

Cut the Carbon Fund

South Staffordshire College case study



Title of project	LESS (Lowering Energy Survey System)	
Lead partner organisation name and address	South Staffordshire College The Green Cannock Staffs WS11 1UE	
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1. Aims of the project	<p>The aims of the project were:</p> <ul style="list-style-type: none"> • To reduce energy consumption and carbon emissions across all college campuses • To promote and implement good energy management throughout all buildings • To produce a sustainable cultural change in both staff and students with regards to energy and management as well as individual and collective responsibility 	
2. Situation: Identify the situation or issue that faced you	<p>The issues that South Staffordshire College faced included:</p> <p>Environmental sustainability is a key priority for the College, reflecting our Mission 'To work together to raise aspirations and success through excellence in all that we do whilst striving to achieve the best sustainable practices.'</p> <p>We have a formal Sustainability and Environmental Policy, a dedicated Environmental Sustainability Manager and are the first college in England to achieve ISO 14001 (May 2010). All college staff are required to undertake training in environmental sustainability to a minimum of Level 1 and issues of sustainability are embedded across our full curriculum offer.</p> <p>As part of our commitment to Environmental Sustainability we have undertaken various research exercises, including a review of the energy usage/carbon footprint of the College.</p> <p>Selecting one of our main campuses initially (Tamworth & Lichfield) we worked collaboratively with the Carbon Trust to analyse energy saving opportunities. We were able to identify that this site consumes approximately 2,364,000 kilowatt hours (kwh) of energy per annum split as follows:</p> <p>Electricity: 1,108,518 kwh Gas: 1,255,667 kwh</p>	

As part of this process we identified a number of actions which could potentially result in energy saving/reduced carbon footprint as follows:

1. Raising staff and student energy awareness
2. Review heating controls
3. Improve lighting controls
4. Thermal insulation of valves and flanges
5. Locking thermostatic valves in position
6. Develop monitoring and targeting system
7. Switching off computer equipment when not in use
8. Draught proofing windows

This project proposal relates to actions 1 and 6, with projected energy savings of circa 95,000 kwh/per annum potentially achievable on a single campus, representing an overall potential saving of somewhere between 5% and 15% in total across all our campuses. (Actions 2, 3, 4, 5, 7 and 8 are either underway or scheduled for future completion).

We are currently piloting a live feed/dashboard service that provides us with detailed tracking data relating to buildings energy consumption and carbon emissions. Some of the actions outlined above relate to demand driven energy requirements (e.g. weather/temperature). However, another issue that immediately becomes apparent is the comparatively high level of baseload energy consumed by some of our buildings.

Graph A (at the end of this case study) shows data relating to one building where the 'downtime' use of energy (baseload) is very low on some days but higher on others. Graph B shows energy consumption of another building where the baseload is consistently high (good practice indicators suggest a baseload of 5% is acceptable/good). If we are to minimise our carbon footprint it is important to understand and manage the factors influencing baseload consumption. In simple terms, this is an area where we can make regular and consistent energy/money savings if we understand better what causes it and how to control it.

This project will enable us to achieve that understanding and implement energy saving measures, initially at the Tamworth & Lichfield campus but subsequently across all our campuses providing long term, sustainable savings. Our experience, and insight, will be valuable to other colleges with similar problems.

<p>3. Task: Define the outcomes you needed to achieve</p>	<p>The outcomes the College sought to achieve included:</p> <p>A reduction in energy consumption, carbon emissions and consequently financial saving in terms of electricity and gas consumption. During 2009/2010 the college spent £527,045.44 on energy. Potential savings could therefore be:</p> <p>If 5% reduction is achieved £26,352 p.a.* If 10% reduction is achieved £52,704 p.a. If 15% reduction is achieved £79,056 p.a.</p> <p>*These figures do not take into account inflationary price rises</p> <p>The monitoring software we are currently using will provide immediate data feedback showing if we are or have been successful in reducing energy consumption (both baseload and total). Monitoring systems currently in place permit us to both measure the kilowatt-hours and convert this to kilograms of carbon savings. We plan to publish this data on the college website as a graph on a month-by-month basis, tracking our progress and contrasting consumption against previous emissions before the introduction of the project.</p>
<p>4. Actions that you took in order to achieve your plan, and your approach</p>	<p>The actions and approach we took in order to achieve our plan were:</p> <p>The project was led by the Environmental Sustainability Manager (ESM) - a qualified ISO14001 auditor and low carbon consultant.</p> <p>The project was monitored jointly by the ESM, the College's Head of Bids and Projects and the Director of Estates.</p> <p>The project will be reported formally to the College Leadership Team by the Director of Estates.</p> <p>The end of project evaluation will be reported to the Board of Governors through the EMS Environmental Review.</p> <p>The Action Plan we drafted for the Project Implementation was:</p> <ul style="list-style-type: none"> • Notification of success and receipt of contract • Design and conduct survey • Produce strategy for carbon/energy reduction • Implement carbon/energy saving campaign • Evaluate results and produce draft case study • Produce and publish final case study <p>The project therefore followed a number of planned progressive stages from the design of the campaign, through to the collection of data by staff and</p>

	<p>student surveys (Energy Walks) and culminated in the Big Switch Off Day (18th March 2010 to coincide with Climate Change Week).</p> <p>The energy monitoring software was installed permanently from the first week in March and ran in the background to record the impact of the campaign and the Big Switch Off. In order to attempt to maximise student input we used the College Student Support Services to supervise and lead the Energy Walks facilitated by the Estates staff. Also a carbon awareness video was placed on the student's Moodle (Virtual Learning Environment) site (STEPS) in order to raise awareness. In addition, invaluable advice was given through our 'Critical Friend' but due to the tight deadlines of the project, this will most likely yield rewards in the future energy carbon reduction campaigns.</p> <p>In addition to the immediate action, an Energy/Carbon Reduction Poster Competition is being run and the results will be judged at the end of April. The winning posters will be used to run a series of campaigns in the new academic year.</p>
<p>5. Results that you obtained including:</p> <ul style="list-style-type: none"> • practical achievements (what's in place) • quantitative change (statistics etc) • qualitative change (behaviour, culture, thinking, attitudes etc) • what the organisation(s) have learned from this • what it means for learners 	<p>The results we obtained from the project were:</p> <p>Practical Achievements:</p> <ul style="list-style-type: none"> • Permanent Energy Monitoring Software installed at the Tamworth campus and will now be adopted throughout all College sites. • Creation of staff and student awareness of the importance of energy saving to both the global and College carbon reduction targets contributing to the start of a cultural change. • Awareness of simple actions that can be taken both collectively and individually to reduce both energy use and carbon footprint. • A better understanding of how to organise and run future sustainability campaigns. • Templates and spreadsheets developed to gather data for future Energy Walks. • Posters designed by students that will form the focus of new campaigns • Continuous Professional Development (CPD) event planned to provide staff of both South Staffordshire and other regional FE colleges with the knowledge and techniques for more effective campaign design, organisation and implementation. <p>Quantitative Change:</p> <ul style="list-style-type: none"> • We are currently compiling data from the monitoring software that will be able to quantify the effectiveness of the campaign over the two weeks and the final effect of the Big Shutoff Off on the baseload.

- The data available to date shows a definite and sustained reduction in energy consumption over the March period of the campaign. The energy savings during this month is thought to be an average of 10% when compared to estimates made in previous years for this period.

Qualitative Change:

- We believe that we have now sown the seeds of cultural change and will undertake a staff/ student survey in the coming weeks to gain a sense of what has already been achieved and what future work needs to be done

Organisational Lessons learned:

- We have learned that campaigns require a far longer preparation and implementation timeframe.
- That campaigns require a detailed understanding of the psychology of the target audience and that several attitudinal transformations are required over a period of time e.g. awareness raising of the need to cut carbon/ energy, what can be achieved and how, and what was achieved.
- CPD requirements of staff to understand how to run effective campaigns

Students Learned:

- General issues associated with energy savings/ carbon cutting through Energy Walk surveys and publicity material (posters and Carbon video on Moodle).
- Empowerment to effect changes through their actions i.e. switching off wasteful energy use and encouraging their peers and staff to do the same.

6. What made the project a success? What were the key ingredients? (Picking up in part from section 4 above)

The project was a success because it married the enthusiasm of the staff and students through the Energy Walks and practical switch offs together with the technological hard data collection through the energy monitoring software. This will allow us to publish the results in a format through various media types (the student and staff newsletters, College’s Sustainability web page, etc.) in order to raise awareness of the effectiveness of collective collaboration in reducing energy waste and carbon reduction.

The hard data collected through the monitoring software should enable us to secure both funding for new energy saving infrastructure and technologies and to support future environmental/ sustainability campaigns aimed at achieving cultural change.

7. Any resources or tools produced by the project	The resources and tools produced by the project were: <ul style="list-style-type: none"> • Spreadsheets and Energy Walk Survey data collection templates have been produced. These are available on request, as their utilisation requires some explanation. • Energy / Carbon Reduction posters will be created through an on going competition. 		
8. Total costs of the project	LSIS funding	Match funding	Total funding
	£7,256	£8,675	£15,931

South Staffordshire College

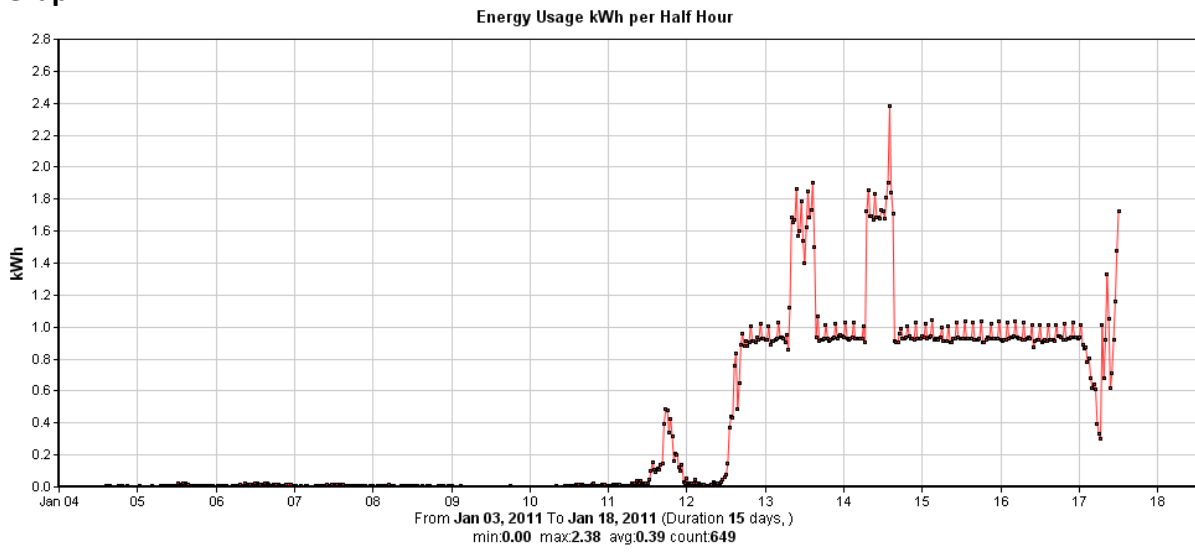
Lichfield • Cannock • Tamworth • Rodbaston



**Funded by LSIS
through the
Cut the Carbon Fund**



Graph A



Graph B

