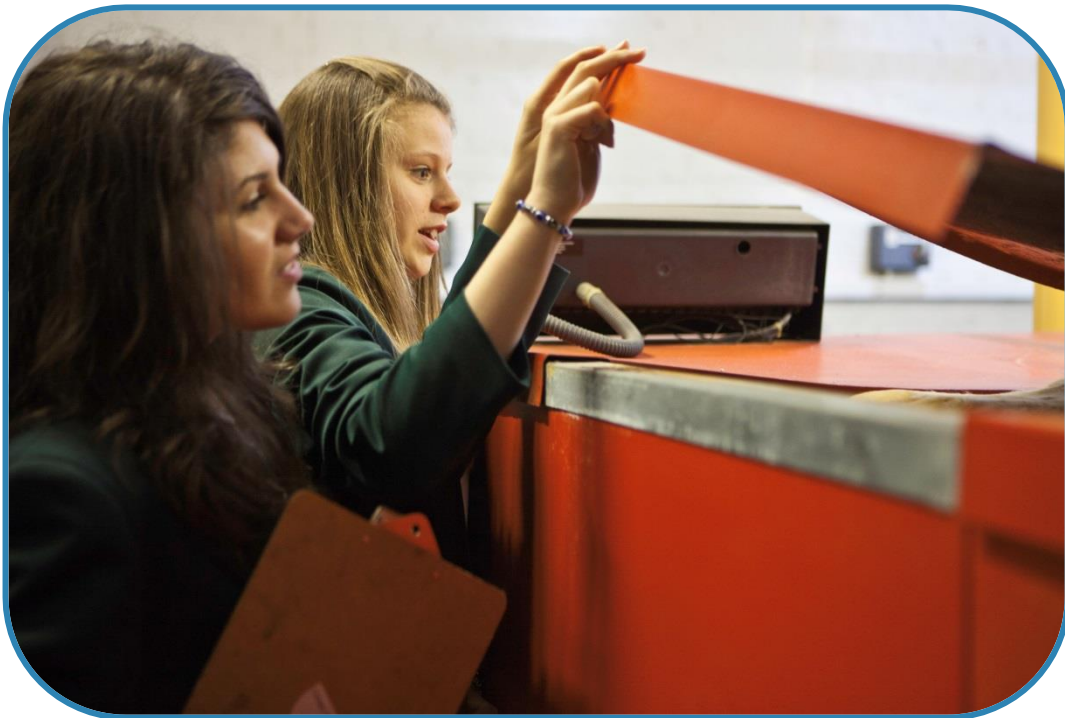




Supporting schools and their communities in sustainability and student development since 2007



Pilot Study 2



The European Agricultural Fund for Rural Development: Europe investing in Rural Areas

About us: Severn Wye Energy Agency

Severn Wye is a charity which aims to promote sustainable energy and affordable warmth. We employ nearly 50 staff across our two main offices in Llandrindod Wells and Gloucester.

Severn Wye work closely with staff and students in schools and colleges both in the UK and across Europe and have developed a range of education programmes and resources for primary, secondary and adult education. Our education team consists of qualified, experienced teachers meaning that we understand schools' needs and the pressures they face and are able to identify the types of support that will prove most effective according to individual school's circumstances. As a result, we have a strong track record and won an Ashden Award for our main secondary school project 'Young Energy People!', one of the forerunners to this project - see www.ashden.org/winners/swea11. One of our 'Your Green Future' events, which form a key part of this project, was also recognised as STEM event of the year for South-West England - see www.yourgreenfuture.org.uk.

Severn Wye's community and business teams have extensive experience of carrying out technical energy surveys and providing advice on energy efficiency and renewable energy measures for both domestic and non-domestic premises.



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Aims of Our Future's People

'Our Futures' People' is a culmination of years of development and refinement of Severn Wye's two most popular educational programmes, to create a complete programme for secondary school students with **overarching aims to:**

- Increase young people's understanding of the construct and importance of a low carbon future
- Raise levels of enthusiasm for active engagement in the development of a low carbon future
- Support schools in providing teaching and learning experiences that enhance their provision of careers, global citizenship and STEM (Science, Technology and Maths) education in order to facilitate young people's entry into the careers that support a low carbon future
- Support schools in achieving reductions in energy use and encourage snowball effects into the community through local businesses and householders.

The work that was proposed was for the area of Powys and involved events that brought schools and businesses together and a full academic programme with the aim of giving students an overview of the skills (technical, creative and social) that are required to successfully engage in action on energy sustainability.

The project had a budget to support 10 schools, so with 17 secondary schools (Local Authority & private) within Powys, there was a significant opportunity for Our Futures' People to engage with local, young residents to bring about a **range of benefits including:**

- The opportunity to practically apply curriculum learning, whilst developing problem solving, team working, and communication skills;
- Building young people's sense of achievement and societal contribution through realising significant energy savings and their confidence to engage beyond their peer group;
- Preparing young people for work, introducing them to their local economy, broadening their understanding of how business interacts with sustainability; increasing their familiarity with people from local business and the jobs they do;
- Giving students the opportunity for practical work experience; providing the knowledge and skills for the management of their own energy usage in the future and for providing a positive influence for the family home and local businesses (via work placements);
- Increasing the capacity and skills of teachers and skills to deliver this type of learning through their engagement with the programme;
- Enhancing local cross sectorial working on environment, economy, youth and skills.

The work was carried out in two phases or 'pilot studies'. The aim of Phase 2 was to build upon, adapt and refine the project according to lessons learnt during the first pilot. Outlined here are the ways that Phase 2 was implemented, as well as the further lessons that were learnt during this period.

Main project activities

The chart below summarises the main project activities for Phase 2:



Student Training

- x 1 day training for SEMT:
 - i) Energy, the environment and Climate Change
 - ii) Energy efficiency and renewable energy
 - iii) Energy use in schools
 - iv) Action on energy and Climate Change

Global



Local

School energy survey

- Students investigating: Heating, Insulation, Lighting, Electrical appliances in their school
- Students setting and prioritising recommendations for action
- Students preparing presentation outlining the need for action and recommendations

Dissemination of findings

- Presentation to governors and senior management

School energy campaign

- Students plan and run an energy awareness campaign to promote positive behaviour change in the school.
- This could tie into national and international events such as Earth Hour and students may decide to raise money for Solar Aid or raise money to implement energy efficiency measures in their school.
- The campaign may include an information evening to spread the message to parents and the wider community.

Evaluation

- Post –project surveys carried out and feedback from schools recorded and evaluated.

Following evaluation of the first pilot – Phase 1 – the following changes were made to the structure of the project:

- The project, during Phase 1, had included a 'community event' element to the Awareness Raising Campaign. Attendance at the community events was low and schools did not have the time or resources to drum up interest in these. It was agreed that these would only be held if it was possible to combine them with an event that was already happening in a school.
- The project, during Phase 1, had included a 'work based placement' element. The logistics of the work based placements were difficult for schools to coordinate, particularly as there was no budget for travelling costs. It was agreed that this stage should not be included in the project during Phase 2.

Intended project timetable

Sep 18	Recruit students
Sep / Oct 18	Your Green Future event to launch / inspire
Oct / Nov 18	Student training
Nov / Dec 18	School energy survey
Jan /Feb 19	Dissemination of findings
Mar – Jul 19	School energy campaign
May – Jul 19	Evaluation

Changes to the project content following Phase 1

Following evaluation of the first pilot – Phase 1 – the following changes were made to the 'content' of the project:

- During feedback schools reported that the Your Green Future event needed more focus. The event during Phase 2 was developed with this in mind.
- Some project staff reported, following Phase 1, that the training element needed more content or substance. This was re-designed during Phase 2 to be more interactive and to include more information on the wider context of energy and climate change.
- During Phase 1 the School Energy Management Team were required to check the school's energy usage and input the data into the School's Energy Diary. Project staff and schools reported that it was difficult for the students to carry this out frequently. In addition, as the data provided by the students was often inaccurate, project staff had to correct it using data from Powys County Council. It was decided that, during Phase 2, the SEMTs wouldn't collect this data but that it would be inputted directly by project staff using the data from the County Council.
- Some project staff reported that during Phase 1 the level of data collected during the Survey Day was difficult to deal with. It was decided that during Phase 2

sample areas of the school would be surveyed rather than the whole building. This would then free up time for discussing the findings and prioritising recommendations.

- The amount of support that students needed to complete the formal report to the Governors element, included in Phase 1, required staff to travel frequently to school sites and consequently the budget for travel costs was used prematurely. It was decided not to include the formal report element during Phase 2 with students focussing instead on their presentation to the school Governors.

Implementation

School Recruitment

With the aim of recruiting 5 schools for the academic programme all schools in north Powys were emailed with information about the project and invited to take part. A meeting with interested schools was offered so that the implications of taking part in the project could be discussed before the school confirmed its participation.

Three schools signed up to the project after the confirmatory meeting. Two other schools were interested in the project but decided they didn't currently have the capacity to take part in the project. One school had already been offered a similar project by the contractors working to develop their school building and so also declined.

It was agreed to offer one of the remaining two places to a school in south Powys that hadn't been able to take part in the project the previous year and the other to a satellite campus (with distinct buildings and student body) of one of the schools already taking part in the project.

As part of the recruitment process schools were asked to identify a Lead Teacher who would be responsible for co-ordinating the project within their school. It should be noted that some schools had difficulty identifying Lead Teachers as there wasn't any project budget available for releasing teachers to carry out the role.

Project Preparation

Energy Diaries were produced by project staff for each school and all data to date inputted.

Technical energy efficiency and renewable energy feasibility studies were carried out on each site by qualified project staff.

Schools were provided with a link to an online 'pre-project' behaviour survey and were asked to ensure that all students and staff completed the survey, ideally before the SEMT recruitment assembly took place. Despite great efforts by the Lead Teachers, ensuring that students had both the time and access to IT resources to complete the survey, especially before the recruitment assembly, proved to be logistically too difficult for all schools.

Given this, the efficacy of the online survey as a benchmarking tool should be questioned.

Recruitment of School Energy Management Teams

SEMT recruitment assemblies were carried out on the 5 sites. The assembly explained the link between energy and climate change and the urgent need to reduce carbon emissions by drastically reducing fossil fuel use and invited students to take action on this by taking part in the project. Application forms were handed out at the end of each assembly along with details on how to return completed forms.

The assemblies generally worked well, generating sufficient applications for the project and enthusing teachers about the topic. However, securing dates for them proved difficult in some schools, meaning that some assemblies weren't delivered until the second half of the autumn term.

The roles 'advertised' included: Senior Project Manager, Project Manager, Promotions Manager, Energy Data Manager and Energy Advisor.

Students who applied were then interviewed and allocated roles.

The interviews were beneficial in the sense that they gave the students an experience of what a 'real' interview is like. They also gave the project staff an opportunity to get to know the students before the training sessions. But, in practice, they served no purpose in the recruitment process as all students who applied were accepted onto the team and offered the roles they had applied for.

Students were sent 'offer' letters confirming their position within the SEMT.

Team sizes ranged from 6-16.

SEMT students were then asked to complete another online survey. Co-ordinating this was time consuming for Lead Teachers as they may not ordinarily have contact with the SEMT students. Not all SEMT students completed the survey, and of those that did many didn't manage to do so before the initial training – calling into question its validity as a benchmarking tool.

Your Green Future Event

The Your Green Future 2018 event was delivered in conjunction with a Local Delivery Team (LDT) (put together from contacts at Powys County Council, Careers Wales, STEM Ambassador Hub & the NPTC Group). The planning for the event commenced in March, approximately 6 months before the event was held. The LDT was able to provide local knowledge and context to the planning process, which helped shape the delivery of the event. Of particular benefit was the knowledge of local businesses, potential event venues and school contacts to recruit schools and businesses to the event. This year's event attracted almost 30 organisations (almost 70 professionals from the green economy) to take part as either mentors or exhibitors; while 7 schools brought around 350 students to the event over the two days it was held.

The 2018 event was able to attract sponsorship from three organisations (BAM Construction, The Happold Foundation & SPEN), bringing £4,500 as match funding towards the delivery of the OFP project. Generally the event was very well received amongst organisations mentoring/exhibiting, students and teachers. Similar to last year's event, two of the workshops were adapted to enable a school to bring students with special educational needs and disabilities, which was welcomed by the school attending. Similarly, other schools were full of praise for the attention to detail and level of interaction for the students taking part.

Future considerations (based on feedback from organisations attending) include:

- Encouraging more local businesses to attend and maybe split the exhibition hall up into two sections. One for educational theme exhibitors and one for Businesses so the students can differentiate;
- Bigger focus on climate change;
- Some quick 20-second video clips from young professionals in energy and sustainability talking about what they do and why they chose their careers;

Issues with this venue included:

- Spacing in the exhibition hall, which was tight because of a double booking for lunch space.
- More time allocated for students to engage with each exhibitor, as it felt rushed at times.
- Due to space restrictions, the disco stand was too noisy for other exhibitors.

School Energy Management Team Training

Training was provided in four schools. The 5th school pulled out of the project after the interview stage as they had ongoing problems securing a Lead Teacher to drive the project forward within the school.

The new and more interactive format for the training worked well, with students engaging enthusiastically throughout the day.

Topics covered included:

- What is energy and what sort of energy powers things in our everyday lives
- Mapping our energy use
- Where does the energy we use come from?
- Renewable and Finite energy sources and Low Carbon and Carbon Intensive energy sources.
- Why is burning fossil fuels a problem?
- Effects of global warming: climate change and implications
- What could the future hold?
- What we can do about global warming and climate change
- What others are already doing about global warming and climate change
- Ideas for action

- How we measure energy
- Energy use in school
- How to bring energy use down with a particular focus on schools.

Survey Day

Student energy surveys of school buildings were facilitated in the four remaining schools. The re-designed survey day generally worked well, with less time spent collecting data and more time on discussing and prioritising recommendations.

There was time at the end of each day for the students to create a Power Point presentation outlining their learning from the training day, and their findings and recommendations from the survey day.

Dissemination of Findings

Students presented their findings to their respective Governors and Senior Leadership Teams. These presentations were either to a sub-committee of the Governors, for e.g. the finance sub-committee, with members of the SLTs present or to a group of interested Governors, again with members of the SLT present. These presentations were very successful with positive feedback from both the Governors and SLT's. 4 sets of Governors/SLT's committed to reviewing the recommendations, implementing the no-cost and some low-cost recommendations now, and considering ring-fencing savings from the no or low cost measures to implement further energy saving in the future.

School Energy Campaign

Each SEMT then planned and implemented a behaviour change campaign in their schools. These focussed on only using lighting when needed and turning it off if it wasn't needed. The focus stemmed from the findings of the technical survey and the student survey.

The campaigns and plans included:

- Dress Up Bright Days where all students paid a pound to come to school in bright clothes. A letter was sent home with every student explaining the reasons behind the campaign. The money raised has been set aside for energy saving measures.
- The creation of Luna the Light Bulb a character to be used in the autumn term next year on posters encouraging staff and students to only use lights when they're needed.
- The incorporation of an energy saving challenge across two of the campuses' 'Character Challenges' system (a system in the school that encourages socially positive behaviour). The SEMT presented this idea to the school's student council who agreed to take this forward.
- The creation of a short film encouraging all staff over two campuses to only use lights when needed and explaining why this is so important. This is expected to take place once the above action is incorporated in the 'Character Challenges' system next school term.
- Social media and sticker/poster campaigns to coincide with Dress Up Bright Day, reminding staff to only use lights when necessary.

- Home Challenge Sheet – to encourage energy saving behaviour at home, with prize incentives for the winners.

Three of the campaigns ran successfully and will have contributed to raising awareness. Their efficacy in changing behaviour, given the time and resources available, should be investigated. However, the effect they have had on the students organising the campaigns should not be underestimated. A real sense of achievement and realisation that they could instigate and lead on something that could create change was evident. Despite the best efforts of the SEMT and Lead Teacher one campus was unable to run its campaign this year. The school has committed to running the campaign in September.

Publicity

Tweets were sent in both English and Welsh following all visits to schools. Press Releases were sent for each school following presentations to Governors and campaign days as well as following the Your Green Future Event.

Evaluation

Once all activities had taken place all students and staff were asked to complete a 'post-project' behaviour survey online. The SEMT students were also asked to fill in a post-project online survey. Lead Teachers were asked to submit their evaluation of the project via an online questionnaire.

In addition, data from the schools' energy diaries was used to measure the fiscal impact of the project as well as evidence reductions in CO₂ emissions.

All data and information provided during the benchmarking and evaluation process is analysed in the 'Evaluation' section below.

General issues that arose during implementation

The implementation of the project was successful overall, with students and schools conveying their enthusiasm at its impact. However, in implementing the project the following difficulties were encountered and it is recommended that they are addressed in the design of any further phases or projects so that impact is maximised.

- The overall structure of the project, involving numerous visits to the same school, was difficult to implement. Schools are busy places and it often proved difficult to set dates for activities. This meant that the implementation of the project was very stop-start and at times momentum was lost. Project staff consequently spent a disproportionate amount of time liaising with schools and working on re-building momentum. This issue was compounded if the lead teacher wasn't part of the Senior Management Team, as they had no authority to set dates for activities themselves.
- The input required from the lead teacher is significant. One school was eventually unable to secure a lead teacher as there was no project budget available to partly release them from their usual commitments. Although this didn't hinder securing a lead teacher in other schools, it did mean that teachers were struggling to implement the project on top of many other commitments, many of which had to take priority over the project.

- The benchmarking and evaluation tools required a significant amount of coordinating time from the lead teacher. This meant that in some schools, for example, benchmarking didn't take place until the project was well underway undermining the integrity of the data and information as a benchmark.
- The stop-start nature of the implementation of the project meant that high impact publicity for the project was difficult to co-ordinate.
- The stop start nature of the project meant that all project activities were only just completed by the end of the academic year. The impact of the project would have been greater had there been more time to follow up on commitments made by schools and to support them to implement these. Equally, school campaigns would have benefitted from more time after the main campaign activity for follow up work.

Summary of Findings

This report has outlined the main activities and achievements of Phase 2 of Our Future's People. The project has been evaluated by an external evaluator and a full evaluation of Phases 1 and Phase 2 produced.

After a brief outline of the changes to the project from Phase 1 to Phase 2, this section highlights the key theses to emerge from the evaluation of Phase 2.

Changes from Phase 1

Phase 2 differed from Phase 1, following evaluation in the following ways:

- Only 2 schools in Phase 1 ran a "community event" element of the energy awareness campaign. Events were hard to organise because of lack of time and lack of engagement from other organisations.
- The 'work-based placement' element was dropped. It was not delivered in Phase 1 despite attempts to do so. The lack of a budget for travelling costs associated with this element plus other logistics meant that it could not proceed.
- The Your Green Future event was sharpened following feedback from schools that it required more focus.
- Student reports to Governors were dropped as they required too much support from project staff to complete. Governors were given presentations.
- The technical data for the School Energy Diary element was completed by project staff in Phase 2 as it was too onerous a task for students.
- Data collected on school survey day was modified to include a sample of school rooms, not the whole school.
- More content was added to the training element, especially in relation to the wider context of energy and climate change.

These changes resulted in a slightly simplified project in Phase 2, more in keeping with the demands of delivery in a rural area at a time when school resources are stretched.

The Project Exceeded its Outputs

Based on a 50:50 split of the output/ outcome measures between the two Phases, the project has exceeded its output targets.

Project Outputs

Output	PI	Actual
No. of networks established	1	1 Local Delivery Team
No. of pilot activities undertaken/supported	1	1 Pilot Study
No. of stakeholders engaged	1,000	1,103
No. of participants supported (awareness raising events only)	500	2,350

Project Outcomes

Outcome	PI	Actual
No. communities benefitting	5	4 High Schools
No. businesses benefitting	15	8 organisations at YGF events

The project reached over 2,000 students in 5 Phase 2 target High Schools. This includes Llandrindod Wells School which dropped out after their School Energy Management Teams (SEMT) team had been recruited but before an Energy Survey could be completed. Newtown High School operates across two campuses, almost 30 miles apart and is counted as two separate schools.

The funder required letters /emails from participating schools to prove that they had benefitted. This explains why the outcome is lower than the PI in the table above.

Likewise, the funder required similar evidence from businesses attending the YGF events so, although surveys show 28 businesses/ exhibitors/mentors attending YGF and positive feedback from surveys, only the lower figure in the table above can be shown.

Ysgol Cedewain, a Newtown – based school for students with learning difficulties and St Mary's Catholic Primary School also attended a Your Green Future Event.

Assemblies were held in all 5 High Schools and the project presented to approximately 2,350 pupils.

SEMTs were established in all 4 High Schools. 44 students in total were members of a SEMT in Phase 2. Llanidloes and Llanfyllin both had 15 members each, Newtown Main Campus, 8 students and Newtown John Beddoes 6. SEMTs were much smaller than in Phase 1 which reflects the concerns in Phase 1 about the difficulty managing large teams and to find meaningful tasks for large numbers.

335 students attended the Your Green Future (YGF) events at the Cefn Lea Conference Centre, Dolfor. 4 organisations attended Local Delivery Team meetings to plan the YGF event.

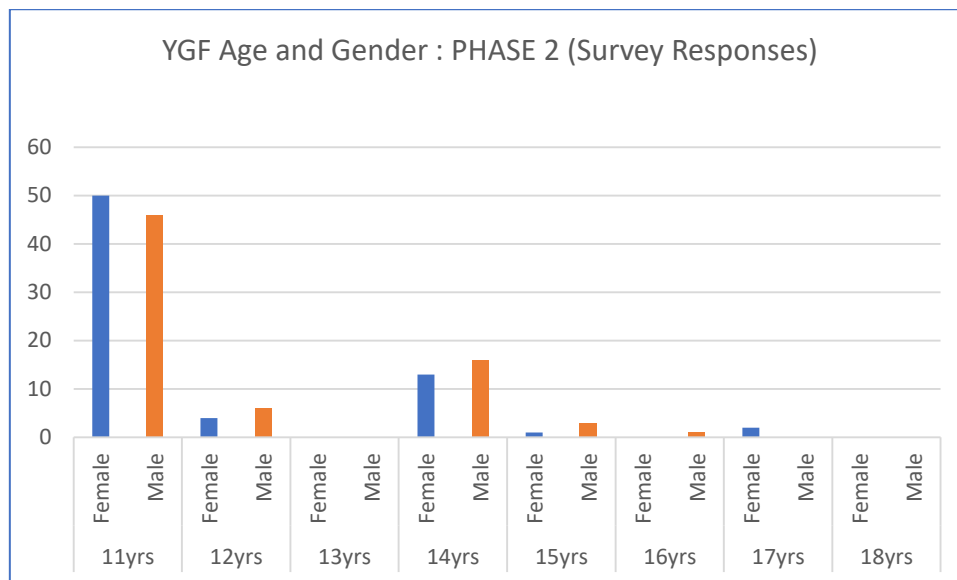
Age and Gender

Of those students who filled in the YGF pre- event survey, (258 students) there was broadly an equal proportion of male and female students.

YGF Pre-event Survey: Gender

Gender	PHASE 2	
Female	60	46%
Male	69	54%
TOTAL	129	

In Phase 2, the YGF events attracted students across a wide age range but a large cohort came from Year 7 (11 years). This was considerably younger than the students who had attended the corresponding Phase 1 event where the largest cohorts came from 14/15 year olds.



Students Felt they had good Knowledge of Climate Change Issues

In Phase 2, students had a higher average when asked to rate their knowledge of climate change issues than the Phase 1 cohort had done. On a scale from 1-10 where 1 is no knowledge and 10 excellent knowledge, students in Phase 2 scored on average 8.45 against only 5.94 in Phase 1. This could be due to a number of factors. Some of the training in Phase 2 was delivered before some surveys were completed. Some students had done the training and possibly therefore felt more confident. Another reason could be a greater awareness of climate change issues amongst young people in this second year as it received a great deal of press and social media coverage.

You learn a lot from it and you have a better knowledge. *Student*

An analysis of SEMT pre and post surveys demonstrated a significant increase in knowledge about low carbon futures

Schools Saved Money

On average schools participating in Phase 2 of the project saved £4,412 each per annum. Unfortunately, this saving cannot be attributed directly to the project. Other factors may have come into play.

I hope in the future that we as a school can benefit from this experience and learn on the benefits of saving money and use natural resources. *Student*

Comments from students illustrate that saving money for their school was a major motivation for their involvement in the project.

Schools Reduced their CO₂ emissions

As a result of reductions in energy use, schools reduced their carbon emissions by 71.75 tCO₂ although the same point applies as above. Not all this reduction can be attributed to this project.

The Impact on Energy Saving Behaviour is difficult to Quantify

Students, teachers and other members of staff from participating schools were asked to fill in a pre-project and a post-project energy use behaviour survey. The survey had two distinct elements to it. One set of questions asked about behaviour at school, the other behaviour at home.

The table below shows that numbers of pre-project surveys were good but this fell away for post-project surveys. Even where the numbers are quite similar there is no record of whether they were the same students filling in the survey. This means that the behaviour survey cannot be used as a means of evaluating behaviour change.

Behaviour Surveys Completed

PHASE 2			
		PRE	POST
Student	School	710	252
	Home	677	246
Teacher	School	44	30
	Home	44	30
Other Member Staff	School	14	7
	Home	14	7

Data gathered by project staff was used to estimate that participating schools on average saved £4,412 a year during the project lifespan. It is not possible however to attribute this saving solely to the work of the project. Other factors may have come into play.

Students in Phase 2 were Proud of their Presentations to School Leaders

Most students who filled in the questionnaire commented on the importance of being able to present to Governors and Senior Leadership Teams. There was only one comment unsure whether this would make a difference. Most students felt that their voices were listened to and that changes would be implemented; especially the low cost/no cost options.

We have all worked together and the governors have agreed to take forward our recommendations *Student*

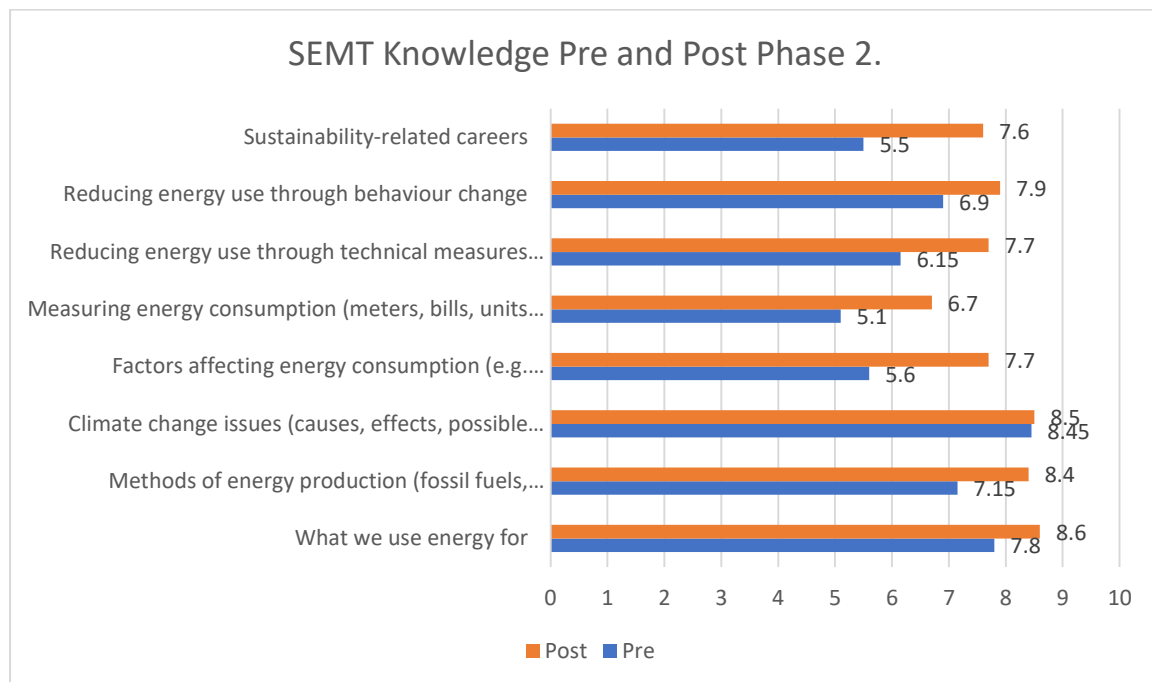
The Project had a Positive Impact on Student Self-confidence.

Students reported an increase in self-confidence as a result of participating in the project. Project staff also reported the impact the project had in this respect, especially on the students who were part of SEMTs.

The training was well received with some feedback on the need to be more focussed in some cases.

Students Gained Knowledge

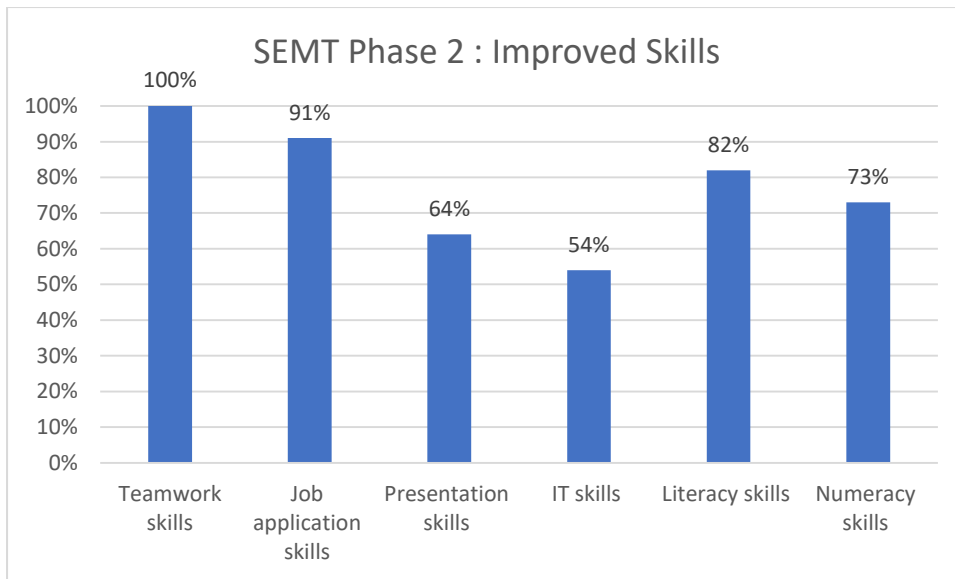
The graph below demonstrates that students gained knowledge in almost all aspects as a result of their involvement in SEMTs. Students were asked to rank their knowledge from 0=no knowledge to 10 =excellent knowledge.



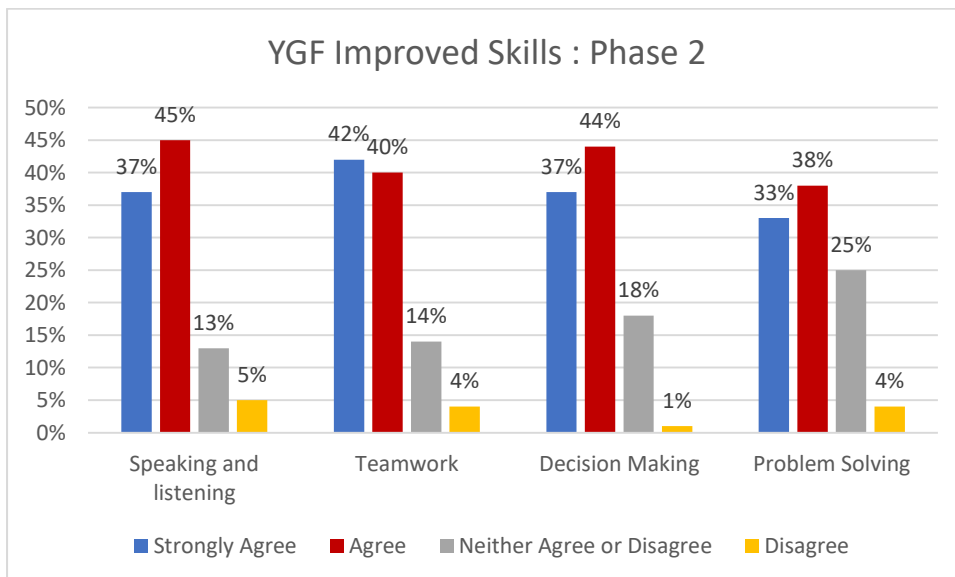
Sample size 11

Students Gained Transferrable Skills

The post-project SEMT survey demonstrated clearly that students gained a range of transferable skills through participation in the project. Teamwork and job application skills scored particularly highly.



Sample size 11



Sample size 142

All skills scored highly as a result of the Phase 2 YGF events.

Businesses Most Enjoyed the Interaction with Students

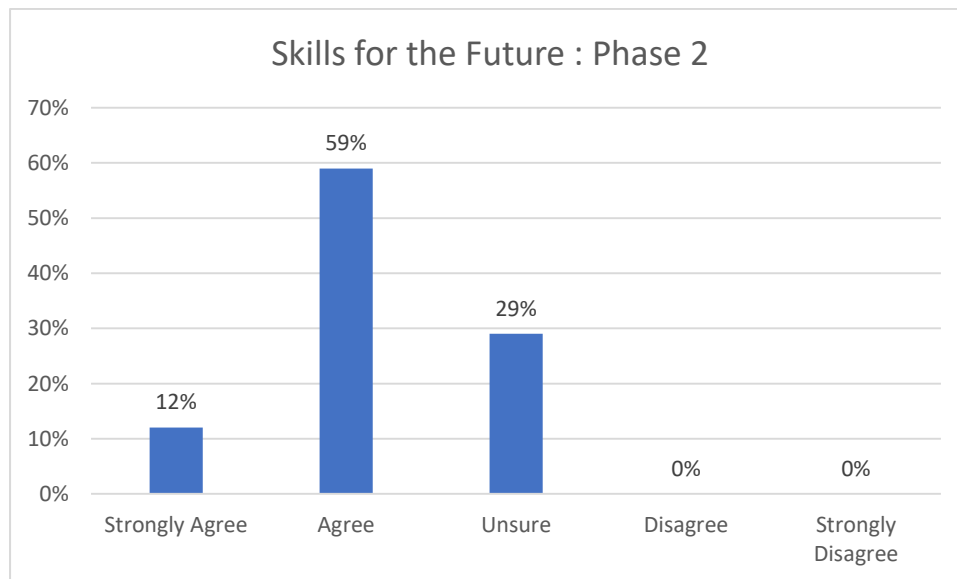
I most enjoyed... “Engaging with students with our business and bringing the principles of sustainability into a real-life context for them”. Business

Business mentors and exhibitors valued the opportunity to interact with students.

Teachers stressed the fun nature, the interaction and the networking opportunities which was a marked contrast to Phase 1 and probably reflected the young age of the students they brought to the events.

Awareness of Opportunities in the Green Economy was Raised

Businesses were asked to comment on the statement that the YGF event, "Gave our organisation the opportunity to promote the skills we need now and in the future". 71% either strongly agreed or agreed.



Sample size 17

Student feedback from the YGF events also demonstrated a greater awareness of opportunities in the green economy.

PHASE 2	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
	P2	P2	P2	P2	P2
..what choices I can make to lead a more sustainable life	31%	55%	13%	0%	1%
... what businesses do to promote sustainability	24%	54%	19%	2%	1%
... what engineering is	37%	40%	21%	1%	1%
....what engineers do	36%	39%	23%	1%	1%

Sample size 142

Project Monitoring and Evaluation Tools Required Modification

Although the monitoring and evaluation was slimmed down after Phase 1, the use of Survey Monkey still resulted in less than ideal participation in evaluation. A more interactive form of evaluation could have been deployed throughout the project but especially at YGF events where the captive audience could have been encouraged to feedback on the day.

Conclusions

Phase 2 was able to implement many of the improvements suggested to the project following Phase 1. These in the whole paid off. The employment of an Education Officer who lived closer to some of the schools helped to make the interaction more successful. Even so there was still a lot of travel back and forth to schools. One suggestion that came from staff was for certain elements of the project to be concentrated into a shorter but more intense period in a school possibly whilst a campaign was being undertaken.

Nevertheless the project engaged over 2,000 students, demonstrably raised knowledge and skill levels and provided links between schools and stakeholders in the green economy.

A full evaluation of both pilot phases has been produced with recommendations for future projects.

Appendices

Appendix I – Example of Student Presentation

The School Energy Management Team



ASIANTAETH YNNI
SevernWye
ENERGY AGENCY

OUR FUTURE'S PEOPLE
Creating pathways to a sustainable future

The Severn Wye Energy Agency is launching a project called Our People's Future to try and make schools across Powys more energy efficient to save on money and carbon emissions produced. This will help protect the environment and educate people on what they can do and how they can help save the Planet.

What we've done already

- We had an assembly where we learnt all about climate change and what we could do.
- We were all offered the chance to become part of the School Energy Management Team.
- We were given application forms to fill in to say why we wanted to take part.
- We had an interview if our application form was chosen to explain how we would help.
- The people who were chosen took part in a training day to learn more about climate change and energy.
- We had other meetings to decide how to reduce the school's energy use and met with the Eco team.
- We have had a survey day where we surveyed the school and found out how we could make the school more energy efficient.

Image subject to copyright

What is global warming?

The Greenhouse Effect



IMAGE SUBJECT TO COPYRIGHT

It is when there's too much CO₂ trapped in the atmosphere. This makes the earth get warmer and warmer. But its not as good as it sounds because the earth gets so hot it plays havoc with our weather which means there will be floods and droughts. Where does all the CO₂ that we make come from? It comes from all the energy that we use all over the world from burning fossil fuels and that's not sustainable.

World Energy Consumption



IMAGE SUBJECT TO COPYRIGHT

Some Impacts of climate change

- Sea levels rise
- More dangerous weather conditions-these could destroy animal habitats
- It could affect us because we won't be able to grow crops because of climate change
- It could affect business-fishing businesses for example

What we need to do about it?

We need to act quickly on climate change because we don't know how bad the future could be. It may start off with small affects like weather change but it is more likely to be much worse in the future.



These are some of the issues we came across when we carried out our survey of the school buildings:

Insulation and draughts



Uninsulated pipes



The temperature too hot in some rooms is this because radiators can't be controlled individually?



Draughty windows and doors

Although some double glazing, lots of single glazed windows

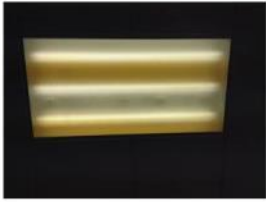


Appliances

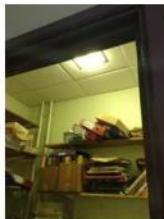
Appliances on that didn't need to be



Lighting



Lighting type - not the most efficient



Lighting use -
LOTS of lights on that didn't need to be!

No cost recommendations

- ▶ If we put timers on the computer monitors we could save £160 per year for a very simple change.
- ▶ Switching off projectors in all classrooms at the end of each day this could save £100 a year

Following our survey of the school buildings these are our recommendations:

Low and capital cost recommendations

- LED lighting and sensors. This would reduce the cost and could really benefit the students in many ways as well as the energy bills. If we invested in the LED's we could save £11,514 per year.
- Wall insulation could reduce the heat leaving the school through the walls. 35% of heat is lost through the walls, if we insulated the school we could save a lot of money.
- Solar PV array by investing in these we could save £20,000 a year.
- Draught proofing could save £900 a year.
- Radiator control can save £1,500 year because a lot of heat energy is unevenly spread through out the school, whereas money could be saved.

Why is it so important?

We pay £48,732 a year for electricity and gas that's £4061 a month!

If we contribute to helping the environment it will help us in the future with global warming



We would need to plant **1446** trees each year to absorb the carbon dioxide our school emits.

The amount of CO2 emitted by our school each year is equal to **28,924,400** party balloons!

If you were to take action on these recommendations you could save the school= £18,451 per year!

What we did next

We ran a campaign about turning lights off (or not turning them on!) in the school when we don't need them.

We sent a letter home with every student explaining what our campaign was about and we organised a Dress Up Bright Day. Each pupil paid £1 to wear bright clothes for a day. We raised £351. The money raised will go towards funding energy saving measures in our school.



What we ask you to do

- To read the Technical Report
- To consider our recommendations and put them to the Governors and SMT.
- To discuss with us how the money we raised could be put to best use.
- To consider ring-fencing any savings made by our no or low cost recommendations to fund further energy saving measures.

Appendix II – Example Energy awareness campaign action plan

Activity	Steps to be taken	When?	Who?
Dress Up Bright Day (All students and staff pay £1 to come to school dressed in bright clothes to raise awareness of the importance of only using lights when needed (and turning them off when not). Money raised can go to fund further energy saving measures in the school).	<ul style="list-style-type: none"> - Decide on date - Explain to staff what's going on and why - Letters or leaflets to go home to all students promoting day - Assembly to promote day and explain why it's being held – see below - Decide how the money will be collected and put his system into place. - Remind all students and staff about the day. - Carry out activities on the day – see below - Take photos. <p>KEY MESSAGE to be used throughout: To reduce energy use (and help prevent worst effects of climate change and save the school money) everyone needs to use lights only when they are needed (and turn them off when not). The money raised will fund further energy saving measures in the school.</p> <p>N.B. USE LUNA THE LIGHT BULB MASCOT ON ALL PUBLICITY.</p>		
Luna the Light Bulb Mascot	<ul style="list-style-type: none"> - Design - Pass design on to all other groups who need to use her 		Ruby and Shannon
Assembly before the Dress Up Bright Day	<ul style="list-style-type: none"> - Plan/Script/Create Assembly - Decide who's saying what - Practice - Deliver <p>REMEMBER KEY MESSAGE AND USE LUNA THE LIGHT BULB</p>		Evie, Rhian, Megan, Ella
Poster or Sticker Campaign to coincide with Dress Up Bright Day reminding staff and students to only use lights when needed (and turn them off when not).	<ul style="list-style-type: none"> - Design Posters or Stickers - Reproduce posters or Stickers (How many of these?) - Put posters or stickers up around the school <p>N.B. USE LUNA THE LIGHTBULB.</p>		Evie and Carol to design HOW WILL THEY BE REPRODUCED? CAN WHOLE TEAM HELP TO PUT THEM UP?

Social Media Campaign to coincide with Poster or Sticker Campaign and Dress Up Bright Day.	<ul style="list-style-type: none"> - How is this going to work? / Which accounts? - Use same design as Posters or Stickers - Share message on Social Media 		Ruby, Megan – Instagram Charlotte – Facebook Shannon, Ella - Twitter
Home Challenge Sheet – to be given out to all students on the day. Students complete the Challenge to try and win a prize.	<ul style="list-style-type: none"> - Design Home Challenge Sheet - What is the prize? - When is the deadline for returning? - Distribute to all students during tutor time. - Decide on winner <p>N.B. REMEMBER USE LUNA THE LIGHTBULB</p>		Ella and Megan
Energy Game to be played by students on the Dress Up Bright Day	<ul style="list-style-type: none"> - Decide how this is going to work - Design and make game <p>N.B. REMEMBER LUNA THE LIGHTBULB</p>		Luke
Costume (Luna the Light Bulb?) to be worn one of the team on the Dress Up Bright Day.	<ul style="list-style-type: none"> - Design and Make Costume? - Who's wearing it? 		Sol



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