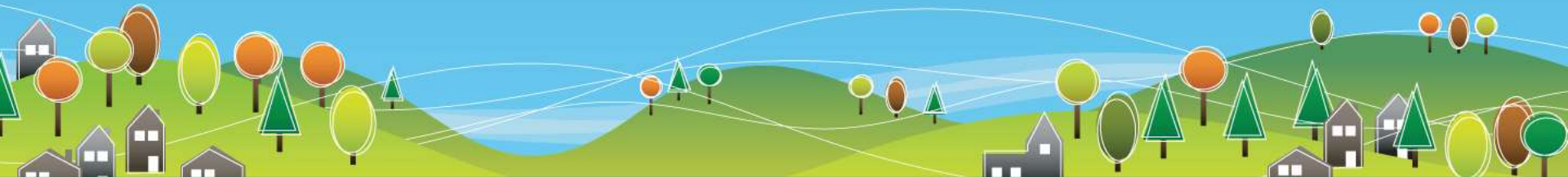


Financial mechanisms to help encourage the take-up of energy conservation measures in existing buildings

Phil Harris CEng CEnv CMgr FCIBSE MIEE MEI MCMi MBIFM
Chief Engineer, Worcestershire County Council

SCALA/SCEME Study Day 3 June 2011, University of the West of England



Scope of Workshop

Cost-effectiveness of various energy conservation measures

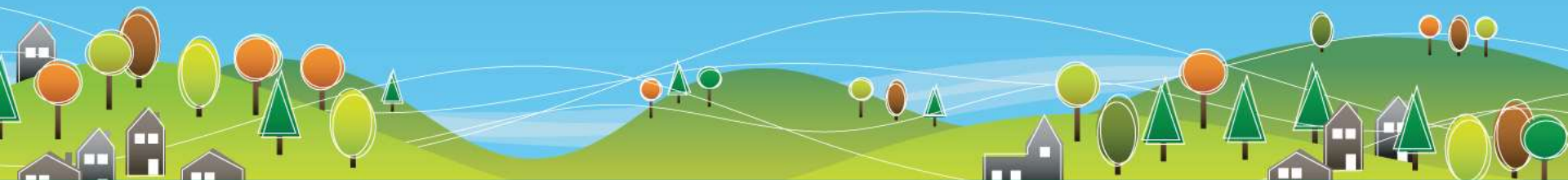
Barriers to implementing energy conservation schemes

Existing funding mechanisms and drawbacks

The Worcestershire “Spend-to-Save” approach

Repayment mechanisms for schools and Academies

Conclusions, discussion and feedback



Typical energy conservation measures appropriate to Local Authority buildings and schools

Draught-proofing

Cavity wall insulation

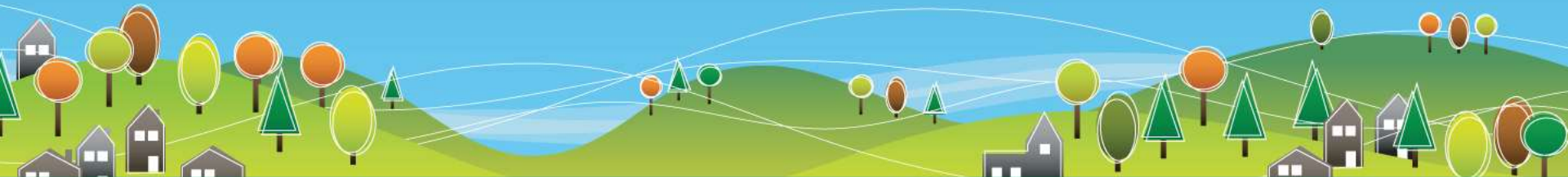
Loft insulation

Window replacements

Lighting upgrades and controls

BEMS installations

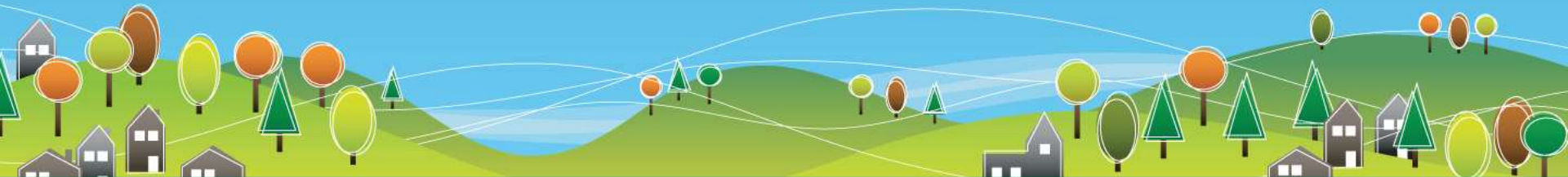
Solar photo-voltaic panels



Typical energy conservation measures appropriate to Local Authority buildings and schools

TYPICAL PAYBACK PERIOD

Draught-proofing	1-2 years
Cavity wall insulation	4-6 years (where feasible)
Loft insulation	4-6 years (where feasible)
Window replacements	10-15 years
Lighting upgrades and controls	8-12 years
BEMS installations	6-10 years
Solar PV	9-13 years



Barriers to implementation of energy conservation measures

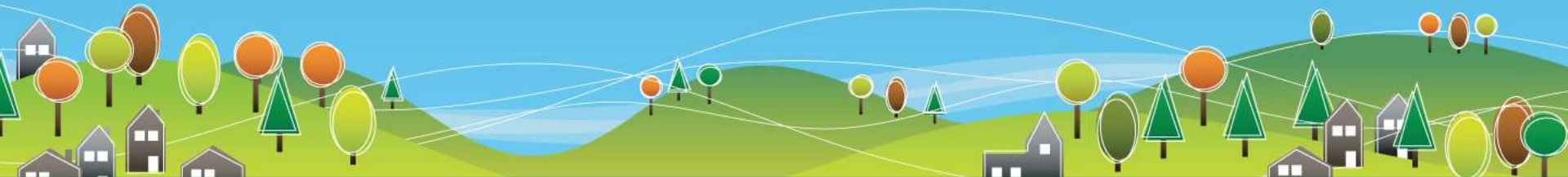
Lack of motivation...

Perceived disruption...

Insufficient importance attached to energy saving...

Small proportion of energy spend to total budget...

Preoccupation with “green bling”...



Barriers to implementation of energy conservation measures

Lack of motivation...

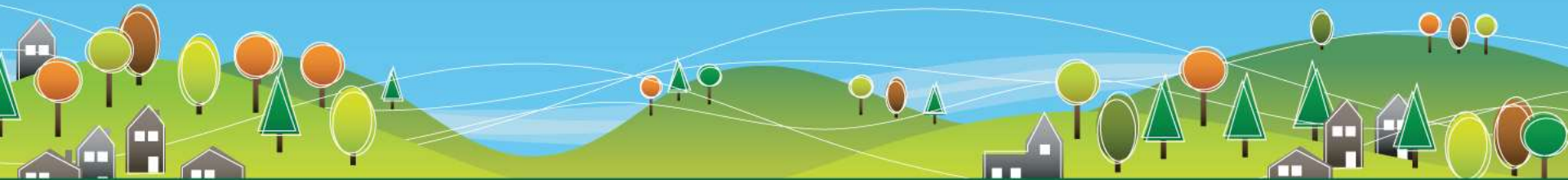
Perceived disruption...

Insufficient importance attached to energy saving...

Small proportion of energy spend to total budget...

Preoccupation with “green bling”...

...or simply lack of money?

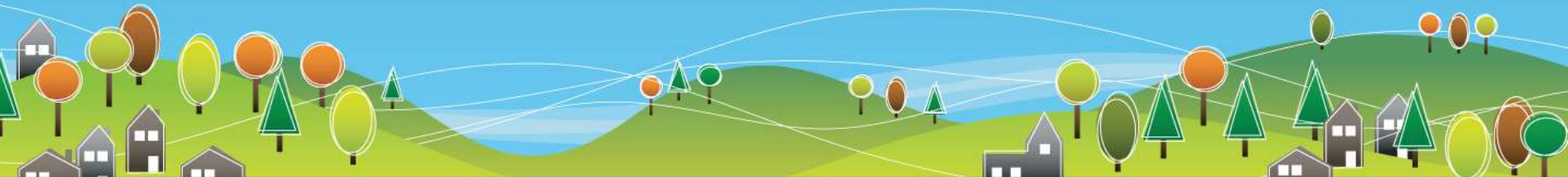


Easy to say, hard to do...

Many Local Authorities have put in place:

- ✓ Robust energy and sustainability policies...
- ✓ Extensive surveys of buildings...
- ✓ Monitoring and targeting...
- ✓ Action plans...

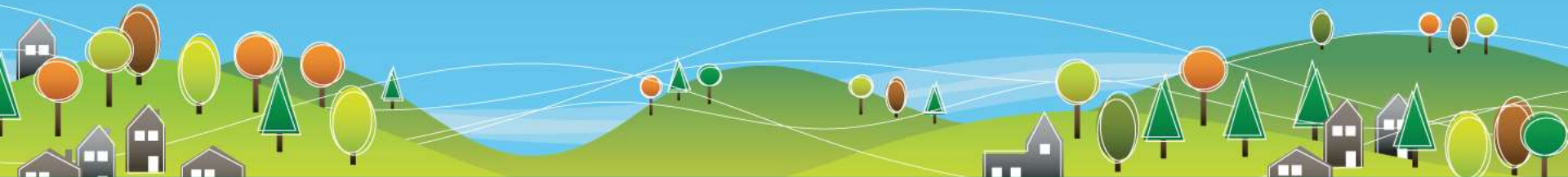
...but implementing the plans stalls through lack of funds



Sources of external funding for Local Authority own estate and other initiatives

Salix Finance

Salix is an independent company funded by the Carbon Trust to work with the public sector to reduce carbon emissions by investing in energy efficiency measures. Salix provides both grant funding and expertise. A range of measures are eligible for funding and Salix typically provides grants of £250,000 and up to £500,000.



Sources of funding for LAs (2)

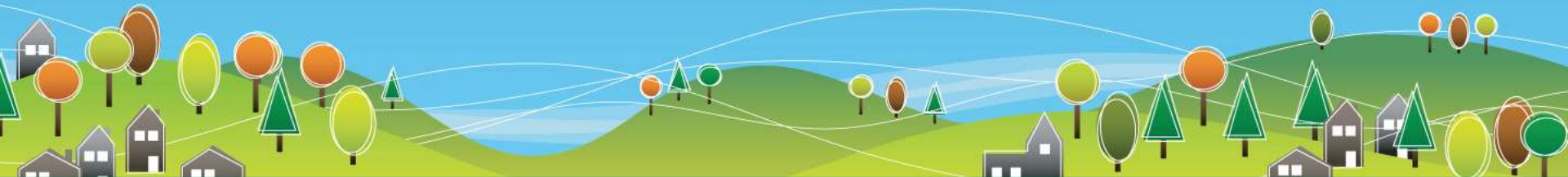
Regional Improvement and Efficiency Partnerships (RIEP's)

A share of a three-year funding package of £185 million from Communities and Local Government is available from the nine RIEPs which were created in April 2008. *Depending on your RIEPs priorities, funding is potentially available for projects relating to climate change.*

Sources of funding for LAs (3)

EU LIFE+ Fund

Offered ***co-financing*** of projects under three headings: nature and biodiversity; environmental policy and governance; and information and communication. Up to 243 million Euros was available, and project proposals should have been sent to the relevant national authority by 1 September 2010...



Sources of funding for Community Projects (not necessarily available to Local Authorities)

Community Sustainable Energy Programme

E.On 'Sustainable Energy Fund'

Scottish Power 'Green Energy Trust'

Big Lottery Fund

EDF 'Green Energy Fund'

Npower 'Juice Fund'

Note: in May 2011 the coalition government announced the withdrawal of direct funding to The Carbon Trust and the Energy Savings Trust...

Drawbacks with sources of external finance

Not guaranteed to be available

Frequently time-limited

Bureaucratic application process

May require annual reporting on carbon reduction achieved

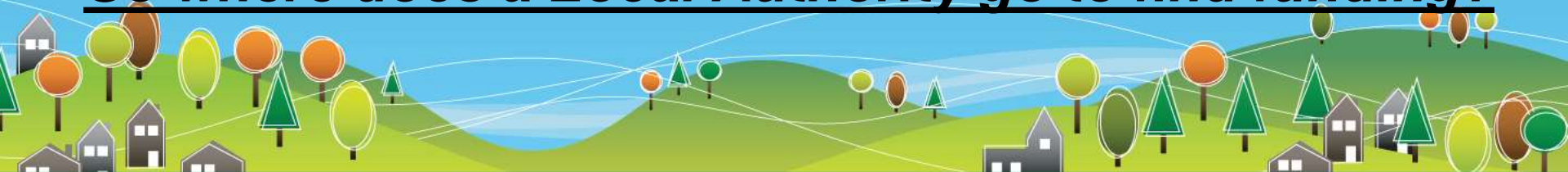
Subject to competition, with associated application costs

Often only offer part-funding or 'match funding'

May only be available for short payback measures (5 years)

Subject to change or withdrawal due to government policy

So where does a Local Authority go to find funding?



If you want something doing, do it yourself...

Worcestershire County Council set up the “Energy Efficiency Spend-to-Save Fund”

Available initially for 3 years, but no time limit

Simple application process

No reporting on carbon reduction achieved

No competition, no application costs

Offer s 100% funding for eligible schemes

Available for measures with payback up to 10 years

Not subject to change or withdrawal

Funded wholly from internal Council reserves

Creating the business case

A joint working group (Property, Energy, Children's Services, Financial Services, Sustainability) was established in 2010

The group estimated, from Property Asset records, the numbers and types of energy conservation projects across the Council's estate

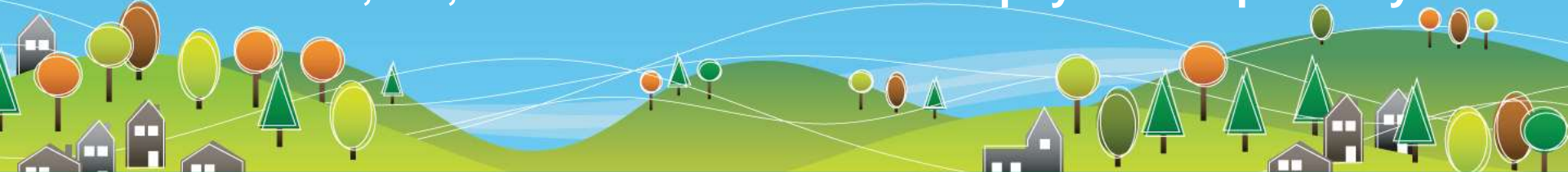
Estimated budget ~ £500,000 over 3 years

Paybacks of up to 7 years were initially envisaged

Drafted a simple payback mechanism specifically aimed at schools

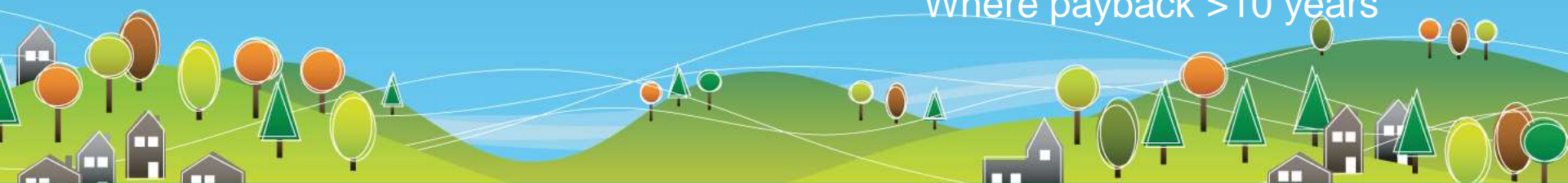
Took request to Director of Finance for an interest-free loan – he must have been in a good mood!

Guaranteed £1,000,000 to fund schemes with paybacks up to 10 years



Eligibility for Spend-to-Save funding

	PAYBACK	FUNDING
Draught-proofing	1-2 years	100% spend-to-save or own funds
Cavity wall insulation	4-6 years	100% spend-to-save or own funds
Loft insulation	4-6 years	100% spend-to-save or own funds
Window replacements	10-15 years	50:50 shared with maintenance
Lighting upgrades and controls	8-12 years	50:50 shared with maintenance
BEMS installations	6-10 years	100% spend-to-save
Solar PV	9-13 years	Up to 100% spend-to-save with contribution from school Where payback >10 years



How the scheme works

“This is a ring-fenced, interest-free loan available to schools/Council Establishments for the specific purpose of funding the capital cost of energy saving measures.

The loan is repaid from the anticipated financial savings your school will make from the reduction in energy bills. A fixed payback amount and period will be agreed at the outset, based on a comprehensive payback analysis. This will ensure the annual cost is neutral to school/establishment budget.

Once the loan is repaid the school/establishment will keep the on-going savings. For example, installing cavity wall insulation normally pays for itself within five years and will continue to deliver financial and carbon savings to your school/establishment for twenty or more years. For more information please visit our Energy Efficiency Spend to Save Fund page.”



How the scheme works

Expression of interest sent by client to Energy Team by e-mail

Energy Team evaluates proposal for payback criteria and feasibility

Proposal allocated to a Project Officer

Project Officer contacts client to discuss requirements

Formal feasibility study prepared defining the costs using established payback calculation template spreadsheet

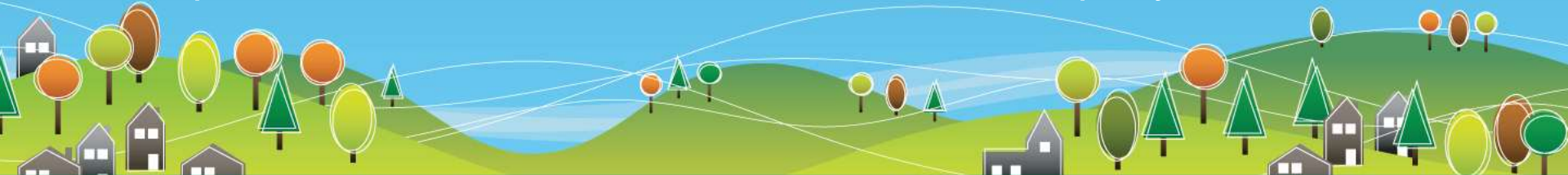
Projects will be prioritised in order of cost-effectiveness, and funding approved in accordance with the 'Energy Hierarchy'

Client commits to repaying the capital cost in annual instalments over the predicted payback period. This commitment requires the signature of the appropriate budget holder on a simple application form

Annual recharge arrangements set up by Financial Services

Other advantages

- ☺ Process and works overseen by Property Services
- ☺ Helps support workload as capital budgets are cut
- ☺ Fees recovered from works undertaken, at 9%
- ☺ Works undertaken by Council's own local Approved Contractors
- ☺ No need to use stipulated suppliers from outside the area
- ☺ Simple assessment of feasibility based on robust predicted payback
- ☺ No risk to Council – money loaned will always be returned to the fund
- ☺ Fund is recycled and repayments received can be loaned out in future
- ☺ Keeps schools and Academies in contact with Property Services



Projects in progress and other outcomes

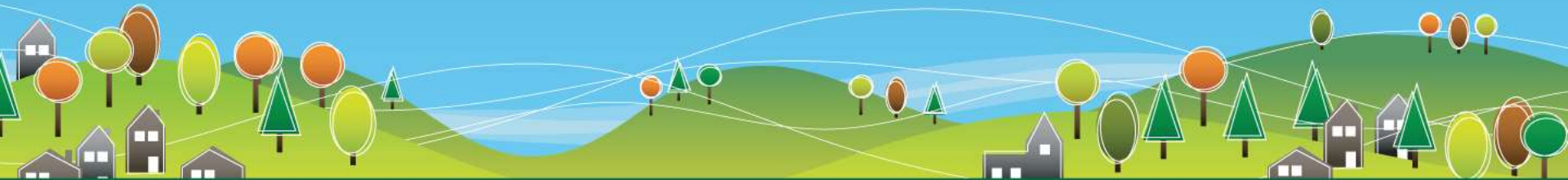
Passive measures

Loft insulation, cavity wall insulation – several completed, but only technically feasible in ~ 25% of all potential properties surveyed

Draught-proofing – applicable to most buildings

Window replacements – several schemes start this summer, part-funded by Spend-to-Save but the majority paid for from Condition Maintenance

Costs can be very low for simple passive measures, in most cases below the £2,000 lower limit set for the Spend-to-Save loan scheme. Schools are then encouraged to invest their own devolved capital – many schools have tens of thousands of pounds in the bank!



Projects in progress and other outcomes

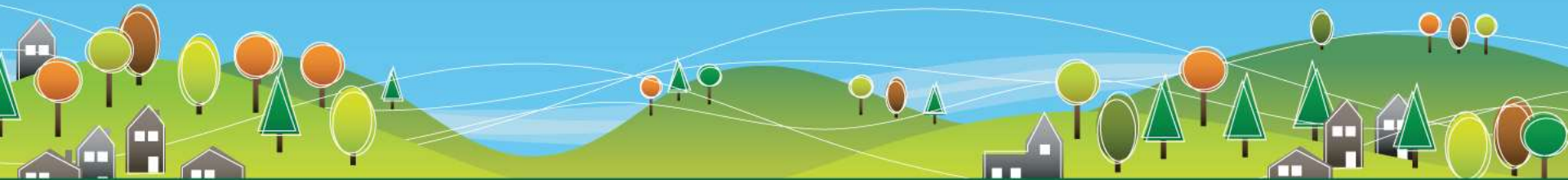
Active measures

Lighting replacement schemes – several in progress this summer

Many lighting systems in older schools are over 25 years old, in such cases costs are shared 50:50 between Maintenance Budget and Spend-to-Save Fund

Boiler replacements – none approved to date

Studies show that replacement on energy grounds alone is not justified ~ payback in excess of 40 years



Projects in progress and other outcomes

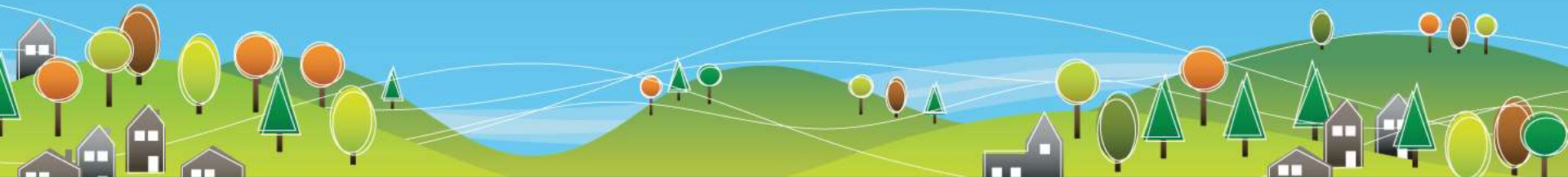
Renewables

Solar PV panels – every school wants one!

Analysis of over 20 proposals shows that payback is rarely under 10 years, even including FIT income

A small number of retro-fit schemes have been part-funded to date, with a school contribution of around £3,000 per site

Spend-to-Save funding has been used to help fund PV panels on new schools where the project budget was insufficient



Biomass boilers



County Hall 700 kW chip



King Charles
Arts & Dance
Centre 20kW
pellet



Countryside
Centre 25kW
chip

Ground Source Heat Pumps



Roman Way



Red Hill Primary School



Fairfield Community Primary School

Thank you for listening

Questions and Discussion

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www.worcestershire.gov.uk

<http://www.worcestershire.gov.uk/cms/community-and-living/property-services/property-support-and-maintenance/energy-management/spend-to-save-fund.aspx>

