



EAUC NW Regional Group Meeting

Winstanley College

24th October 2017

Welcome



Pam Reynolds
Convenor

Claire Mitchell
Membership Community Officer

Agenda



Time	Activity	Facilitator
9.00am	Pre-meeting refreshments	PR
9.30am	Welcome to the NW EAUC meeting and minutes of last meeting – any feedback	PR
9.40am	EAUC update	CM
9.50am	EAUC SDG Accord discussion	PR
10.00am	Energy saving at Winstanley College – presentation	CE
10.30am	Utilities and carbon emissions – discussion <ul style="list-style-type: none">- Carbon management plans- Renewables- Reporting, policies and strategies- Target setting- Behaviour change- Water consumption	PR
10.45am	Break	
11.00am	Utilities and carbon emissions – discussion continued	PR
11.30am	Waste and recycling – <ul style="list-style-type: none">- Behaviour change- Successful schemes- Recycling rates- Main problems/issues	PR
12.00am	EAUC NW benchmarking survey - discussion	ALL
12.20am	AOB - Bee keeping and focus topic of next meeting	PR
12.30am	Lunch and close of meeting/tour of boiler house	

1.0 SDG Accord



The SDG Accord

The University and College Sector's Collective Response to the Sustainable Development Goals

The purpose of the SDG Accord is twofold:

First it is to inspire, celebrate and advance the critical role that education has in delivering the [Sustainable Development Goals \(SDGs\)](#) and the value it brings to governments, business and wider society.

Secondly, the Accord is a commitment learning institutions are making to one another to do more to deliver the goals, to annually report on each signatory's progress, and to do so in ways which share the learning with each other both nationally and internationally. An objective is that sector SDG reporting metrics will be presented at the annual UN High Level Political Forum.



Who should sign the Accord?

The Accord can be signed on three levels.

Leaders of institutions sign to make a corporate commitment - this must be the **highest authority** such as Vice Chancellor, Principal, President etc.

Leaders of related university and college support organisations sign to make a corporate commitment to supporting the sector

Individual students, researchers, academics and operational staff can sign to make a personal and professional commitment to playing their part in advancing sector performance

Openly and annually accounting for progress and sharing our experience and learning from implementing the SDGs is a key requirement of the Accord. The Accord is not prescriptive on what form this takes only that it is made available to your local or national networks. Possible formats include reports, videos, policy documents, case studies and blogs etc. Endorsing Partner networks commit to making these resources available to each other's networks internationally. A sector overview of progress will be presented annually at the UN High Level Political Forum.



Energy Saving at Winstanley College

Jim Collins – Flywheel effect



- Picture a huge, heavy flywheel—a massive metal disk mounted horizontally on an axle, about 30 feet in diameter, 2 feet thick, and weighing about 5,000 pounds. Now imagine that your task is to get the flywheel rotating on the axle as fast and long as possible. Pushing with great effort, you get the flywheel to inch forward, moving almost imperceptibly at first. You keep pushing and, after two or three hours of persistent effort, you get the flywheel to complete one entire turn.
- You keep pushing, and the flywheel begins to move a bit faster, and with continued great effort, you move it around a second rotation. You keep pushing in a consistent direction. Three turns ... four ... five ... six ... the flywheel builds up speed ... seven ... eight ... you keep pushing ... nine ... ten ... it builds momentum ... eleven ... twelve ... moving faster with each turn ... twenty ... thirty ... fifty ... a hundred.
- Then, at some point—breakthrough! The momentum of the thing kicks in your favour, hurling the flywheel forward, turn after turn ... whoosh! ... its own heavy weight working for you. You're pushing no harder than during the first rotation, but the flywheel goes faster and faster. Each turn of the flywheel builds upon work done earlier, compounding your investment of effort. A thousand times faster, then ten thousand, then a hundred thousand. The huge heavy disk flies forward, with almost unstoppable momentum.
- Now suppose someone came along and asked, "What was the one big push that caused this thing to go so fast?"
- You wouldn't be able to answer; it's just a nonsensical question. Was it the first push? The second? The fifth? The hundredth? No! It was *all* of them added together in an overall accumulation of effort applied in a consistent direction. Some pushes may have been bigger than others, but any single heave—no matter how large—reflects a small fraction of the entire cumulative effect upon the flywheel.

Pre- 2000

Good

- Main buildings partly double glazed.
- 1950's buildings oriented so classrooms face south to use day light.

Bad

- Numerous temporary classroom blocks with electric heaters, thin walls, single glazed.
- Oil fired heating to 1950's block

2000-2008

Good

- College expanding to take on more students.
- New buildings replace the temporary stock – so more energy efficient -insulated- double glazed - gas heating - fluorescent tube lights.
- LSC starts to recognise that better buildings cost a bit more £/m²
- Windfall growth funding used to complete double glazing of the 1950's block.
- DEC certification introduced starts to focus on energy use

Bad

- Still burning heating oil and the price is starting to rise.
- Electricity price has risen.
- More students, more space, more computers = more energy used

2008



Good

- Nearly rebuilt the college under the LSC capital programme.
- Would have had state of the art building with biomass heating, intelligent lighting, BMS systems and integrated air handling.
- We saw better architecture and mechanical engineering solutions

Bad

- Our bid had not been approved by the time the LSC melted down in the credit crunch.
- We didn't rebuild

2008-2012

Good

- Poor quality music block replaced- new build is fed from biomass with intelligent lights and air handling etc.
- Biomass boilers replace oil heating system
- Voltage optimiser installed feeding whole site
- 1950's blocks over roofed with double insulation.
- Heating pipes lagged.
- Cavity walls insulated.
- Funding from YPLA and Salix grants

Bad

- 2012= wettest year on record – we were roofing!
- VAT was introduced on insulation products.

2013-2015

Good

- Over-roofing is completed
- 50kw Solar array installed with the roof.
- YPLA/EFA grant used to replace poor 1950s gym=library and 1970-80 physics blocks
- EFA grant refurbishment of A-B corridor adding LED lighting to replace flourescent tubes

Bad

- Academy sector is growing in importance and grant funding for improvements are going to be pooled with lots of schools in poor condition to attend to.

2016-2017

Good

- Continued with refurbishments – adding LED lighting and dyson V blade driers to toilets.
- New air handling units to kitchens
- Further extension of BMS system to control heating.
- Some motion sensors for air conditioning

Bad

- Kitchen refurbishment lacks finesse of M&E engineering leading to overheating.
- Biomass boiler starting to have more expensive repairs.
- 1 of 3 PV inverters failed and needed to be replaced
- Continued pressure on ESFA grants owing to academy sector– only Salix helping us

Running throughout



- Keep talking to the cleaners and property staff
- Keep talking to the IT team
- Keep talking to all staff
- Students like it if they have dyson driers, watersaving taps and flushes and lights that go off when no one is there
- Keep recording the data – so you can look back and see how far you have come...
- Occasionally we used thermal images to see where our buildings were losing heat.
- Put some of the data in your annual accounts?

Still to aim for



- How to get outlying buildings away from gas?
- Sport hall still to be refurbished.
- Still more could be done with intelligent lighting and computer sleep mode?
- Still interested in solar for schools (more PV)
- Still interested in wind power
- Still problems with a single pipe 1950 heating set up.
- Lights to LED

Carbon reduction so far



- Using around 38-40% less CO₂ compared to 2003 across the site
- With the increase in students since 2003 using around 48-50% less CO₂ per student.

Back to the flywheel?



- Was it the first push? The second? The fifth? The hundredth? No! It was *all* of them added together in an overall accumulation of effort applied in a consistent direction. Some pushes may have been bigger than others, but any single heave—no matter how large—reflects a small fraction of the entire cumulative effect upon the flywheel.

2.0 Energy saving – Carbon Trust



- Further and higher education – [click here](#)
- Energy survey – [click here](#)
- Behaviour change tools – [click here](#)

3.0 Salix Finance update



Department for
Business, Energy
& Industrial Strategy
www.eauc.org.uk



Environmental Association for Universities and Colleges

Who we are



- ✓ Independent, publicly funded company set up in 2004
- ✓ Mission to reduce public sector carbon emissions through energy efficiency
- ✓ **100% interest free** capital finance for the public sector
- ✓ Working with public sector clients including local authorities, educational establishments, NHS trusts
- ✓ National profile working in England, Wales, Scotland and N. Ireland

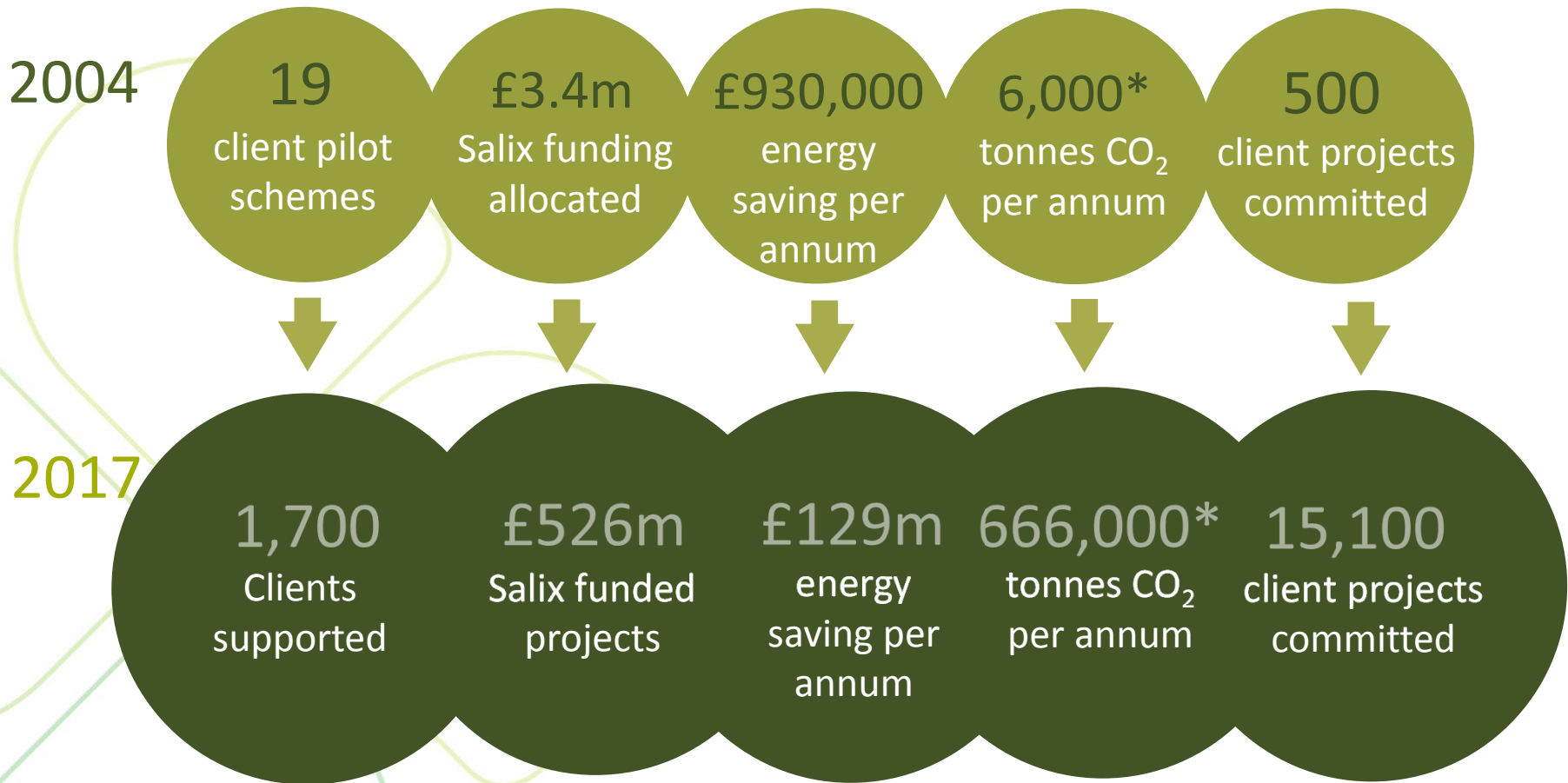


Technologies

- 100+ energy efficiency technologies and growing
 - ✓ Battery storage
 - ✓ Boilers
 - ✓ Building energy management systems
 - ✓ Computers and ICT
 - ✓ Combined heat and power
 - ✓ Heating and hot water upgrades
 - ✓ Insulation – building fabric/pipework
 - ✓ Labs
 - ✓ Lighting upgrades and controls
 - ✓ Motors and controls
 - ✓ Solar PV



Making a Difference 2004 - 2017



*calculated using emissions factors published by government in July 2015 for carbon footprinting purposes (tCO₂e)



Salix work with HE and FE



- ✓ **Rounds of funding for both *Higher Education Institutions* and the *Salix College Energy Fund* now open**
- ✓ Funding available to all HE/FE on an on going basis
- ✓ Early applications are encouraged
- ✓ Dedicated HE/FE team available to provide support in developing applications and projects
- ✓ Building long term relationships to support carbon reduction targets
- ✓ New HE and FE flyers available on our website's Knowledge Share



Salix Website: Knowledge Sharing

Freely Available Information:

- ✦ Case studies
- ✦ Application documents
- ✦ Blog
- ✦ Social media
- ✦ Webinars
- ✦ Short information films




Salix Finance working within Further Education Colleges

Salix Finance is a not-for-profit organisation that provides 100% interest-free loans for energy efficiency projects in England, Scotland and Wales. Salix is funded by the Department for Business, Energy and Industrial Strategy, the Department for Education and the Welsh and Scottish Governments.

Since 2009, Salix has funded energy efficiency projects with Further Education (FE) Colleges valued at over £19 million, which are estimated to save more than £5 million on energy bills and over 21,000* tonnes of carbon for the sector.

Further Education Colleges - Commonly installed technologies

- Boiler controls
- Building management systems
- Boiler replacement
- External LED Lighting
- Heating and hot water
- LED Lighting
- Lighting controls
- Lighting upgrades
- VSDs / Motor Controls

Five simple steps to apply

1. Go to the Salix website salixfinance.co.uk/loans/Salix-College-Energy-Fund
2. Download and complete the Salix compliance tool



Public Sector Only:

- ✦ 400+ Project Knowledge Slides (PKS)
 - ✦ Experiences
 - ✦ Lessons learnt
 - ✦ Supplier
 - ✦ Contact details
- ✦ Best practice and client support material
- ✦ Regional meeting material and presentations



Bournemouth International Centre - LED Lighting by Bournemouth Borough Council

BEFORE

- 26 W PL downlight and 4 x 18 W modules
- 214,337 kWh consumed
- Mixed operational hours - majority at 90 or 168 hrs/week
- £25,056/yr running cost
- Many were 20 years old and needed replacing

AFTER

- 16 W downlight & 40 W flat panel
- £49,846 project value (93% of project)
- 114,224 post-kWh
- 100,113 annual kWh saving (49%)
- £11,703/year savings
- 4.3 year payback
- 50.1 tCO₂e saved per year

Project completion date – February 2016

www.salixfinance.co.uk



Funding availability



- ✓ Funding available for over 100 energy-efficiency technologies
- ✓ Applications are all made through our website - salixfinance.co.uk/loans
 - HEIs: Application Form
 - FEs: Compliance tool and business case (<£100k)
 - Supporting Calculations
- ✓ Projects assessed and funding allocated based on value for money both in terms of financial payback on funding requested and estimated carbon savings
- ✓ Expression of interest for projects at early stages



Technical evaluation process



- ✓ All projects evaluated by Salix technical team before funding approved
- ✓ Larger projects (>£100k) require a business case evaluations
- ✓ Team looks at savings calculations, cost basis and technical specifications
- ✓ Discussion with applicant on any questions from the assessment
- ✓ Usually completed in less than 2 weeks
- ✓ **Salix are now supporting funding for Solar PV projects**
 - Energy Efficiency and behaviour works will need to have been prioritised
 - Salix have developed a support tool for applications (available on the



Solar PV



Factors to consider for funding applications:

✓ Calculations for generation and electricity savings

- Electricity generation profiles, across daily and yearly periods
- Local factors considered – solar irradiation levels, panel orientation and any effects from shading
- Site demand profile – when will electricity be used on site, or exported to the grid

✓ Technical specifications of the Solar PV system

- Panel choice, £/kW output as a recommended comparison measure
- Inverter sizing
- Roof fixing arrangements
- Battery storage

✓ Financial savings

- Savings in utility bills, through reduced electricity demand
- Income from Feed-In Tarriffs, both generation and export tariffs

✓ Cost calculations demonstrating how the total project costs have been built



Salix summary



- ✓ A wide range of energy efficiency technologies can be funded with the potential to add new technologies
- ✓ Funding available over a number of years to support long-term energy efficiency strategies
- ✓ Possible to fund a whole host of projects at once so a holistic approach can be taken
- ✓ Load paid back over period of 5 years via 6-monthly direct debit instalments
- ✓ Salix HE/FE and Technical Services teams available for meetings to support the development of projects
- ✓ **Round of funding for *Higher Education Institutions and Salix College Energy Fund* now open**





For more information please
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4.0 EAUC benchmarking survey

- Previous survey – March 2017

1. What is the name of your institution?
2. Policies
3. Does your institution have a carbon reduction target? If so what is it?
4. When calculating your current carbon emissions (gas and electricity) do you calculate in any of the following:
5. Do you have an Environmental Management System accreditation in place? If so which one?
6. Does your institution implement any of the following sustainable food practices?
7. Does your institution have annual sustainability targets?
8. Are targets set for individual departments to ensure all corporate and curriculum areas contribute to sustainability targets?
9. Is sustainability included in parts of the curriculum even if targets are not yet set?
10. Does your institution have an Environmental/Sustainability Committee who meet throughout the year?
11. Do you have student representatives who attend regular sustainability/committee meetings?
12. Is your Student Union actively involved with sustainability?
13. Has your institution installed any renewable technologies?
14. What renewable technologies have been installed?
15. What is the total renewable technology electricity (kWh) contribution?
16. Which of the following relates to the total volume of recycling your institution achieves annually?
17. Does your institution monitor water consumption?
18. Does your institution segregate its general waste from its recycling onsite?
19. Does your institution carry out food waste recycling?
20. Does your institution operate an organic food waste stream?
21. Does your institution have any other recycling schemes in place?
22. Does your institution have an up to date Travel Plan for each campus?
23. Do you charge staff and students to park on the car parks?
24. Does your institution offer electric vehicle charging points to staff and students?
25. Does your institution charge a fee for the use of the electric charging points?
26. Does your institution have a fully or partial electric fleet?
27. Does your institution provide staff and/or students with a car share scheme?
28. Does your institution run its own walking and/or cycle club?
29. Does your institution run its own bike locker scheme for staff and/or students?
30. Procurement
31. Does your institution use a procurement consortium?
32. Staff and Student Engagement
33. Sustainability is embedded into students learning programs through the following:

A large, faint, light green graphic in the background, consisting of several overlapping rounded shapes that resemble leaves or petals, arranged in a circular pattern.

Thank you!