

Open Report on behalf of Director of Childrens Services and Director for Development

Report to:	Schools Forum
Date:	30 June 2010
Subject:	Saving energy and money in our schools

Summary:

This report provides an update on action taken so far supporting schools in becoming 'sustainable schools'
It also outlines opportunities to reduce consumption and save further money through supporting programmes for

- automatic (smart) metering, monitoring and targeting
- further energy audits assessing opportunities for energy and cost savings
- investment in energy efficiency measures through the Council's Salix revolving fund

and suggests that the Forum note opportunities for investment in renewable technologies in light of Government fed in tariff scheme
It seeks the backing of the Forum in this programme and in establishing a sub-group to support that work

Recommendation(s):

1. That the Forum supports the programme for implementing smart metering, automatic targeting and monitoring
2. That the Forum establish a sub-group to support work on implementation of the scheme and energy saving in schools

Background

- 1.1 Lincolnshire County Council (LCC) spends around £11 million annually on electricity, gas and oil. £8.2m (75%) of this energy usage is associated with buildings. Of this £2.84m can be attributed to energy use in Council Buildings and £5.26m in schools.
- 1.2 The County Council has a number of high level commitments relating to climate change, carbon management, and environmental performance
 - Signed Nottingham Declaration on Climate Change January 2007
 - Carbon management Plan and target of 20% reduction by March 2012
 - Local Area Agreement targets of 12.5% reduction by March 2011
 The scope of these targets includes schools.

- 1.3 The Carbon Reduction Commitment (CRC) is a mandatory emissions trading scheme that aims to improve energy efficiency and reduce the amount of carbon dioxide (CO₂) emitted in the UK. From April 2010 organisations meeting the criteria (Lincolnshire County Council does) are obliged to participate and will have to
- Monitor emissions
 - Purchase allowances on an annual basis (£12 per tonne in the first phase)

Emissions from state-funded schools in Great Britain are included in the scheme through their local authority and this will include all Academies and Foundation Schools.

Participants will be ranked according to performance and receipts from the scheme will be recycled depending on position; in year 1 bonus/penalties will be +10%/-10% rising to +50%/-50% in year 5. LCC expects to purchase about £600,000 of allowances annually.

In the first three years performance will be assessed by a weighted mix of

- Emission reduction performance in previous years
- Proxy measures to reward early action (Automatic metering and Carbon Trust Standard/Energy Efficiency Accreditation Standard)
- Organisational growth

In the second phase (April 2013 on)

- a cap will be introduced on the total number of allowances available
- the annual sale of allowances will be by auction
- the early action metric will no longer be included as part of the performance league table

- 1.4 Government has recently issued a carbon management strategy for the schools and their local authorities. It sets an ambitious target to cut current carbon emissions from energy use by more than half within ten years. The school sector is currently responsible for 15% of public sector carbon emissions. Under the new strategy, Climate Change and Schools, there will be an expectation for schools, local authorities and Government to work together to reduce carbon emissions. The government has set out a target for reducing emissions from school energy use – a 42% reduction on 1990 levels by 2020. Because schools energy use has gone up since 1990, this equates to a 53% cut on current emissions.

2. Work to Date

- 2.1 Working in partnership with CfBT, Lincolnshire County Council has had a Sustainable Schools project for some three years now. It was recently cited in DCSF Guidance for local Authority Officers as a best practice example (Appendix A). Sustainable Schools Showcases were held in 2009 and 2010. 2010 saw attendance reach 1,500, over 120 exhibitors and representatives from 134 Lincolnshire schools (pupils and staff). A working group co-

ordinating activity has been established and two Sustainable Schools Advisers are in place.

2.2 The Council's revolving carbon management fund is increasingly being used by schools investing in energy efficiency. To date school schemes worth over £260,000 have been commissioned or are in the pipeline, realising annual savings in the order of £65,000 and 405 tonnes CO₂.

2.3 The Council's carbon management plan (relating to buildings) was recently reviewed as part of economic scenario planning. The Carbon Management plan review validated and updated the original figures and agrees a strategy to

- Proceed with the implementation of smart metering in council buildings.
- Proceed with the implementation of smart metering in schools.
- Proceed with the implementation of the energy efficiency work in the poor energy performing council buildings and schools. This involves investment of between £2 million and £3.7 million to carry out energy efficiency work on 90 council buildings and 43 LCC funded schools. Of the initial £2 million funding already identified it is expected that only around £800,000 of this will be provided by LCC. The Development Directorate has now committed this funding. The other funding is expected to come from Salix and from monies recovered from a utilities audit. It is only possible to provide realistic costs and associated savings for this work once detailed energy surveys have been conducted. However using indicative cost and saving figures from 20 school energy audits carried out in 2008, indicative potential cumulative net savings for this work are expected to be in the range of £765,000 to £1.65 million over 4 years and around £5 million over 8 years (see table below).

Targeted Buildings	Estimated Investment (incl. Salix funding) (£'000s)	Potential Cumulative Net Savings (£'000s) Years 1 - 4 (2010-13)	Potential Cumulative Net Savings (£'000s) Years 5 - 8 (2014-17)
Up to 90 Council Buildings	1257 - 2379	475 - 1036	3115 - 3676
Up to 43 LCC schools	733 - 1396	290 - 621	1850 - 2100
Total	1,990 - 3,775	765 - 1,657	4,965 - 5,776

2.4 In addition to investment in energy efficiency there are some opportunities arising as a result of changes in Government support for renewables

technologies. April 2010 saw the introduction of a system of feed-in tariffs (FITs) to incentivise small scale, low carbon electricity generation by providing 'generators' with financial rewards for the electricity they produce.

2.5 'Generators' can benefit financially through three mechanisms – payment of a 'generation tariff', payment of an 'export tariff', and financial savings through not importing electricity. For the purpose of FITs, any individual or organisation (such as schools) who generates electricity, and partakes in the scheme is referred to as a 'generator'.

2.6 The FITs are designed to provide stimulus to the renewable energy market by making such installations more financially attractive to prospective installers. Furthermore, it is anticipated that the expected increase in demand, will reduce installation costs. Fuller details of FITs and potential returns are provided in Appendix B.

2.7 A number of schemes are emerging which seek to make installation of solar panels, in particular, available to schools at no upfront cost. These are linked to repayments reflecting energy bill savings, generation and export income from FITs. The following table provides four scenarios relating to solar PV installation and the investment potential. Figures are based on a 25 year equipment life; current energy prices (paybacks and income improve as prices rise as predicted by Ofgem); and do not include the FIT guaranteed inflation proofing.

Array Rating kWp	Estimated Installed Cost (costs obtained from installers websites, and local installer Freewatt)	Annual Generation (kWh)	Annual FIT generation Benefit	Annual Electricity Bill Savings pa	Annual Electricity Export Benefit	Total Annual Benefit	Payback period (Years)	Annual Return On Investment (%)	Net Lifetime Benefit
4	£ 16,000	3500	£ 1,446	£ 420.00	£ 52.50	£ 1,918	8.3	12.0	£ 31,950
10	£ 35,000	8750	£ 3,159	£ 1,050.00	£ 131.25	£ 4,340	8.1	12.4	£ 73,500
70	£ 220,000	61250	£ 19,233	£ 3,675.00	£ 918.75	£23,826	9.2	10.8	£ 375,656
120	£ 365,000	105000	£ 27,287	£ 6,300.00	£1,575.00	£35,162	10.4	9.6	£ 514,040

For example a small school installing solar PV at a cost of £16,000 could expect to see payback within 8.3 years and accrue nearly £32,000 income over the remainder of the equipment life.

2.8 We have spoken with local suppliers/installers and have been approached by others who wish to put financing proposals to schools. There are two key issues to consider

- If the rate of return is as shown would it make sense for County Council to invest in the opportunity

- Should the County Council set up frameworks to make installation simpler and more reliable (ensuring MCS accredited installers and equipment is used) for schools (MCS accreditation is required anyway to qualify for FIT)

Conclusion

- 3.1 The metering and monitoring for schools scheme is expected to require an investment of around £250,000 (see Appendix C) with annual costs estimated at £42,000. Due to the modest cost and the fact that virtually all schools will benefit, a buy back arrangement would seem to be too bureaucratic. An alternative approach would be to utilise some of the uncommitted headroom funding within the 2010/11 DSG to finance the purchase cost. This could be recorded against the CERA line on the s251 statement. The annual revenue costs could then be top-sliced from the DSG and paid via Schools Contingency each year, to avoid annual invoicing of all schools.
- 3.2 It is expected that metering and monitoring will realise cumulative net savings of around £1.1 million over the next four years. These saving will be realised through reduced energy bills in schools. Payback is only 1.4 years, the business case is very attractive and the implementation of smart metering in schools directly helps LCC improve its position in the CRC Energy Efficiency Scheme's league table.
- 3.3 The Director of Children's Services supports this approach and further suggests that it would be useful to establish a sub group to assist in delivery and on reducing energy use and carbon in schools.

Consultation

a) Policy Proofing Actions Required

N.A.

Appendices

These are listed below and attached at the back of the report	
Appendix A	Extract from DCSF guidance 'Delivering sustainable communities through sustainable schools'
Appendix B	Feed in tariffs briefing
Appendix C	Metering costs

Background Papers

The following background papers as defined in the Local Government Act 1972 were relied upon in the writing of this report.

Document title	Where the document can be viewed
----------------	----------------------------------

Lincolnshire council management plan	County carbon	Sustainability and climate change team, Directorate for Development
--	------------------	--

This report was written by Douglas Robinson, who can be contacted on 01522 554816 or douglas.robinson@lincolnshire.gov.uk.