



Energy Management in Schools: An Introduction

This document explains more about what an Energy Management System is and how your school can implement one. This is the first in a series of guides covering each step of the energy management process outlined in the diagram below.

This guide also highlights the support and services available to Bath and North East Somerset schools to help them manage and reduce energy use effectively. The target audience is senior management staff and Eco-Teams in:

- 1. LA Primary Schools**
- 2. LA Secondary Schools**
- 3. Academies**
- 4. Special Educational Needs Schools**

Bath and North East Somerset Council has agreed a target to reduce carbon emissions from its operations by 30% by 2014 from the baseline year 2007/08. National government has also set carbon reduction targets (or budgets) as part of the Climate Change Act 2008

Schools currently account for over 40% of the council's carbon footprint. This significant fact, along with rising costs of energy has led to a Schools' Carbon Reduction programme which has been agreed with Schools' Forum.

This strategy covers technical information, capital investment, energy management, behaviour change and education support.

What is Energy Management?

The aim of energy management is to get the best conditions for learning with the minimum possible energy use. This will ensure minimum carbon emissions and maximum funds available for education.

While improvements to buildings and building services such as heating and lighting can make big differences to your energy use, if the occupants are not sure how best to use the heating systems (for example) or neglect the impact of their behaviour on the energy use, then the savings you expect will not be achieved.

As much as 30% of the potential to reduce energy use in a building is dependent on the behaviour of the occupants (www.less-en.org). If you think about it 100% of the energy is determined by behaviour, as we could choose never to heat or light a building – but that would defeat the point!

Did you know?

The Carbon Trust estimates no-cost and low-cost energy efficiency measures are capable of saving a secondary school up to £21,500 a year - which is equivalent to the salary cost of a newly qualified teacher. (Source: Carbon Trust news release 7.11.12)

Energy Management is not just about installing solar panels or getting a new boiler – it is just as important to make sure that boiler is used carefully.

Figure 1b Schools – percentage of energy cost

Space heating (fossil fuel) 45%	■
Catering (elec) 6%	■
Hot water (elec) 2%	■
Lighting (elec) 20%	■
Office equipment 1%	■
Other (elec) 4%	■
Space heating (elec) 5%	■
Catering (fossil fuel) 5%	■
Hot water (fossil fuel) 10%	■
Other (fossil fuel) 2%	■



Energy management comprises improvements to buildings and equipment, behaviour change and energy awareness, policies and management processes and curriculum based learning.

All these elements are necessary for a successful energy management system which will reduce your energy costs and carbon emissions, whilst creating a more comfortable learning environment and equipping your pupils with the skills and knowledge they need for the future.

Energy Management and Renewables

Renewable forms of energy generation can be great teaching tools, and can play a part in reducing a schools carbon emissions but they are not the whole solution. It is always cheaper and usually easier to save energy before generating it. It is much easier to turn off all your ICT equipment every night and holiday than install solar panels on your roof!

Several schools in Bath and North East Somerset have installed large solar photovoltaic (PV) systems independently or in partnership with Bath and West Community Energy (BWCE). These projects can be viewed on their website and schools can contact BWCE if they are interested in installing similar systems. www.bwce.org.uk

Did you know?

A 8kw PV system on a south facing roof will generate around 7000kwh in a typical year. This is about the same as 18 standard desktop computers running for 8 hours a day for an average working year (220 days)

Support from the Council

Bath and North East Somerset Council provide a package of support for schools covering energy efficiency. This support comprises the Schools' Carbon Reduction Strategy, covering all aspects of schools' carbon programme:

- ➔ New energy management guides to take schools through the energy management process to show how all the elements fit together.
- ➔ Tailored energy performance information and benchmarks delivered to each school annually
- ➔ Assistance with capital improvement funded from energy savings, loans and a grant fund to reduce loan repayment times in key projects
- ➔ Comprehensive energy surveys for all 78 schools to identify the capital and operational improvements
- ➔ Training for staff on how to use energy data and engage pupils in energy management. Two training courses will be run by Resource Futures in March 2013 and two more in October 2013
- ➔ Workshops to go through the results of surveys, determine next steps and identify and remove barriers to action

Schools can also borrow a number of resources via the community resource register, including:

- ➔ OWL monitors which display current and cumulative electricity use. These are especially useful if your school does not have an AMR (Automatic Meter Reader) on your electricity meter
- ➔ Appliance Monitors which display individual appliances electricity use
- ➔ Thermal Imaging Camera
- ➔ The Eco Schools Directory – a directory of local providers and a list of key online resources categorised by the Eco School themes
- ➔ Educational games including 'Where's the Impact?' and renewable energy kits for use in lessons and group work

If you wish to borrow any of these resources please contact the Schools Energy Officer at: sustainability@bathnes.gov.uk

Energy Management Process

