried out by ARW consulting, there remains only one item from the red list which was to replace the Ideal Mexico boiler at FSC Rhyd-y-creuau. This will take place in 2015. All yellow items on the list have been remedied and the final green item, looking at the electric systems in the stables at FSC Orierton, is having proposals drawn up so this can be developed in the near future.

### Behavioural Change

As an environmental education charity much progress has already been made to embed carbon management in our organisation. However we recognise that we need to develop and embed this further throughout the organisation.

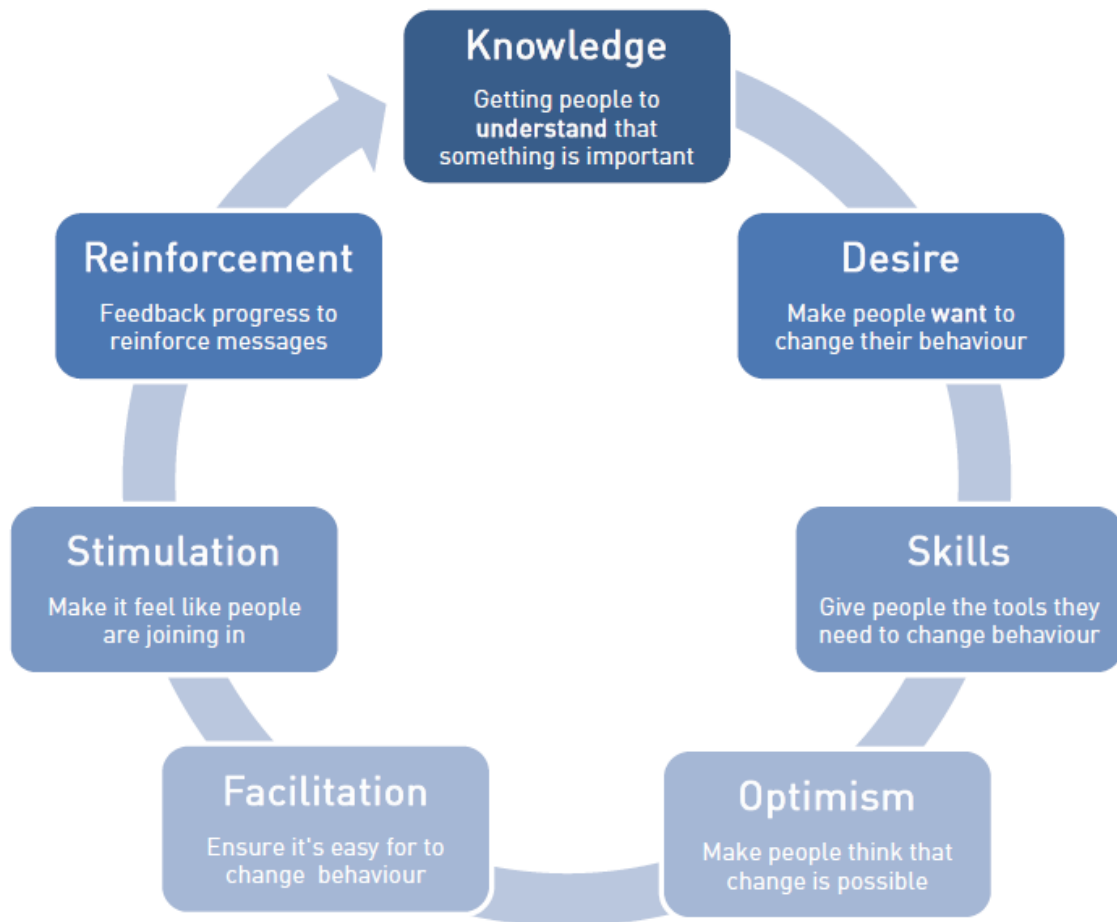
The Carbon Trust stated in 'Low Carbon Behaviour Change: The £300 million opportunity' that an investment of between 1-2% of an organisational energy spend that focuses on a targeted employee engagement scheme can further reduce energy costs by up to 10%.

As such the FSC has now begun a behavioural change programme that commenced in December 2014 with the annual staff conference, held at Blencathra. The conference was focussed on our









**Figure 4.2: The behavioural change model as suggested by Robinson (1998)**

Taken from Low Carbon Behaviour Change: The £300 million opportunity. Suggests the seven steps that are required to result in social change.

The FSC staff conference gave us the opportunity to start engaging with a large proportion of employees. Using the Robinson model, the FSC now hopes to continue this work with a series of projects that can develop further behavioural change across the organisation. Some of the main focus project areas are tabled below and section 6 has more detailed information about achievements and projects that are planned.

Project Area	Lead	Capital/ Revenue expend. /annum (£)	Areas for Action	Evidence of the benefit
Induction/HR	Head of HR	2,000	<ul style="list-style-type: none"> <li>Ensure all staff have access to FSC Environmental Policy and Procurement Policy at point of induction</li> <li>Ensure values are considered at induction</li> <li>Electronic payslips</li> </ul>	<ul style="list-style-type: none"> <li>Greater awareness of values and FSC policies</li> <li>Greater integrated thinking – apparent in Action Planning and Business Planning, filtering into Personal Development Reviews</li> <li>Reduced paper through electronic communication</li> </ul>
Data Management	Director of Finance	29,500	<ul style="list-style-type: none"> <li>Version One data to be recorded and communicated regularly</li> <li>Energy data to be communicated to Heads of Learning Locations at least monthly</li> <li>Energy Performance Certificates</li> </ul>	<ul style="list-style-type: none"> <li>Paperless finance systems (Version One)</li> <li>Data used as a tool to Heads of Centres and included in incremental review criteria</li> </ul>
Training	Environment Group	10,000	<ul style="list-style-type: none"> <li>FSC Staff Conference</li> <li>Regional Training</li> <li>Specific workshops</li> </ul>	<ul style="list-style-type: none"> <li>Energy consumption, paper usage and vehicle usage reduced</li> </ul>
Procurement	Heads of Learning Location and Head Office Depts.	-	<ul style="list-style-type: none"> <li>Update of Procurement Policy</li> <li>Ensure environmental considerations of products and suppliers are priority.</li> </ul>	<ul style="list-style-type: none"> <li>Greater use of local suppliers</li> <li>Energy efficient/low carbon products</li> </ul>
Benchmarking (campaigns, competitions & events)	Environment Group (+ Green Fund)	25,000	<ul style="list-style-type: none"> <li>EcoCentres</li> <li>Green Tourism Business Award</li> <li>Green Dragon Award</li> <li>Local Awards</li> </ul>	Awards for commitment and actions towards environmental targets/carbon reduction and sustainability
Quality badge (education)	Directors of Operations	12,000	<ul style="list-style-type: none"> <li>Formal education – including environmental education as part of teaching programmes</li> <li>Informal education – Displays, Information points, website, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Greater awareness for visitors coming to FSC learning locations</li> <li>Reduced expenditure for energy and reduced carbon emissions through greater awareness</li> </ul>

**Table 4.2: Key behavioural change project areas for FSC from 2015 onwards.**

Target minimum spend to have significant behavioural change that will show a reduction in carbon emissions is £47,000 (based on 2014 data). Capital revenue does not include staff time.

### FSC Green Fund

To complement the behavioural change work being done by the organisation and following support from the FSC trustees, £20,000 a year, from a restricted fund account, is made available to Eco Centre Committees at FSC Learning Centres. This is to support initiatives that are aligned to the FSC Environmental Policy and the Vision target of reducing our carbon footprint by 40% per learner over

the life of the Corporate Plan. Having started in 2014, this is a competitive fund that learning locations must bid for, and only those whose proposals meet the criteria and are well thought through are funded.

It is intended that this fund will support initiatives that have been developed by staff within centres and promoted by their Eco Centre committee. Strong applications will be supported by Head of Learning Locations but we would neither expect nor want Heads of Learning Locations to initiate applications here. Initiatives that develop staff engagement and communication are encouraged.

Applications for the Green Fund must focus on four key areas:

- **Contribution to carbon reduction**
- Staff engagement
- Educational benefit & visitor engagement
- Communication to wider audiences

The first round of the green fund was awarded to Learning Locations in 2014. There were a total of 21 applications totalling a request of £82,058. After consideration, 8 projects were funded across the organisation totalling grants of £19,081.76. These projects are detailed in Appendix E.

We will ensure that all funded projects are reviewed and evaluated to provide feedback to the Environment Group before further funding is allocated. This feedback will be shared with colleagues using the intranet and regional training.

Area	Lead	Capital/ Revenue expend. /annum (£)	Areas for Action	Evidence of the benefit
Green Fund	Environment Group	20,000*	Areas identified across eco-committees from across leaning locations that would have a positive environmental benefit	<ul style="list-style-type: none"> <li>• Reduced carbon emissions/water/energy usage.</li> <li>• Reduced waste</li> </ul>

**Table 4.3: Green Fund supporting FSC learning locations environmental projects each year.**

\*£20,000 allocated per annum by FSC which may now increase with further grants from funding bodies and charitable trusts. This will be examined annually by the National Grants Officer and Charitable Development Manager.

### **Developing a new organisational Procurement Policy**

Throughout the FSC there are many good examples of sustainable procurement and some learning locations have individual policies, whilst others practice this ethos but do not have it documented. Following the staff conference in 2014, a sustainable procurement policy is to be drawn up in 2015, accompanying the work done on behavioural change and values. This will be overseen by the Environment Group.

### **Millport Biomass Project**

The FSC has undertaken the construction of a new build classroom and accommodation block at Millport. Towards the end of 2013 and in order to inform North Ayrshire Council of the heat demand of the existing buildings and plant the FSC commissioned an initial energy assessment of the site. This report “Biomass Heating System Design Overview” (07 Feb 2014) made the clear

recommendation that it would be *commercially highly advantageous if the FSC were to own the biomass boiler being installed as part of the hostel construction and receive the associated RHI income.*

Once additional costs for electrical power and servicing are included the total annual income is estimated at £37,868 equivalent to £489,736 in RHI (Renewable Heat Incentives) income and a total saving of £757,369 over the life of the RHI payments, giving a payback period of 7 years and pre-tax return of 16%. Annual fuel savings against current oil use are estimated at £18,924. Millport currently has the worst economic and carbon energy performance of all FSC centres. Millport's estimated 2014 energy costs are £60,000 (£47k electricity and £13k oil). This is roughly the same level of spend at the pre-reforms stage of both Blencathra and Preston Montford.

### **Staff and Trustee Travel**

From 2015, the FSC will invest in developing IT networks across our network of learning locations. This will also facilitate advanced technologies that will enable greater ability to use teleconferencing, videoconferencing, etc. This will therefore reduce the need for face-to-face meetings and ultimately reduce our carbon emissions.

## 5. Carbon Management Plan Financing

### 5.1 Assumptions

Finance should not be the only or main driver behind CMP initiatives. Among other considerations are factors such as the carbon credentials of supply companies. The Blencathra energy project referred to above was driven by that site’s position as the worst performing of all FSC sites for both its energy costs and its usage. The opportunity of substantial grant funding was useful although the final grant was cut by one-third from the initial award. Much the key driver was carbon reduction by switching away from a fossil fuel. A range of ideas were investigated, including solar thermal and air and ground source heating. Lake District geology and weather helped the choice focus upon a biomass system and a hydro-electric turbine.

The FSC can finance carbon initiatives either through its own resources; or it may seek grant or even loan funding depending on the circumstances of the project and FSC at the time of letting the contract. FSC has installed through its own cash resources over £1m in the following projects between 2011 and 2014:

Site	Description	£k cost
Flatford Mill	Archimedean Screw	348
Head Office	Solar panels	44
Head Office	Biomass boiler	48
Blencathra	Biomass boiler	352
Preston Montford	Biomass boiler	90
Kindrogan	Biomass boiler	130
<b>Totals</b>		<b>1,012</b>

**Table 5.1: Costs and descriptions for major learning location projects between 2011 and 2014.**

FSC was awarded grant funding in respect of the hydro-electric turbine and other energy improvements at Blencathra. In early 2015 at the Millport site in Scotland, FSC will be funding itself a new biomass boiler installation whilst North Ayrshire Council will be funding construction of new buildings. FSC’s policy is to seek Feed-In Tariffs or RHI and that necessitates a refusal – as applicable – of any grant funding.

Utilities cost assumptions are included in the annual budget information. The main energy source remains electricity and is currently provided by Opus Energy Limited on a tendered annual contract renewable on 30 September each year. Mains gas is provided by Gazprom to two or three sites on a similar basis. FSC has a national deal with Calor for the provision of LPG to ten of our sites. A deal was reached in October 2014 with Certas Energy for the provision of kerosene and heating oil. FSC seeks these national arrangements as economies of scale and buying power mean costs per litre or Kwh are lower than if each site had attempted negotiation itself.

Table 5.2 shows total energy costs for the first 10 months of 2013 in comparison to 2014.

Fuel	Jan-Oct 2013 (£)	Jan- Oct 2014 (£)	£ Change	% Increase/(Decrease)
Liquid Gas	54937.75	49199.87	-5737.88	-10.44
Heating Oil	97250.07	61919.19	-35330.88	-36.33
Mains Gas	36955.50	29612.83	-7342.67	-19.87
Electricity	219589.66	211018.83	-8570.83	-3.90
Propane	4203.25	5260.75	+1057.50	+25.16
Coal	581.85	414.90	-166.95	-28.69
Wood Pellets	8913.94	29413.24	+20499.30	+229.97*
Total	422432.03	386839.61	+35592.42	-8.43

Table 5.2: **Energy costs for the period January-October in 2013 and 2014.**

\*Although shown in red, the increase use in wood pellets has a positive contribution to the reduction of carbon emissions across the organisation.

This table shows a very welcome 8% decrease in total energy costs, even allowing for a generally milder 2014. The increase in propane illustrates the need for continued vigilance. The increase in wood pellet cost is a reflection of the significant and continuing investment in biomass technology.

In 2015 FSC plans to monitor all its energy sources. Automated Meter Reading (AMR) for mains electricity and mains gas were installed during 2012. We now plan to install similar technology in respect of our kerosene, liquid gas and mains water.

## 5.2 Benefits/Savings – Quantified and Un-quantified

We would expect plans, benefits and savings to be readily quantifiable. We would expect a measurable reduction in carbon emissions and an on-going saving in utility costs and usage. The table below shows 2012 and 2014 energy costs for three projects:

	2012 (£)	2014 (£)
Blencathra	62	49
Flatford	31	33
Preston Montford	47	36

Table 5.2: **Energy costs for Blencathra, Flatford Mill and Preston Montford following major changes to their heating and hot water systems.**

Flatford Mill installed an Archimedes Screw, whilst Preston Montford and Blencathra installed biomass boilers).

That there have not been savings at Flatford Mill reflects very low river levels because of dry weather and a consequent effect on the Archimedean Screw.

FSC fully expects reductions in on-going energy costs both at Kindrogan (biomass installation autumn 2014) and at Millport (biomass installation in early 2015).

The financial benefits are the earning and receipt of Feed-in Tariffs and RHI. Feed-in Tariffs are being earned on the Archimedean Screw at Flatford and on solar panels at FSC Head Office. Since early 2012, FSC has earned £3,773 in FITs for Head Office. Those for Flatford Mill are referred to in the earlier case study.



FSC has registered 4 biomass installations with Ofgem during 2014 at Blencathra, Head Office, Preston Montford and at Kindrogan. To date, some £8,554 has been received in respect of RHI installed at Blencathra.

It is recognised that projects will have un-quantified benefits such as the educational aspects as detailed in Section 6.

### **5.3 Additional Resources**

FSC recognises that in certain circumstances additional resources will be required for effective and efficient delivery of a particular carbon management project. This should be done by reference in the first instance to the OMT. Where necessary, proposals will then be taken forward for approval by the FSC Finance Committee.

At Blencathra, FSC made use of a specialist energy consultant to aid staff in the management of important aspects of the project. In making RHI applications to Ofgem in respect of biomass installations, FSC has required the detailed technical expertise of the installing contractors. In future contracts, FSC will require this technical assistance as part of the contract.

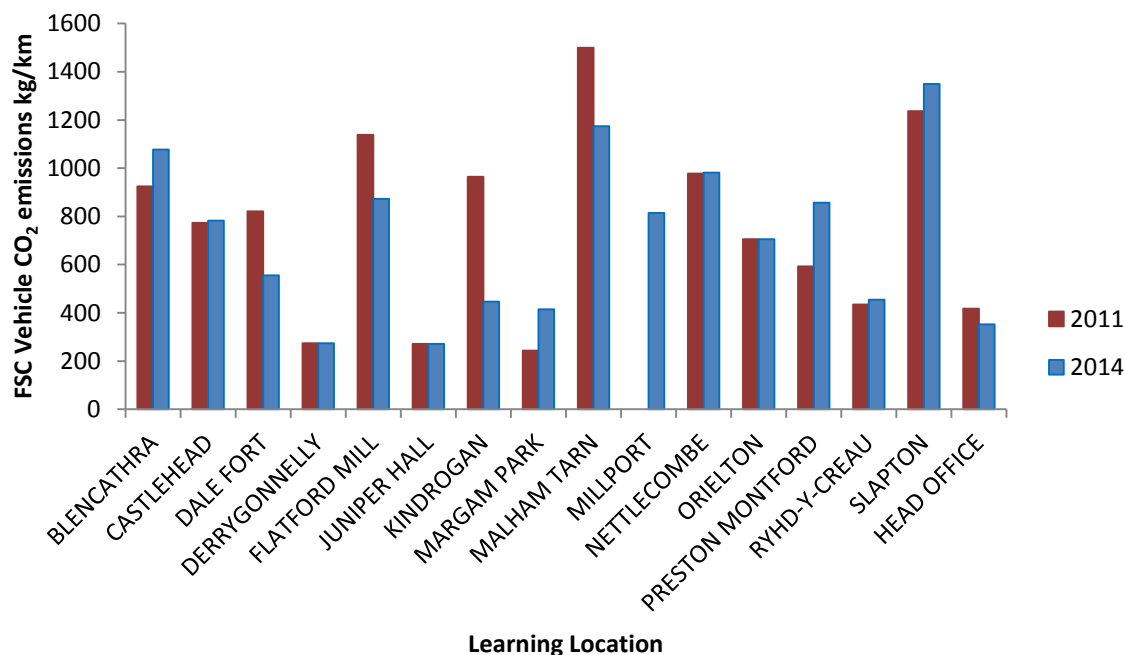
For smaller and more immediate projects this could be either through the centre's own budget or by application to the FSC green fund. This fund was established in 2014 and makes available £20,000 each year to be awarded to such sites who can demonstrate low-cost but carbon-effective improvements. Appendix E gives details of 2014 applicants and where funds were awarded.

### **5.4 Financial Costs and Sources of Funding**

Cost estimates should reflect both capital and revenue. They should also be phased by year and by month. At Blencathra it was equally important that whilst large capital funding and grant provided sufficient payback, the reduction in revenue costs should also be sustainable. The reduction in Blencathra's operating energy budget of 20% is noted above. At Millport, which came into FSC ownership early in 2014, the ongoing energy budget has been running at over £60,000 a year. The impending investment of a new biomass should reduce the operating budget for energy by about 20%.

Sources of funding should be listed and any restrictions on such funding should be made clear. It is helpful to provide documentary evidence of external funding. FSC could then finance either through its own resources; or it may seek grant or even loan funding depending on the circumstances of the project and FSC at the time of letting the contract. The energy improvements at Millport will be funded directly by FSC, whilst North Ayrshire funds accommodation improvements for the reasons noted in section 5.1.

FSC must also have reference to its 'carbon' capital employed. It has a fleet of over 50 vehicles – mostly minibuses. We have compared the carbon emissions for our vehicle fleet in 2011 and as of late 2014, shown in figure 5.1.



**Figure 5.1: Total carbon emissions for FSC vehicles at each learning location of the FSC in 2011 and 2014.**

Although this represents a 1% increase in total vehicle CO<sub>2</sub> emissions FSC has continued with its purchasing policy in respect of minibuses as follows;

FSC started purchasing LDV minibuses in 1998 as and when they were required. An order of 5 LDV Convoy minibuses was received in July 2002 for the organisation. By 2006 the majority of centres were running LDV minibuses. These minibuses had the Euro 3 engine which was CO<sub>2</sub> compliant within the EU. Although these were inexpensive to purchase, the running costs were quite expensive. In 2008 LDV went into administration and so FSC started to purchase Ford's. Ford was also using a Euro 3 engine in their minibuses.

In 2011 FSC approached Furrows Ford regarding the purchases of minibuses. We were offered a dealership and fleet discount which would save the organisation between 20 and 30%. By this time Ford was also using the Euro 4 engine which would also have a CO<sub>2</sub> saving. In 2012 Ford had started using and still is to this day a Euro 5 engine that was EU compliant with a further saving of CO<sub>2</sub> emissions. See Table 1.1 for vehicle contribution to carbon emissions for FSC.

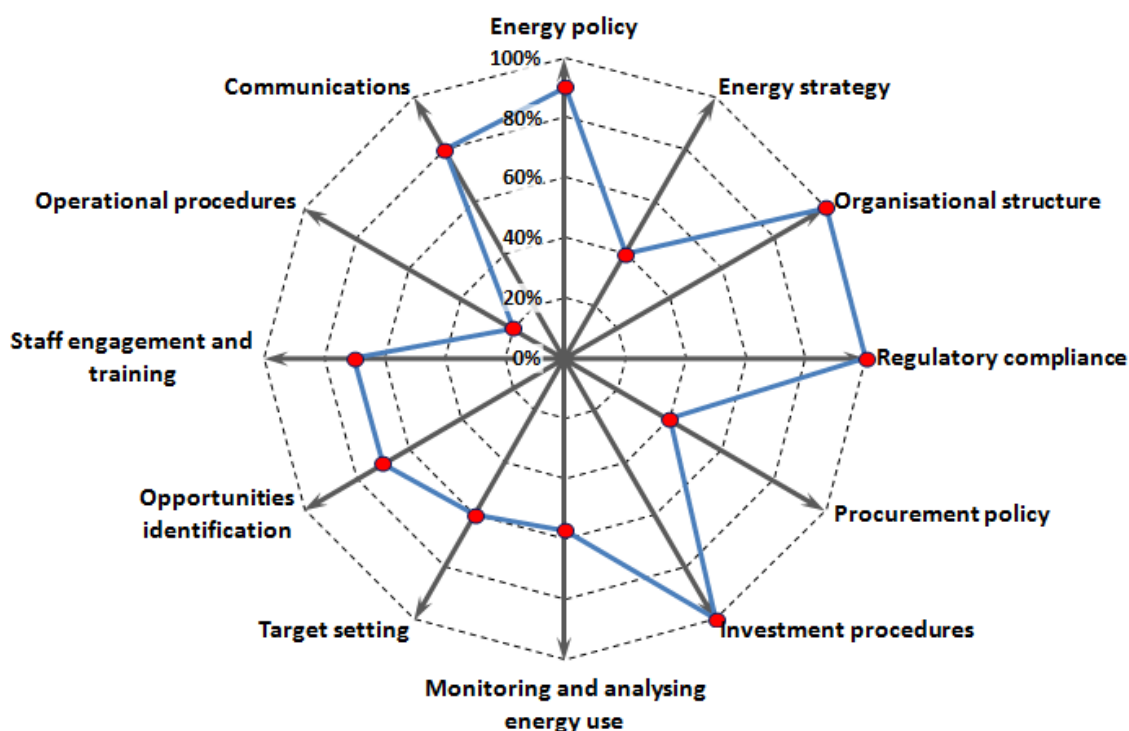
By 2016 we hope to part exchange all LDV minibuses within the organisation to Ford minibuses. All LDV minibuses are running emissions of 265 CO<sub>2</sub> per kilometre compared to 208 CO<sub>2</sub> per kilometre a CO<sub>2</sub> saving of 57 CO<sub>2</sub> kg per kilometre per vehicle therefore a total saving of 342 CO<sub>2</sub> kg per kilometre.

In January 2016 Ford will be introducing a Euro 7 engine that will be even less CO<sub>2</sub> per kilometre. Following this date, every new vehicle purchased by FSC will have this engine that meets EU emission limits.

## 6. Actions to Embed Carbon Management in our Organisation

The Field Studies Council has used the Carbon Trust’s energy management matrix to see how far carbon management is embedded throughout the organisation. The matrix has six subject headings and at the start of 2014 we assessed the level of embedding against each heading (finance is detailed in Section 5 of this plan). The scores of where we were as an organisation at the start of 2014 are shaded in pink, with the intention that by 2020 we will move up the matrix and achieve a score of 4 in each category. The matrix can be seen in Appendix B.

A more detailed Energy Management Assessment was also executed using the Carbon Trust templates. For twelve key energy management areas we scored the FSC against a number of characteristics. Again the aim was to examine where the FSC can further develop with the target of being as near as possible to 100% for each category by 2020. The results are summarised in Figure 6.1 and the full assessment can be seen in Appendix C.



**Figure 6.1: Energy Management Assessment results for the FSC based on a Carbon Trust Template.** Results are for where the organisation stood at the start of 2014.

From the Energy Management Assessment it would appear that there are areas of strength such as in our investment procedures, regulatory compliance and organisational structure. The Environment Group, along with the OMT and Head of Learning Locations, need to examine areas of relative weakness such as operational procedures (including reporting), procurement policy, target setting, and monitoring/analysing of energy use to ensure performance is high across all areas of carbon management in the organisation.

## **6.1 Policy – embedding CO<sub>2</sub> saving across our organisation**

The FSC already has in place policies that shall be reviewed regularly by the FSC Environment Group including:

- Environmental Policy (Appendix A)
- Sustainable Procurement Policy (at centre level – being adapted into an organisational document in 2015).

All policies are reviewed annually by the FSC Environment Group. The overarching Environmental Policy has been approved by the FSC Business Managers and endorsed by the FSC trustees. This policy makes explicit that we will “Encourage our staff to develop local sustainable initiatives that support the Field Studies Council’s commitment to carbon reduction striving towards improved business efficiency, environmental performance and responding positively to environmental change.” Therefore this Carbon Management Plan is an integral part of our existing environmental planning and management.

The Carbon Management Plan is also an important part of achieving the FSC’s Vision for 2020 as there is a commitment to reduce carbon emissions by 40% per learner and make the FSC a low-carbon institution. The reduction in carbon emissions is further part of the FSC’s Financial Strategy to reduce energy consumption and thereby making savings that can be directed to development of our educational products. To achieve these aims, the FSC is committing funding and now has an annual £20,000 green fund that all FSC learning locations can apply, principally for funding green initiatives and to reduce carbon emissions and long-term operating costs. This will be allocated annually each spring by the FSC Environment Group.

We are already making progress towards our targets thanks to the commitment shown by all our staff. It is fully appreciated organisationally that there is still a lot more we can do and with the extra funding, as well as more focused strategy, it is expected that significant developments will be made in the years leading to 2020.

## **6.2 Responsibility – Making it clear that saving CO<sub>2</sub> is everyone’s job**

### ***Building on current practice***

Much of FSC's direct work with customers is involved in raising awareness amongst our learners about environmental issues through first-hand experience. Our strap line is 'Bringing Environmental Understanding to All'



**Figure 6.2: Field Studies Council logo and strap line.**

Though much of this could be seen to be the responsibility of the education staff through their teaching, FSC has been working steadily, building on the good practice at various centres to draw together examples of how the running of the centre itself can supplement and support awareness of

environmental issues with climate change and carbon issues a priority topic. Aspects such as classroom displays, recycling facilities, information about heating choices and the Fair Trade products that we sell in our shops all bring environmental performance issues to the customers' attention.

Through training workshops for hospitality staff we have increased the focus at a centre level on how the whole centre can draw attention to these matters through how the centre is run, through the purchasing and operational aspects and via hospitality delivery. Much of this was already happening at most centres, but more recent work has looked to bring this together as a coherent policy. This is to make sure that learners are aware of it and able to actively participate in decisions whilst also considering how they themselves might take this learning aspect forward in their own lives away when they return from the FSC centre.

On a day to day basis at centre level maintenance staff are typically responsible for the efficient environmental performance of buildings and plant and the improvements and monitoring of this.



**Figure 6.3: Some examples from centres showing environmental initiatives that can reduce carbon emissions or show the effects of a changing climate.**

From left to right: Environmental News Board showing stories of how climate is affecting species worldwide; Information displayed in a bedroom regarding room heating; A central recycling point in student accommodation.

Many initiatives have become embedded in our usual routines, for example the provision of recycling bins or the use of environmental cleaning products. However, the challenge is to ensure that all staff are aware of these achievements and improvements, to keep this fresh and develop new initiatives to keep pace with current expectations and trends.

Heads of Centres are responsible for all areas of environmental performance within their Centres. Annual applications for large-scale Capital Maintenance and Development funding include environmental performance as one of the key assessment criteria.

The responsibility for environmental performance at Director level is shared by two Operations Director's, one responsible for improvements to buildings and plant and the other responsible for education and behavioural change.



All new staff have environmental responsibilities included within their job descriptions. It is planned to develop this further by ensuring that environmental performance forms part of the induction and review tasks for all new staff and as part of the trainee tutor scheme. See **Induction** project in Table 4.2.

### ***EcoCentres***

EcoCentres was one of our first initiatives towards carbon management and environmental improvement and FSC Centres have been involved with this scheme since it was first established in 1998.

Due to the predominantly schools-based nature of our customers, FSC took the decision that it would follow the EcoCentres scheme ([www.eco-centres.org.uk](http://www.eco-centres.org.uk)). The programme is based on the successful international EcoSchools award, encouraging organisations to actively promote sustainable living by involving staff and the local community in their environmental activities. The EcoSchools programme is very popular in schools across the UK and allows for FSC to create a resonance with visiting teachers and the opportunity for schools to transfer learning from an FSC centre to their school.

The Eco-Centres award programme is for public and community buildings, providing a framework for participants to embed sustainability at the heart of their ethos and operations. The Eco-Centres national award, run by Keep Britain Tidy, works with organisations to reduce the environmental impact of their buildings. Within Eco Centres programme centres must deliver a structured environmental management process and through this report on, monitor and actively reduce energy, water usage and resources. This provides a valuable framework and external assessment to guide our improvement.



**Figure 6.4: EcoCentres England logo**

A crucial aspect of Eco Centres is that there must be an eco-committee with representation from all departments (housekeeping, administration, education, catering and maintenance). This ensures that all actions are discussed, agreed and enacted with awareness and approval of the whole centre team. This has been effective in engaging staff across a dispersed organisation and has led to some innovations that have developed within Centres and this could be better shared between Centres. For example some Centres have produced Eco-Newsletters and some have been involved in national campaigns such as Earth Hour.



**Figure 6.5** Some Centres have been involved with national campaigns such as Earth Hour.

The lead person from each Eco Committee will feed into the Environment Group which is key to driving forward and reporting on progress at a charity wide level. Therefore, these groups will also be engaged, thus disseminating to all staff, and therefore ultimately our visitors, the targets and vision set out by this Carbon Management Plan and supporting policies.

During 2013 all FSC centres in England have re-registered to comply with the new requirements of Keep Britain Tidy in regards to achieving Eco Centre status. In the past 4 months 2 centres have been awarded their Eco Centre Status with others working towards accreditation within the next 12 months. In Wales all centres remain Eco Centres and Margam Park Discovery Centre is aiming to achieve their platinum flag showing successful renewing of their flag 3 times. In Northern Ireland our centre has achieved the EU Eco flower designation: awarded for adopting energy efficiencies and showing reductions in our footprint. In Scotland we have one centre awaiting EcoCentre accreditation and one new centre that will be working towards this.

Eco-Centres is a well-established and essential part of our work towards carbon management. It is planned to further strengthen this by ensuring that all Centres have renewed accreditation by the end of 2016. Eco-Centre Committees will be developed through a more significant status, chaired by a team leader. They will have a more clearly defined focus on behaviour change projects by enthusing both staff and visitors through campaigns, competitions, events, education, interpretation and staff training. We will celebrate our successes and suggest ways for visitors to get involved. We will keep policies and plans as living documents through annual reviews and updates. Eco-Centre Committees will have a clear link with the Environment Group through the Eco-Centre representative. Best practice will also be better shared and communicated between Centres, using the intranet, eco-newsletters and the annual staff conference. See **benchmarking** project in Table 4.2.

### ***Quality Badge Plus***

In addition to the running of the centres and putting in place processes that reduce carbon emissions FSC seeks to embed learning and actions towards reducing environmental impacts through its primary product – first-hand experiences and fieldwork. To assess quality and progression FSC undertakes an external assessment of its performance at centres in relation to teaching and learning provision every two years. This bespoke assessment system has built on the Learning Outside the Classroom Quality Badge accreditation to include a greater focus on teaching and learning elements.



**Figure 6.6: Council for Learning Outside the Classroom logo**

As part of this process we have included an additional focus on how well each Centre demonstrates *"an understanding of sustainability issues and shares this understanding with users"*. This aims to raise the importance of these issues amongst staff, to encourage them to introduce sustainability into their teaching and to find innovative ways to support students to take action in their own lives.

This includes the centres' whole business delivery from teaching, through displays, through food production and preparation and in systems for energy and waste. The final report presented to the centre will include exemplars of the innovative ways which Centres are teaching about global issues, climate change, sustainability, environmental awareness and biodiversity, with a particular emphasis on how these themes are linked to the fieldwork students are carrying out.

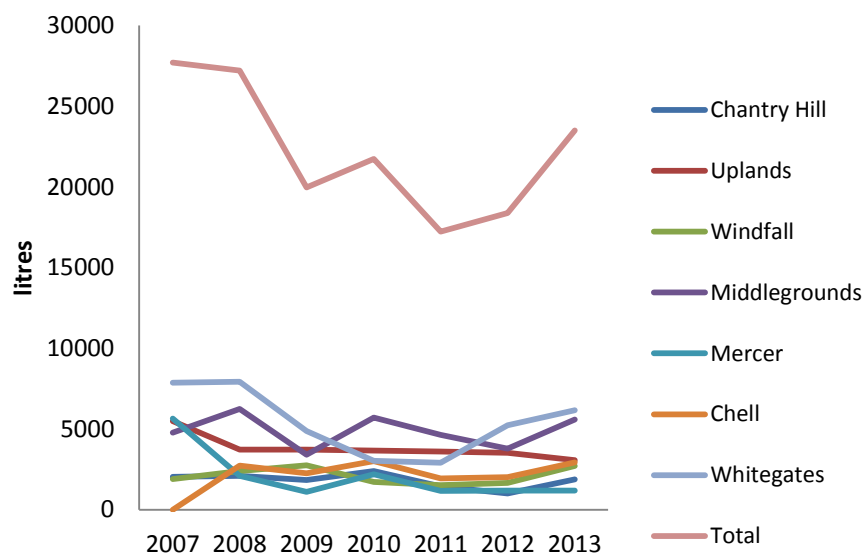
Throughout the FSC our tutors engage visitors in learning about biodiversity through inspiring fieldwork locations in biologically-rich habitats and ecosystems. Our tutors are knowledgeable about the biodiversity in these locations and students are able to develop their understanding very rapidly. In the very best Centres links are made with global issues and carbon management during teaching or through displays. Equally in some centres it is noted as an area for improvement and this is highlighted in the list of actions needed to be addressed at a centre level. The organisation has a biodiversity plan which is working towards improving the knowledge of teaching teams and developing inspirational natural historians.

Action plans and quarterly reporting systems are linked to these Quality Badge Plus reports and the progress centres are making towards key objectives highlighted is communicated at a centre level through to Directors of Operation, CEO and trustees. By having these sustainability objectives linked directly through the assessment criteria of the Quality Badge Plus and reporting structures associated with this, there is a drive for capital investment and behaviour change that will ultimately reduce carbon emissions across the organisation.

We are planning to strengthen delivery of sustainability this further by developing the assessment of links to sustainable development during taught courses. This will include developing the sustainable development criteria in the Quality Badge Assessment. See **Quality Badge** project in Table 4.2.

### **6.3 Data Management – Measuring the difference, measuring the benefit**

The Energy Management Assessment highlights this as an area for improvement. Some Centres have monitored environmental performance for many years and provides a useful long-term data set and context for this plan. More recently we have identified a need to develop a co-ordinated approach to data management across the FSC.



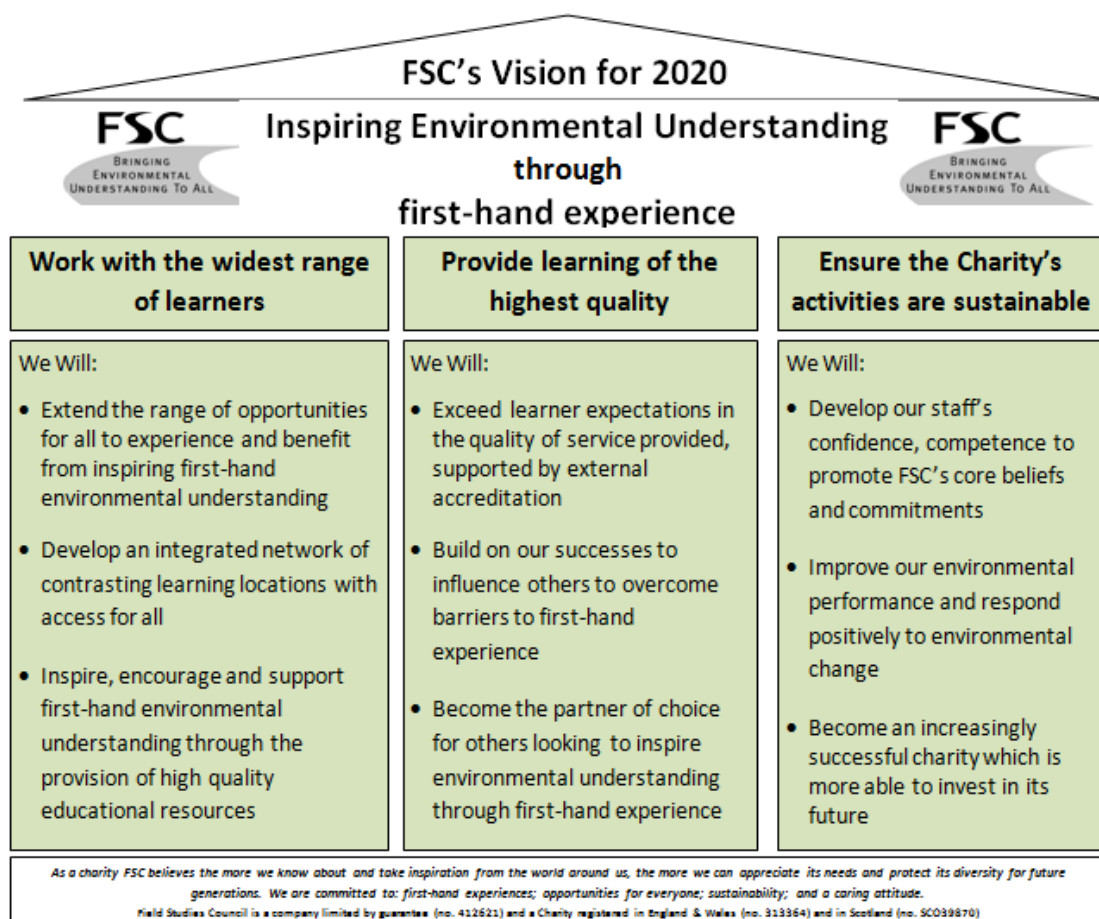
**Figure 6.7: Long term oil usage data set for Slapton Ley Field Centre.**  
 The graph shows an overall decrease in oil use despite changes in visitors, weather and increasing expectations.

Data management is coordinated by the FSC Central Finance Team and reported initially to the Director of Operations, the FSC Environment group and the Trustees. The Central Finance team measures both usage and cost of energy for both individual centres and FSC as a whole. This allows meaningful year on year comparisons and analysis of trend. The Central Finance Team is also responsible for coordinating the collection of data for feed in tariffs. Applications for RHI must be discussed and approved with the Director of Finance. This applies for both the application and the ongoing monitoring. We are planning to provide monthly updates of energy use to Centres to support our carbon management and impacts reported annually in FSC Executive Report. See **Data Management** project in Table 4.2.

## 6.4 Communication and training – ensuring everyone is ready, willing and able

### *From FSC Vision to personal contribution*

The FSC has had a long history of bringing staff together to work on our energy usage both within individual centres, across regions and as a whole charity. The desire to improve our environmental performance and respond positively to environmental change is clearly stated within our vision (shown in Figure 6.8) and has been communicated to staff at national conferences, at individual centre action planning meetings and regularly through team briefings. All Centres will have, following Energy Performance Certification, carbon management targets which will be reported annually to the trustees.



**Figure 6.8: FSC's Vision for 2020**

***Setting up of the Environment Group***

To ensure that we get the most from working towards Carbon Trust accreditation of our Carbon Management Plan we have developed a new Environment Group and built on the learning from such initiatives in the past when discussions were held and actions identified but there was varied conviction to deliver. This new group has a representative from our trustees who chairs the group, thus ensuring that the progress and success of the group is clearly communicated to the highest level through committee reports to trustees. There are representatives from all aspects on the group with maintenance, education and management all represented. Three of the directors attend to ensure that what needs to be done is prioritised and followed through.

***Training***

Environmental messages are clearly articulated by the education team during the fieldwork and the classroom sessions. Where centres have special plant and machinery this is then brought to the attention of the all staff. Other centres bring to life their processes and expectations for waste management and energy efficiency through the introductions to the centre by staff during the induction talks.

FSC has coordinated and delivered training for hospitality staff since 2010 that has looked at getting charity wide vision priorities within the running of the centres as well as within education. Focus to date has been on locally sourced, seasonality, and meat-free menus. Progress at individual centres



following such national training has been impressive and creative. Individuals have felt empowered to take new steps, change work processes and convince teams and managers to join them in delivering things differently. Following the success of national training and implementation at individual centres which is then celebrated and shared at regional training, this model is being repeated in relation to carbon reduction and environmental performance management.



**Figure 6.9:** Images of local suppliers illustrated for visitors in the dining room at Slapton Ley as a result of training events.

Staff training is continually planned each year to bring staff together to focus on climate change, sustainability and FSC. The outcomes will be to enable staff to share tips and tricks to train ourselves, train others and share with customers.

Training will be extended and become more co-ordinated for staff in education and maintenance roles as well as hospitality. Training will be provided for Eco Committees members to develop their understanding of carbon management and enable them to provide training at Centre level for all staff. We are planning to share best practice effectively at regional or national levels. This will be embedded as core part of the staff conference annually. See **Training** project in Table 4.2.

### ***Staff conference***

The FSC holds an annual staff conference attended by staff from all centres. In December 2012 we held awareness sessions about Eco Centres and encouraged all centres to re-register and gain the new accreditation. At conference in 2013 we talked about our commitment towards Carbon reduction, shared the news about the work of the Environment Group so far and launched the Green Fund. This was continued in 2014 with workshops and discussions on our core environmental values. The staff conference is a hugely valuable opportunity to look at our values and behavioural change that will ultimately reduce our carbon footprint. It is anticipated that environmental actions and carbon reduction will form a focus of discussions and workshops at the annual staff conference every year.

## **6.5 Procurement – engaging suppliers**

We encourage good environmental practice with our suppliers. FSC notes that in certain markets there can be a premium price paid for “green” fuel. FSC has to balance this within its overall finances. Similarly, whilst we encourage centres to be aware of “food” miles, FSC organisationally has to balance local and national procurement.

Some Centres have sustainable purchasing policies and these and best practice has been shared. We are working towards developing an organisational policy based on best practice. The next step will be to ensure that this is adopted and implemented by Centres. See **Procurement** in Table 4.2.

FSC procures its electricity, mains gas and LPG through tendered national contracts. Centres may well be approached by energy companies or brokers. Such calls should be forwarded if appropriate to the Central Finance Team.

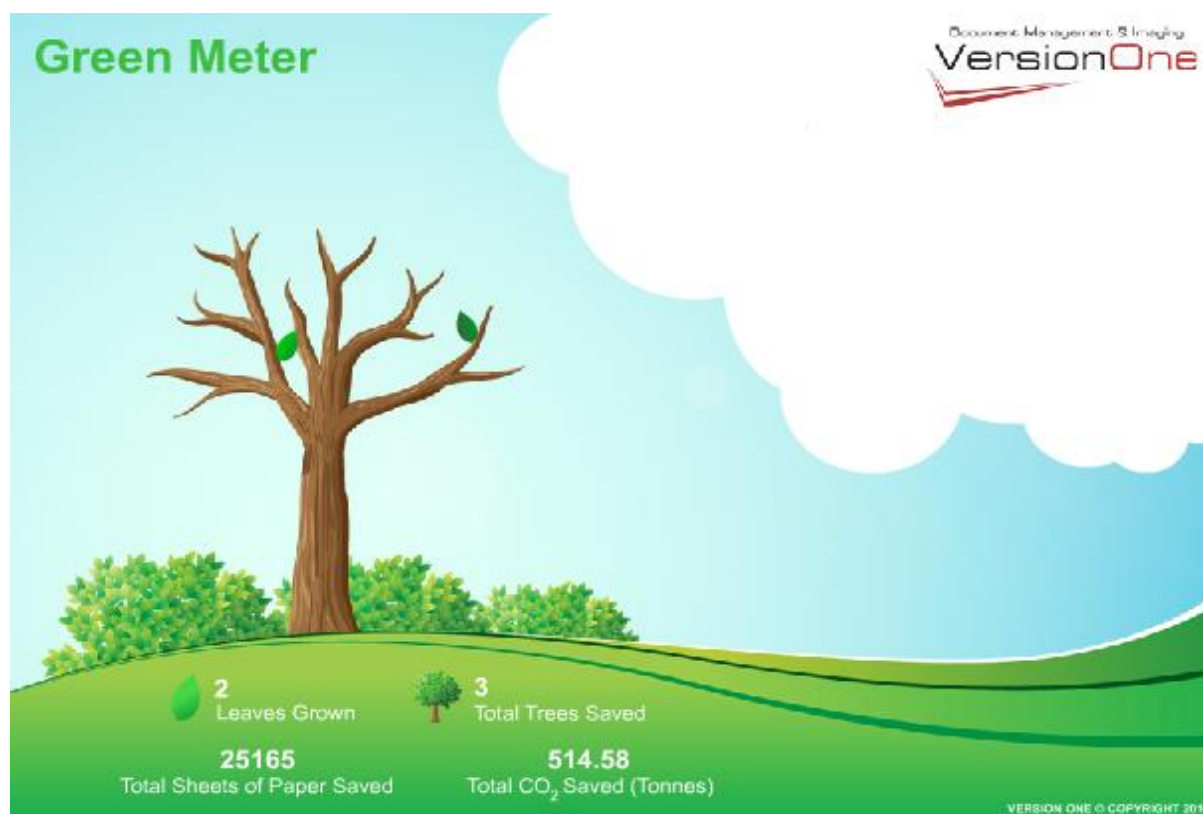
An example of a national deal is with our supplier of LPG – Calor. Centres were buying from their local LPG depot at local prices for as much as 58p per litre. The national deal allowed most FSC centres to procure at 38p per litre. Current prices are 44p per litre even after 4 years.

We would expect suppliers to issue invoices electronically together with their bank details to enable us to both pay them and notify them electronically.

The FSC’s finance packages are Sage 1000 and Version One (V1). Using these packages enables the Central Finance Team to produce financial reports directly out of Sage and into V1 ready for emailing to the OMT or learning locations. This has cut down the use of paper considerably and this can be seen on a “Green Meter” showing the sheets of paper and carbon tonnes saved by using this software.

Following the staff conference in 2014, the organisation will be finalising a new sustainable procurement policy. This will be a guide for all centres to drive how the organisation procures across all departments.

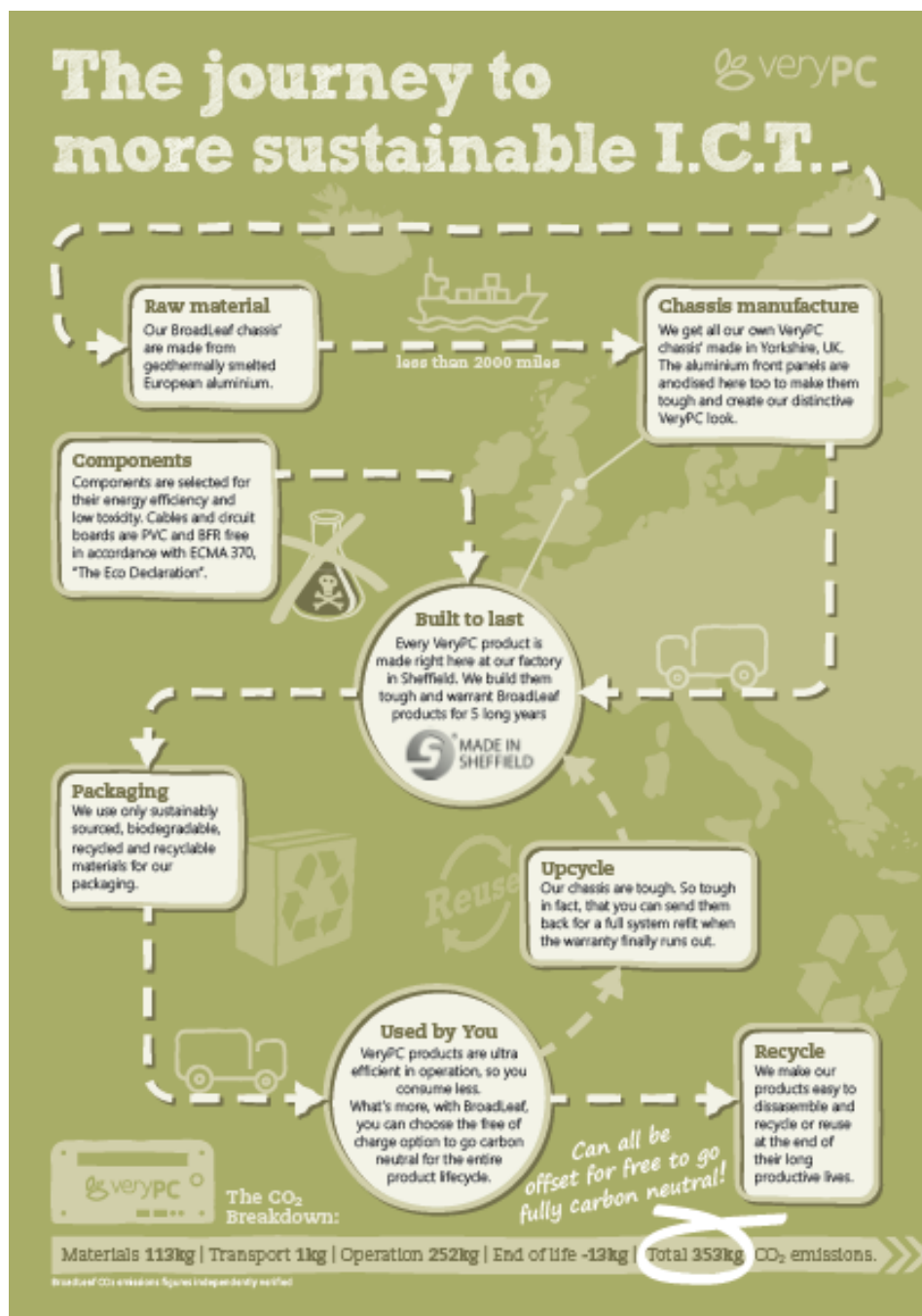
The finance systems for paying staff expenses have been changed and since 2014 they are now paid electronically on a monthly basis. FSC has also implemented new payroll software which will allow notification electronically. This new system will also allow payslips and P60’s to be produced and distributed electronically. We expect this to start in 2015.



**Figure 6.10: Version One Green Meter (as at 10<sup>th</sup> February 2015).**  
Shows paper being saved and relative carbon dioxide emission savings.

**IT Procurement**

Currently the FSC buy desktop PCs wherever we can from Very PC.



**Figure 6.11: The journey to more sustainable ICT – the veryPC machines now being used in offices across the organisation.**

Central purchases of IT equipment will meet energy star ratings for v4 as a minimum. (Current version (v5) is an aspiration) for monitors.

The IT team purchase DEFRA recommended Green PCs from veryPC. Sourcing less toxic, more recyclable components adds to the sustainable value of the PCs. Their latest desktop PCs, the BroadLeaf range are PVC and BFR free and come in an all-aluminium chassis which is machined

exclusively for veryPC in Yorkshire. Reducing the total distance that a product has travelled, and therefore the associated carbon emissions, final assembly takes place at their BREEAM certified factory in Sheffield. Each BroadLeaf PC has its carbon offset by veryPC for a total of 5 years, which is the normal use time for the computers.

As general rule, laptops are purchased for education staff, laptops are more energy efficient than desktops due to the fact that they have to run on batteries. Ideally, all laptops will be Energy Star v4 compliant as a minimum. However the IT team don't purchase laptops on the basis of environmental performance: there are too many different models that change too regularly, and with special offers available, and centres always want the best deal. We configure energy settings taking into account strong feedback from users.

The most important part of purchasing a server is not over spec so that energy isn't wasted in day-to-day running. We also try to purchase the green models that are offered by manufacturers. Ultimately, as we upgrade the ICT in centres we will purchase more energy efficient machines that will lower our carbon emissions.

By standardising photocopiers and not purchasing desktop printers we are both conserving power and using much less ink. The larger photocopiers are much more efficient in their use of ink and have much more stringent power saving settings which are configured straight out the box.

We will purchase more strategically as an organisation. Environmental performance will become key criteria for all purchasing of all IT equipment. We will buy better equipment, on the basis that its lifetime will be longer – overall, this may have more impact than just buying lower energy equipment - as with lower power processors we may find that the lifetime is shorter. This could include buying equipment that is easily upgradeable a much higher priority. FSC currently buys PCs for a 5 year lifetime with 5 year warranty, but offer a renewal after 3 years (where the PC is updated and any unnecessary software uninstalled to improve performance, with optional hardware upgrades, e.g. memory, where appropriate. This will be extended to education equipment and will provide a payback over 5 years.

Proactive thought also needs to be given to strategic purchase of ICT for educational use. Greater use can be made of sharing best practice and growing use of ICT education. We have recently taken a member of education staff from a centre on a sabbatical working with HO staff to enable centres to make best use of their ICT and fully integrate this into their teaching. This aims to reduce the impulse purchase of ICT that may not be used to its potential.

Part of the reasons for purchasing is to meet customer expectations – e.g. to replace tired old PC suites. We need not to lose track of that – but we should aim to buy better/keep equipment fresh, explaining to customers why we do things the way we do.

We will establish a pilot project to assess the lifespan and environmental benefits of higher quality equipment to provide data to persuade business managers of the environmental and economic benefits.

## **6.6 Monitoring and Evaluation – keeping track of progress**

The FSC has scored itself as a two out of four in the Energy Management Matrix. The Environment Group will work with the FSC finance team to ensure that more specific data on energy consumption and vehicle usage is disseminated to centres so that this can then be built in to centre performance management and both organisational and centre business action plans. Although we have work to

be done in this area, there have been significant improvements over the last year already, with monthly energy targets now being monitored.

The monitoring and progress will be regularly reviewed by the Environment Group and information shall be passed to the FSC trustees regularly. It will also form part of discussions by the Operational Management Team and the Heads of Learning Locations.

The progress of our environmental performance will be reviewed in our Annual Report as well as on our website, along with our policies and procedures. Summary information of the work we are doing will also be issued to all staff members in the organisation.



## 7. Programme Management of the CMP

We want to embed the governance and strategic ownership of our CMP into the existing structure and reporting arrangements of the FSC. It is essential that the Operational Management Team continue to have an overview of the programme in order to encourage successful delivery and to identify and remove any blockages hindering progression and implementation.

The chart in Figure 7.1 demonstrates how the carbon management policy determination and implementation is structured in the FSC. The Heads of Learning Locations and OMT will be responsible for energy costs and savings through planning within the parameters of the Carbon Management Plan. The FSC trustees and Environment Group have a key role in policy formation and the Heads of Learning Location have a key role for ensuring policy implementation. Policy formation and implementation will be joined up through the planning round via the Environment Group.

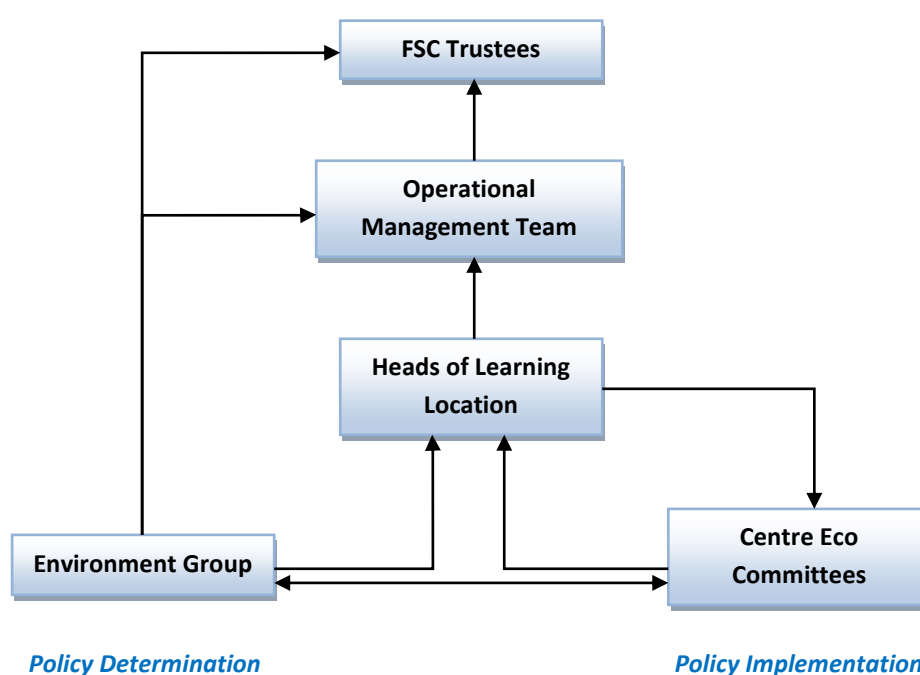


Figure 7.1: Policy determination and implementation structure for the Carbon Management Plan.

### 7.1 Strategic ownership and oversight

During the formation of the Carbon Management Plan, the governance and strategic ownership rested with the Environment Group which comprised or trustees and senior level staff representing directors, finance and management and also team members representing various departments across our Learning Locations. This group will report to the Business Managers and also the FSC trustees who oversee the work of the group. The group will continue to monitor the Carbon Management Plan now adopted fully by the organisation.

In order to actively reduce carbon emissions at centres, energy usage and vehicle costs will be given to the Heads of Learning Location at the Business Managers Meetings. These will also help set targets for reduction and allow oversight by the Operational Management Team. Heads of Learning

Location will also have to report on environmental performance both in their quarterly reports to the Operational Management Team and in their annual report to the FSC trustees.

## 7.2 The Environment Group - delivering the projects

The Environment Group comprises of individuals from the FSC trustees and across different sections of the Field Studies Council (see Table 7.2). The team meets in person twice per annum. Between these meeting there is contact by teleconference or email when needed. The Assistants to the Chair, Officers and Team Members will work with relevant staff members as and when required in order to progress with the implementation of the plan.

Role	Name	Contact details
Environment Group Chair	Professor Brian Chalkley	<a href="mailto:brian.chalkley@plymouth.ac.uk">brian.chalkley@plymouth.ac.uk</a>
Assistant to the chair, management plan/policy	Mr Simon Ward	<a href="mailto:simon.lr@field-studies-council.org">simon.lr@field-studies-council.org</a> 01306 734501
Assistant to chair, educational developments	Mr Andy Pratt	<a href="mailto:andy.sl@field-studies-council.org">andy.sl@field-studies-council.org</a> 01548 580466
Officer – Director of Finance	Mr Richard Walker	<a href="mailto:richardw@field-studies-council.org">richardw@field-studies-council.org</a> 01743 852115
Officer – Director of Operations	Mr Mark Bolland	<a href="mailto:mark@field-studies-council.org">mark@field-studies-council.org</a> 01743 852132
Officer – Director of Operations	Ms Claire Fowler	<a href="mailto:claire@field-studies-council.org">claire@field-studies-council.org</a> 01743 852100
Trustees	Professor Tim Burt	<a href="mailto:t.p.burt@durham.ac.uk">t.p.burt@durham.ac.uk</a>
	Mr Geoff Brown	<a href="mailto:geoffrey.brown@hotmail.co.uk">geoffrey.brown@hotmail.co.uk</a>
	Dr Nicholas Howden	<a href="mailto:nicholas.howden@bristol.ac.uk">nicholas.howden@bristol.ac.uk</a>
	Ms Tara Duncan	<a href="mailto:tduncan@blueyonder.co.uk">tduncan@blueyonder.co.uk</a>
Team Members	Mr Chris Price	<a href="mailto:chris.price@field-studies-council.org">chris.price@field-studies-council.org</a> 01743 852111
	Ms Rachel Summers	<a href="mailto:rachel.sco@field-studies-council.org">rachel.sco@field-studies-council.org</a> 01475 530501
	Mr George Bassant	<a href="mailto:george.bl@field-studies-council.org">george.bl@field-studies-council.org</a> 01768 779401
	Mr Rhys Davies	<a href="mailto:rhys.mt@field-studies-council.org">rhys.mt@field-studies-council.org</a> 01729 830331

**Table 7.2 Environment Group Membership**

## 7.3 Continuity Planning for Key Roles and Risk Management

In order for the Carbon Management Plan to succeed and for environmental performance to improve in the long term it is vital that there is a plan in place. This is as follows:

- The Environment Group will continue to monitor the environmental performance and carbon emissions for the organisation. This will feed into the FSC trustees, Operational Management Team and Centres. Where members leave the committee, they will be replaced with a peer as soon as possible to ensure continuity.
- Eco Committees at Learning Locations will continue to meet and again, where members leave, others will replace these roles. These should have representatives from all

departments in the centre. These committees will communicate with the reps that sit on the Environment Group.

- The Operational Management Team will continue to monitor environmental performance regularly.

It is also vital that we manage the main risks associated with the implementation of the CMP. Table 7.3 outlines what we believe our main risks to be and the mitigating actions we have planned.

Risk Description	Impact	Probability	Mitigating Actions	Current Status
Sustainability and Carbon Management not being seen as a strategic priority by the Chief Executive/ Trustee Chair	High	Low	Chief Executive & FSC Chairperson kept up to date on progress of carbon management. Regular reporting of carbon management.	Both Chief Executive & FSC Chairperson both fully engaged & supportive.
Staff changes resulting in focus on Carbon Management Plan being lost and tasks not being completed.	Medium	Low	Directors of Operations & Environment Group Chair to manage membership and changes. Brief new staff on Carbon Management programme and delegate tasks where appropriate.	All staff changes made successfully. Carbon Management Plan on schedule for submission and being implemented across organisation.
Changes in legislation and other priorities place an administrative burden on the delivery team resulting in insufficient resources to deliver the programme.	Medium	Medium	Directors of Operations and key staff to keep up date with requirements of the legislation as it develops. Manage and prioritise tasks appropriately	Carbon Management key part of strategic vision for the organisation. Centres working to reduce carbon emissions.
Risk to the reputation of the FSC if focus on Carbon Management is lost due to 2, 3 above.	Medium	Low	As above	As above
Funding not available to fully resource the measures in the Carbon Management Plan. Removal of the annual Green Fund for Learning Locations.	High	Medium	Funding resources outlined in Section 5 of this plan	Carbon Management current priority and in FSC Vision document until 2020.
Some staff and students are uncooperative in reducing carbon emissions (including changing behaviour, working practices etc.) as not seen as a priority in their job.	High	Low	Environment Group to communicate objectives of Carbon Management programme clearly to staff and students.	Environment Group already working with Eco Committees and Learning Locations on environmental issues. Governance and Management of the Carbon Management Plan in place as outlined in Section 7.

**Table 7.3 Risk Management**

## **7.4 Ongoing Stakeholder Management**

In order to remain proactive with our key stakeholders, we have developed a Stakeholder Register. This register allows us to see who needs to be communicated with, in what detail, how often and by whom. The Stakeholder Register is detailed in Appendix D. This will be reviewed by the Director of Operations and Assistant to the Chair (Policy) from the Environment Group, on an annual basis.

## **7.5 Annual Progress Review to Senior Management Team**

As detailed in Section 7.1, a quarterly report will be sent by Learning Locations to the Operational Management Team and annually to the trustees reporting on progress. A progress report will be given to the trustees by the Environment Group when they meet three times per annum. The annual report requested from the Carbon Trust will also be sent to the FSC Executive. This report will be produced in January every year by the Environment Group Assistant to the Chair (Policy) and the Director of Operations.

## 8. Summary of FSC's Action Plan for Carbon Reduction

This FSC Carbon Management Plan is a detailed document that has both reviewed our progress to date and outlined our plans for carbon emission reductions for the period up to 2020. The purpose of the final bullet points presented below is to bring together the key elements by a way of an action plan which summarises the work we will be undertaking in order to meet carbon reduction targets.

- **Capital investment:** Investment in projects including Millport Biomass, Orierton stables electrical systems and boilers at Rhyd-y-creuau. Other projects across our multiple learning locations across the UK.
- **Green fund:** Annual £20,000 investment into carbon reduction projects that reduce carbon emissions and inform our environmental education sessions and displays.
- **Behaviour:** Investment of at least 1% of energy expenditure, as recommended by Carbon Trust, into behavioural change programmes for staff across all FSC learning locations.
- **Monitoring energy:** New energy data monitoring and reporting systems. Enable carbon reductions at all learning locations across the UK.
- **Visitor education & behaviour:** Continue to inform our visitors and encourage behaviour change both through formal and informal education at our learning locations.
- **Energy Performance Certificates:** Identify key areas for energy efficiency at learning locations and develop further our list of capital improvement projects to reduce carbon emissions
- **New procurement plan:** To engage more with local suppliers and reduce food miles. To ensure all purchases are from sustainable sources and low carbon footprint.
- **New water plan:** To reduce water use and wastage at centres and lower associated carbon emissions.
- **Benchmarking practice with other organisations:** Maintaining and strengthening links to organisations such as National Trust and EAUC to ensure we maintain momentum for carbon reduction.
- **Vehicles:** Continue to invest in low carbon vehicles
- **Staff Travel:** Reduce car mileage and domestic flights where possible and increase train travel. Invest in new technologies that reduce the need for face-to-face meetings and enable more teleconferencing, videoconferencing, etc.

## Appendix A: Environmental Policy



### Field Studies Council Environmental Policy

Field Studies Council (FSC) is the only environmental education charity dedicated solely to providing informative and enjoyable opportunities for people of all ages and abilities to discover, explore, be inspired by, and understand the natural environment. FSC believes that the more we know about the world around us the more we can appreciate its needs and protect its diversity and beauty for future generations.

FSC recognises the impacts of our operations and activities on the environment. We understand that this is currently of greater importance due to the threat of climate change. FSC is committed to minimising and managing our environmental impact. The FSC will promote this through our education programmes, procurement and by adopting and showcasing carbon reduction strategies, water conservation and waste management to other businesses, stakeholders and the general public.

This environmental policy supports the 'FSC Vision for 2020' to 'Ensure the Charity's activities are sustainable'. FSC is currently working towards Carbon Trust Standard accreditation and EcoCentre status.

#### Field Studies Council is committed to:

- Our longstanding vision of bringing "Environmental Understanding for All". This will include minimising the environmental impacts of our activities and communicating this through our education programme.
- Complying with environmental legislation in an effective and efficient manner.
- Actively working with the environment and communities within which our centres operate.
- Managing our estates and grounds to promote biodiversity and protection of heritage.
- Publishing our environmental objectives and performance through the FSC Annual Report and website.
- Working with suppliers and contractors, as well as using our procurement influence, to achieve sustainable outcomes and meet the environmental aims of the Field Studies Council as so far as practicable.
- Actively seeking to foster and promote environmental understanding to all internal and external stakeholders including employees, members, customers, partnership organisations and the local community.
- Continually monitoring and improving environmental aspects of our products, projects, policies and operations, with a view to managing and minimising environmental impacts and using this to educate and inform others.
- Investing in our environmental performance infrastructure. We will prioritise maintenance and development projects that address the efficient and effective use of energy, raw materials, water and waste.
- Encouraging our staff to develop local sustainable initiatives that support the Field Studies Council's commitment to carbon reduction striving towards improved business efficiency, environmental performance and responding positively to environmental change.

The Field Studies Council will continually review this policy including reflecting new regulatory developments. We will promote best practice, aiming to meet the requirements of our corporate plan and vision.



## Appendix B: Energy Management Matrix for FSC



### Energy Management Matrix

Level	Energy Policy	Organising	Training	Performance Measurement	Communication	Investment
4	Energy Policy, Action Plan and regular reviews have active commitment of top management	Fully integrated into senior management structure with clear accountability for energy consumption	Appropriate and comprehensive staff training tailored to identified needs, with evaluation	Comprehensive performance measurement against targets with effective management reporting	Extensive communication of energy issues within and outside of organisation	Resources routinely committed to energy efficiency in support of organisational objectives
3	Formal policy but no active commitment from top management	Clear line management accountability for consumption and responsibility for improvement	Energy training targeted at major users following training needs analysis	Weekly performance measurement for each process, unit, or building	Regular staff briefings, performance reporting and energy promotion	Same appraisal criteria used for energy efficiency as for other cost reduction projects
2	Un-adopted policy	Some delegation of responsibility but line management and authority unclear	Ad-hoc internal training for selected people as required	Monthly monitoring by fuel type	Some use of organisational communication mechanisms to promote energy efficiency	Low or medium cost measures considered if short payback period
1	An unwritten set of guidelines	Informal, mostly focused on energy supply	Technical staff occasionally attend specialist courses	Invoice checking only	Ad-hoc informal contacts used to promote energy efficiency	Only low or no cost measures taken
0	No explicit energy policy	No delegation of responsibility for managing energy	No energy related staff training provided	No measurement of energy costs or consumptions	No communication or promotion of energy issues	No investment in improving energy efficiency

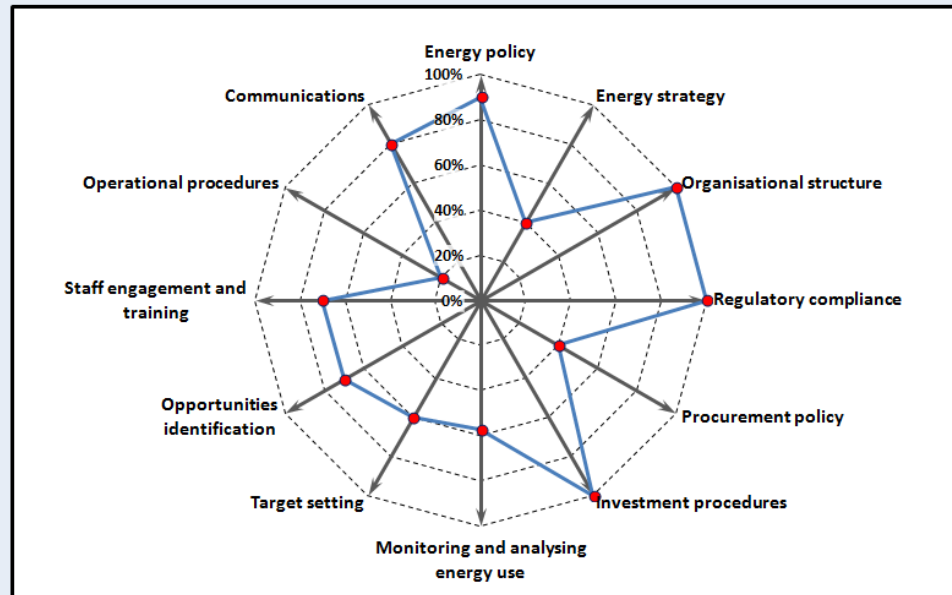
<b>Input Score</b>	4	2	2/3	2	3	3/4
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## Appendix C: Detailed FSC Energy Management Assessment



### Energy Management Self-Assessment Summary

Characteristic	Score		% score
	Actual	Max	
<b>Management Commitment</b>	<b>25</b>	<b>32</b>	<b>78%</b>
Energy policy	9	10	90%
Energy strategy	4	10	40%
Organisational structure	12	12	100%
<b>Regulatory Compliance</b>	<b>10</b>	<b>10</b>	<b>100%</b>
Regulatory compliance	10	10	100%
<b>Procurement and Investment</b>	<b>16</b>	<b>22</b>	<b>73%</b>
Procurement policy	4	10	40%
Investment procedures	12	12	100%
<b>Energy Information Systems &amp; Identifying</b>	<b>21</b>	<b>34</b>	<b>62%</b>
Monitoring and analysing energy use	8	14	57%
Target setting	6	10	60%
Opportunities identification	7	10	70%
<b>Culture &amp; Communications</b>	<b>17</b>	<b>30</b>	<b>57%</b>
Staff engagement and training	7	10	70%
Operational procedures	2	10	20%
Communications	8	10	80%
<b>GRAND TOTAL</b>	<b>89</b>	<b>128</b>	<b>70%</b>



Organisation:	Field Studies Council
Date completed:	08 April 2014
By:	Mark Bolland & Simon Ward

## Appendix D: Stakeholder Management

Group	Influence	Impact	Key Interest	Information Needs	Means of Communication	Responsibility for Communication
FSC Executive Committee (trustees)	High	High	Carbon Management, Costs to FSC.	Reports and presentation at each of the Executive Committee Meetings, three times per annum	Reports from Environment Group three times per annum. Verbal updates at meetings.	Environment Group Chair, Assistant to the Chair (Policy), Director of Operations.
Finance Committee	High	High	Costs to FSC, Green Fund.	Reports and presentation at each of the Executive Committee Meetings, three times per annum	Reports from Environment Group three times per annum. Verbal updates at meetings.	Assistant to the Chair (Policy), Director of Operations.
Education Committee	High	High	Carbon Management, Integration into Educational Products	Reports and presentation at each of the Executive Committee Meetings, three times per annum	Reports from Environment Group three times per annum. Verbal updates at meetings.	Assistant to the Chair (Policy), Director of Operations.
Environment Group	High	High	Costs, Footprint, Performance & identification of carbon-saving projects, Inclusion in Educational Products	Updates from centres and organisational policy.	Face-to-Face Meetings twice per annum. Other video conference meetings and email where required.	All Members.
Heads of Learning Locations	High	High	Costs, Footprint, Performance & identification of carbon-saving projects, Inclusion in Educational Products	Communications from Environment Group and OMT	OMT reports, Environment Group Reports	Environment Group, OMT

Field Studies Council Carbon Management Programme  
**Carbon Management Plan**



Eco Committees	Medium	Medium	Footprint, Performance & identification of carbon-saving projects	Communications from Environment Group Reps	Regular monthly meetings at each learning location.	Environment Group Reps
Head Office Departments	Medium	Medium	Footprint, Performance & identification of carbon-saving projects	Communications from Environment Group and OMT	Reports from Environment Group. Staff Conference.	Director of Operations, Director of Finance
All Staff	High	Medium	Footprint, Performance & identification of carbon-saving projects	Communications from Environment Group, Eco Committees and Heads of Learning Location	Reports from Environment Group. Staff Conference.	All members of the Environment Group
All Visitors	High	Medium	Footprint	Communications from tutors, environmental messages from all staff and from around the centre via displays, etc.	Educational Products, tutors, Displays	All Staff

## Appendix E: FSC Green Fund Applications 2014

Centre	Money Applied for	Project	Green Fund Allocation?	Comments
Millport	£18,931	Eco Bike Shelters	-	Concerns over sustainability in Millport for metallic shelters. Huge costs for bike shelters - concerns over value for money. Unsure of links to Hull University? <b>NOT FUNDED.</b>
Margam	£3,400	Composting	£3,400	Liked the project. Just ensure compost produced meets legislation. <b>FUNDED.</b>
Preston Montford	£2,180	Composting toilet & allotment creation	-	Compost Toilet - commercial waste. Concerns of treatment for human waste that meets legislation. Min 7 years before compost can be used as a fertiliser unless heat treated. Needs approval from Local Authority and Environment Agency to have installed. Bid was well liked and would encourage resubmission in 2015 with evidence. <b>NOT FUNDED.</b>
Rhyd-y-creuau	£3,375	Water conservation - showers/compost toilet	£623.75	Compost Toilet - commercial waste. Concerns of treatment for human waste that meets legislation. Min 7 years before compost can be used as a fertiliser unless heat treated. Needs approval from Local Authority and Environment Agency to have installed. Bid was well liked and would encourage resubmission in 2015 with evidence. <b>NOT FUNDED.</b> Showers - need good interpretation to communicate project to customers, staff and further afield. <b>FUNDED.</b>
Castle Head	£4,790	Wood burning stoves	£4,790	Believe this would be more efficient and cost saving. Has listed building consent been given? Strong bid. <b>FUNDED subject to evidence provided for listed building consent ASAP.</b>
Preston Montford	£2,744	Hedges for Wildlife	£2,744	Clear links to teaching and explicit community links. Original Bid. <b>FUNDED.</b>

Field Studies Council Carbon Management Programme  
Carbon Management Plan



Castle Head	£1,270	LED Lighting & PIRs	£1,270	Communication and Education links could be stronger. Idea is good. Would like to have seen some carbon saving calculations. Would encourage further/wider interpretation. <b>FUNDED.</b>
Blencathra	£5,000	Hydro Electric Battery Store	-	Very brief bid. Quotation vague. Mention co-funding but no detail. Bid was a great idea and would encourage resubmission with detailed costings in 2015. <b>NOT FUNDED.</b>
Preston Montford	£6,750	Interpretation Project	-	Who would complete the artwork? Professional? Project was like and would follow on from hedge project - reapply in the future. <b>NOT FUNDED.</b>
Orielton	£993.92	Wildlife/Veg Garden	-	Think this is a good project but too small. If it is to work, this is underquoted and match funding unclear. Good idea and reapply in 2015 with greater plan in place. <b>NOT FUNDED.</b>
Slapton	£4,500	Centre Interpretation	£4,500	Part funding was good. Could this be a template for other centres - would encourage sharing. Professional artwork required. <b>FUNDED.</b>
Amersham	£529	Recycling Bins/Water Butt	£529	Not an innovative project. Limited outcomes? Would have a visual impact. Need to have strong interpretation. <b>FUNDED.</b>
Castle Head	£1,910.40	Secondary Glazing	-	Great idea. Has listed building consent been granted? Unclear. Possible maintenance application or reapply in 2015 with evidence supplied? <b>NOT FUNDED.</b>
Flatford Mill	£350	Compost Hot Bins	-	Scores applied was worrying. Worried that the bins are too small for the amount of waste provided by the centre. Needs rethinking. <b>NOT FUNDED.</b>
Malham Tarn	£15,906	Secondary Glazing	-	Good idea. Has listed building consent been granted? Do we have National Trust consent? Unclear. Clear educational benefit? Possible maintenance application or reapply in 2015 with evidence supplied? <b>NOT FUNDED.</b>
Malham Tarn	£464	Insulation	-	Unsure of actual benefit. Aesthetic Impact? <b>NOT FUNDED.</b>
Malham Tarn	£500	Recycling Bins	-	Not an innovative project. Limited outcomes? Would need to have strong interpretation. Unsure of quote. <b>NOT FUNDED.</b>



Field Studies Council Carbon Management Programme  
**Carbon Management Plan**



Blencathra	£3,000	Drying Room Development	-	Very brief bid. Quotation vague. Mention co-funding but no detail. Bid was a great idea and would encourage resubmission with detailed costings in 2015. <b>NOT FUNDED.</b>
Malham Tarn	£1,225	Inline Fuel Meters	£1,225	Like the idea but interpretation and education concerns - bid very minimal. Would like to fund but need a much more detailed bid. Possible funding after resubmission in 2014. <b>FUNDED only if sufficient detail provided ASAP.</b>
Malham Tarn	£2,500	Planters	-	Felt minimal impact. <b>NOT FUNDED.</b>
Amersham	£1,740	Weather Station	-	Met Office will provide this equipment at no charge. <b>NOT FUNDED.</b>

## Appendix F: FSC Staff Conference Programme December 2014

Day 1 Tuesday 9th December					
Afternoon start time 1.30pm.					
		Why	What	How	Who
1.30	2.00	Highlight themes links this year's work to last year's discussions	conference opening and scene setting	Linked to the New corporate plan <ul style="list-style-type: none"> <li>Based on input from last year's conference</li> <li>Particularly the Reaching into the Outside</li> <li>Highlight the new aspects</li> <li>Link to values and carbon management</li> </ul>	Rob Lucas
2.00	2.30		KEYNOTE	Outdoor philosopher, writer, activist and cyclist <a href="http://www.outdoorphilosophy.com">http://www.outdoorphilosophy.com</a>	Kate Rawles
2.30	3.00	action to date	Carbon plan	highlight the process, indicate milestones identify commitments for centres <ul style="list-style-type: none"> <li>introduce the eco champion role and links to centre action plans</li> </ul>	Simon Ward
3.00	3.15	bring it back to FSC	Vision for FSC and Targets	<ul style="list-style-type: none"> <li>Ref. to success to date when we focus - save 50p per visitor night (food costs) energy, challenge re 'other'....</li> <li>what could we do differently to save 15% re carbon</li> <li>BE CLEAR ON TARGETS AND DATA COLLECTION/SHARING</li> <li>celebrate low impact travel solutions for arriving at BL</li> <li>Totals and financials for charity as whole and centres. spotlight on process/metrics/successes</li> </ul>	Richard Walker
3.15	3.30	others are doing this	showcase of Carbon management from another organisation	Bob Cartwright to talk through what they have done, successes and lessons learnt Focus on behavioural change challenges and successes	Bob Cartwright Vice Chair Nurture Lakeland and former Director LDNPA Park Services
4.00	5.00	WORKSHOP SESSION 1 Introduce Facts, Updates, News and Snippets of action	Learning about Carbon	Beginning the discussion - Admin Focus	George Bassant Carbon Trust materials
			Learning about Carbon	Carbon - facts not fiction Bringing the information to life for students	Sam Rudd/Robin Sutton Carbon Trust materials



		to date.	Learning About Carbon	beginning the discussion.....Hospitality focus	Lewis Winks Carbon Trust materials
			values workshop	For those that have not done the workshop elsewhere	Tom Deacon
			tour of BL and biomass	Practicing what we Preach - Seeing what has been achieved at Blencathra and how it is brought to the attention of visitors.	Tim Foster/Matt session BL1
			Eco Champions -	Their role in details, developing momentum What do we need to get going	Rachel Summers/Rhys Davies for Eco Champions only.
5.00	5.30	focus sessions for Head of Centres and Education Team Leaders	Prioritising Environmental Performance	Performance reporting and assessing quarterly reports, QB+, systems and processes. Targets for each centre.	Mark Bolland/Richard Walker
			Quality Education and Environmental performance.	ETL how environmental performance and values will be reflected within the QB+	Andy Pratt/Claire Fowler

Administrative staff		Hospitality staff		Education staff		Head of Centres	
<b>Day 2 Wednesday 10th December</b>							
All Day		Visual Minutes	an innovative method of recording discussions and themes			Kirsti Davies, <a href="http://www.morethanminutes.co.uk">www.morethanminutes.co.uk</a>	
9.15	9.30		set up the day	FSC values and associated behaviours		Rob Lucas/Claire Fowler	
9.30	10.30	Perspectives on Values	impacts of values on FSC as a charity	<ul style="list-style-type: none"> <li>Ben - brand... motivation... customers... selling</li> <li>Cathy - supporters... FSC as a charity... members.</li> <li>Jennie - grants... partners....finances</li> <li>Caroline - staff recruitment and retention... liP</li> <li>Sue - reputation... not veneer...impact</li> </ul>		* take the common thread of what we say and what we do. If we are and environmental, people focussed, biodiversity aware... committed... etc.	
11.00	12.30	WORKSHOP SESSION 2 Stimulus and	sustainable procurement...	non-food - admin and housekeeping focus		John Blair... Lesley (CH) Carbon Trust session Tom Deacon	



		<b>Inspiration</b>  move from a list of facts to a new way of thinking/behaving	Value added teaching.	RWL lessons from the project Lewis Winks
			FSC - what story are we telling to others	Ben Worth
			Sustainable procurement <b>food</b> focus.	Kate and Andy (SL) Carbon Trust session
			Using our sites and centres to tell the carbon story....	George Bassant and Nick Paskin
			Personal Challenges - carbon foot printing and making pledges...	Rachel Summers Carbon Footprint WWF
			Green fund Celebrating actions taken to date, preparing for 2015	Simon Ward
			Practice what we preach - the Blencathra story	BL staff Repeat session. BL3
2.00	3.15	<b>WORKSHOP SESSION 3 Stimulus and Inspiration</b>  move from a list of facts to a new way of thinking/behaving	A chance to walk to the hydro turbine... starting at lunchtime and then including a tour of the Blencathra site	BL staff Repeat session, BL5
			Personal Challenges - carbon foot printing and making pledges...	Andrea Leng Carbon Footprint WWF
			Climate change and geography - having the conversation, getting students to think about it.	George/Sam/Tom
			Climate change and biology - having the conversation, getting students to think about it.	Robin/Lewis
			What can we learn from Scotland re values and curriculum	Rachel Summers
			FSC - what story are we telling to others	Ben Worth - repeat session
			Using our centre grounds to support our messages	Adrian PM - habitats Tim BL- renewables/ fern garden Jane MP pond/stream, garden
			Living lightly through food choices	Hospitality team - Naomi Forse RyC, John Ramierez FM
3.30	4.30	<b>bring it back together</b>  Doing what we say..... saying what we do	in centre teams  <ul style="list-style-type: none"> <li>• create posters to show action plans.</li> <li>• produce communication plans</li> <li>• clarify challenges specific to centre</li> </ul>	HoC and eco champions Prep work is to bring forward any commitments to date... make sure that we leapfrog forward not restate current work.
		<b>Seeing our next steps...</b>		
4.30	5.00	<b>why we are</b>  Amazing world	the visual minutes...Share what we will do now with	Rob Lucas/Claire Fowler



		<b>bothered</b>	positive change personal challenge	all this info	
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Administrative staff	Hospitality staff	Education staff	Head of Centres
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**Day 3 Thursday 11th December**

		<b>Why</b>	<b>What</b>	<b>How</b>	<b>Who</b>
1 hour	9.30 - 10.30	Capturing the momentum	Sharing what we have learnt	Highlighting actions planned	Simon Ward and the Environment Group.