

Top Tips to reduce energy and water use in schools



Energy and water are a major proportion of non-staff costs in schools and a major part of schools' environmental impact. Energy prices have been rising steadily for years but are expecting to stabilise or even fall slightly in the near future.

Some schools will have greater scope for savings than others but, overall, more than 20% of energy is wasted, and simple good housekeeping can reduce fuel bills by 10%.



1

Upgrade heating controls

- Reducing the temperature in a building by 1°C will save 5-10% of the heating bill.
- Operating the heating systems for an hour less each day will save a similar amount.

Further Information: Modern heating controls are accurate, tamperproof and have the facility for 7-day programming – i.e. the heating can be set to operate at different times of day for each day of the week. www.carbontrust.co.uk

2

Use energy efficient lighting

- Lighting accounts for around half of the electricity used in a typical school.
- Failed lamps can be replaced with energy efficient lamps (which also last longer) at minimal cost. Lighting controls are often very economical.

Further Information: In many cases, 38 mm diameter fluorescent tubes can be replaced with 26 mm versions which use 8-10% less electricity. Compact Fluorescent Lamps (CFL) use 80% less than tungsten bulbs and last much longer. www.est.org.uk

In areas which are infrequently used, install lighting sensors. See www.dfes.gov.uk/valueformoney/docs/VFM_Document_9.doc

3

Install smart metering

- Smart metering provides information about how much energy is used and when it is used, helping to understand energy use and how it can be saved.

Further Information: Automated meters can take readings at specified intervals, providing information on patterns of use, and levels of demand (i.e. equipment left running) when buildings are unoccupied. The data they provide can also be used for teaching and learning. www.est.org.uk

4

Water economy

- Water is a scarce resource and costs are rising rapidly. A school that is equipped with water conservation devices may use less than half the amount of water used in other schools.

Further Information: Installations such as cistern dams, urinal controllers, flow restrictors and self-closing taps save water and money. They are all proven, simple to apply and economic.

www.environment-agency.gov.uk/savewater

5

Manage ICT (Information and Communications Technology) loads

- The use of ICT in schools is growing rapidly. ICT equipment not only uses electricity directly, but often places further demands on electricity needed for lighting and cooling.

Further Information: The electricity used by ICT can be significantly reduced by selecting energy efficient equipment and enabling power management features. Rooms with interactive white boards should allow users to quickly and conveniently manage blinds and lighting. www.energystar.gov and www.mtprog.com

6

Insulate hot water pipes

- Keep runs of pipe work short and lag pipes properly – a great deal of tepid water may be lost before the hot water comes through.

Further Information: Lagging pipes not only saves energy but also reduces the risk of pipes freezing in the cold months. See www.est.org.uk

It is also possible to obtain more environmentally friendly insulation. Speak to your LA or purchasing consortia for advice.

7

Draught strip windows and doors

- Eliminating unwanted draughts is one of the most effective ways of saving money and improving comfort.

Further Information: Depending on the time of year, the gap between a door or window and its frame can vary by 3 mm. On a standard door this is a hole equivalent to a house-brick. Draught stripping solves this problem. Further information is available from www.dfes.gov.uk/valueformoney/docs/VFM_Document_9.doc and www.est.org.uk

IF YOU ONLY DO ONE THING, EDUCATE THE STAFF AND CHILDREN TO TURN OFF WATER AND ENERGY USING APPLIANCES WHEN NOT IN USE!

8

Check for (and repair) water leaks

- Underground leaking pipes can mean a huge loss of water, which will cost your school money.

Further Information: Check your water meter regularly. If a leak is suspected, take a meter reading last thing at night when everyone has gone home and first thing in the morning before everyone arrives. If the reading has changed, indicating consumption, this is likely to be a leak. Any known night use will have to be shut off or accounted for. Ask your local water company about their free leak detection service. www.water.org.uk/home/resources-and-links/links/water-operators

9

Renewable energy

- Small scale renewable energy systems are pollution free and will help to reduce energy bills. They can also generate interest in energy efficiency amongst pupils and provide a valuable teaching resource.

Further Information: Renewable energy systems that can be appropriate to schools include wind turbines, biomass, solar heat and power and heat pumps. Funding for renewable energy systems in schools is available from the DTI's Low Carbon Buildings Programme. www.lowcarbonbuildingsphase2.org.uk

10

Understand your bill

- The amount you pay for electricity may depend on when you use it, and not just how much you use. Using off peak (night time) electricity through timers and reducing peak demand can save significant amounts of money.

Further Information: When you receive a bill check it to make sure the cost relates to the consumption and that it is correctly related to the tariff. Check consumption to see if it seems reasonable for the time of year, the severity of the weather or the consumption of water related to the number of people. See www.dfes.gov.uk/valueformoney/docs/VFM_Document_9.doc

How Do You Compare?

On average, schools spend almost £6 on energy and water for each square metre of floor space. The chart below shows the range of performance for primary and secondary schools.

	Energy per pupil*		Water per pupil*	
	Primary	Secondary	Primary	Secondary
Highest 10%	£51.87	£64.75	£15.93	£15.77
Highest 25%	£38.98	£51.05	£11.36	£11.45
Average	£29.08	£41.00	£7.98	£7.84
Lowest 25%	£21.93	£32.79	£5.67	£5.38
Lowest 10%	£16.46	£26.28	£3.97	£3.72

*DfES data for 2004/05

What can you do?

This leaflet contains ten tips that will help you to:

- save money, year on year
- create a healthier school environment
- reduce demand on finite resources
- have a positive impact on climate change by reducing emissions of carbon dioxide from energy use
- enhance sustainable development

How can you pay for this?

Every school receives an annual capital grant that can be used for capital improvements. A typical primary school of 250 pupils, for example, will receive £34,000 next year; a typical secondary school of 1,000 pupils, £113,000. Revenue budgets can also be used.

Further information and guidance on saving energy and water and other sustainability issues can be found at the following:

Sustainability	Department for Education and Skills – Sustainable Development www.teachernet.gov.uk/sustainable-schools/	Information on the Department’s Sustainable Schools programme and guidance on sustainable development.
	Department for the Environment and Rural Affairs – Sustainable Development Unit www.defra.gov.uk/sustainable/government	The DEFRA website for sustainable development. Contains the government’s approach to sustainable development and information on the various issues within sustainability.
	Department for Trade and Industry – Sustainable Construction www.berr.gov.uk/whatwedo/sectors/construction/sustainability/page13691.html	Information on sustainable construction.
	BREEAM Schools www.breeam.org/page.jsp?id=20	BRE’s Environmental Assessment Method for all new schools buildings and major refurbishments.
	SUSchool www.suschool.org.uk/	Information, inspiration, resources and workshops for Education for Sustainable Development.
	Sustainable Learning www.sustainablelearning.info	This site is the home of Sustainable Learning, a programme providing a structured, task based approach to the way energy and water is used in schools.
	Department for Education and Skills – Growing Schools www.teachernet.gov.uk/growingschools/	Information for teachers on how to use the ‘outside classroom’.

Energy	The Carbon Trust www.carbontrust.co.uk	Helps business and the public sector cut carbon emissions, and supports the development of low carbon technologies. School specific information can be found at www.carbontrust.co.uk/schools
	The Energy Saving Trust www.est.org.uk	Information and advice on saving energy, including renewables, technologies, techniques and grants.
	Renewable Energy Association www.r-p-a.org.uk/portal.fcm	Information on renewable energy.
Water	Environment Agency www.environment-agency.gov.uk/savewater	Information and advice on saving water, including information on technologies available.
	Waterwise www.waterwise.org.uk	Information and advice on saving water.
Value for Money	www.teachernet.gov.uk/schoolfinance/	Schools Financial Benchmarking.



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