

HOT SPOT

Latest news

MEASURING PERFORMANCE

The Department for Education and Skills released new figures for schools in England, which show that in the past twelve months:

- The median energy consumption per square metre of floor area in primary schools has increased from 185kWh to 194kWh
- The increase in secondary schools is from 186kWh to 196kWh
- In general 90% of primary and secondary schools are using more energy
- The median cost of energy per square metre of floor area in primary schools in 2000-01 was £3.90, up from £3.50 in 1999-00
- The median cost in secondary schools rose from £3.50 to £3.60.
- Most schools have increased their consumption of water
- Water charges in primary schools have gone up, yet decreased in secondary schools

To find out how your environmental performance compares with other similar schools across the country visit the new Think Leadership website www.thinkleadership.org.uk

ENERGY STATISTICS

The Department of Trade and Industry has published the latest statistics on energy production, consumption and prices, in the Digest of UK Energy Statistics 2002. Extensive tables and charts cover all the major aspects of energy. The commentaries are valuable to teachers of geography, environmental issues and sustainability.

A useful pocket sized version is available free from Department of Trade & Industry on 020 7215 2697 www.dti.gov.uk/energy/inform/energy

SECURED SOLAR PV GRANTS

Two schools have already been awarded grants to install photovoltaic (PV) panels to supply electricity to their premises. The grants have been provided through the Government's Department of Trade and Industry's PVGrants programme, announced in the last issue of EnergyWatch.

The £20 million programme, managed by the Energy Saving Trust, aims to boost the number of PV systems installed on houses, flats and public buildings.

Schools can apply for 50% funding, as long as an approved company is used for the installation.

To find out more and to apply visit the website www.solarpvgrants.org.uk

energy watch

Welcome to EnergyWatch!

This is the 10th anniversary edition of CREATE's newsletter EnergyWatch and for the first time it is being distributed to all schools in England, thanks to extra funding from Government.

"I firmly believe that schools are very important targets for energy programmes as they are uniquely placed to reach both the wider community and future generations of energy users. The imaginative curriculum projects featured in EnergyWatch can help improve sustainable energy education, at the same time as improving the environment.



This government supports energy education, and CREATE, as co-ordinating body in this area, has an important role to play in working to reduce the threat of climate change, by promoting energy efficiency and sustainable development. I am very pleased that DEFRA is able to assist CREATE's work in schools, through our Environmental Action Fund. I encourage all schools to use the information and advice on innovative ways to save energy in local communities that CREATE provides."

Lord Whitty of Camberwell,
Minister of State for Sustainable Energy

CREATE is working to reduce the effect of climate change through promoting energy efficiency and sustainable development. EnergyWatch aims to inspire others to teach about energy in an engaging way and help tomorrow's decision makers learn to demand better buildings and use renewable energy technologies.

The speakers at the 'Being Energy Smart' conference at the London Science Museum, October 2002

Being Energy Smart



The Being Energy Smart conference was organised by CREATE on behalf of the Energy Education Forum.

This was the first event of its kind, its aim: TO STIMULATE DEBATE ABOUT ESTABLISHING A CO-ORDINATED APPROACH TO SUSTAINABLE, ENERGY EFFICIENT SCHOOLS IN THE UK.

The conference attracted 65 delegates, from government departments and organisations. Local authority energy managers and environmental co-ordinators attended, as well as head teachers, school governors and education advisers.

Johnny Ball, TV personality and science education champion introduced the proceedings with a fascinating description of what Earth looks like from space (not 'Earth' at all, but lots of water!). He emphasised the need for young people to become experts on how to sustain our 'Happy Planet' and enthused about their ability to control the pressure being applied to the world we know and love.

Keynote speeches were made by Dr Alan Morton, Senior Curator of Physics at the National Museum of Science and Industry (the conference venue), and Dan Sze, National Programme Manager, Rebuild America.

Dan gave an overview of the support for energy issues that is available to schools in the USA. EnergySmart Schools is a co-ordinated programme, which offers advice on: -

- High performance building design
- Energy efficiency technologies and strategies
- Energy education
- Alternative fuel transportation
- Renewable energy systems
- Energy Star ratings

There is easy access to all this advice via one website www.energysmartschools.gov

'UK Perspectives' for Being Energy Smart were presented by North East Lincolnshire Council and Julie Hunt, Head Teacher, St Michael's Primary School, Oxfordshire.

'Visions for the Future' were given by Mike Webb, Energy Manager at Telford and Wrekin Council and Juliet Davenport of Unit[e] (a 'green energy' supplier and key conference sponsor).

The 'Open Forum' began the debate about where we go from here, with encouraging and supporting schools to become 'Energy Smart'. The following comments/proposals were among the suggestions put forward:

- Provide expert support to schools and teachers to help them teach about energy issues
- Provide funds for schools to tap into to support projects
- Boost creativity and develop a culture to be more flexible
- Develop Citizenship programmes to inspire young people, at both primary and secondary levels
- Help schools to ask the right questions and to find the answers
- Be careful not to impose too much pressure on schools to develop sustainable energy projects
- Encourage schools to investigate renewable energy systems and supplies, in terms of management practices and educational values

(managing energy)

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INNOVATIVE ONLINE 'GREEN AUDIT' TOOL OFFERS ENVIRONMENTAL AND COST BENEFITS TO SCHOOLS

As the recent Earth Summit highlighted, advancing the sustainable development agenda depends on partnerships and commitment at all levels of society.

UK schools have a significant impact on the environment. Every year schools in England spend £70m on water, £400m on energy - 25 per cent of public sector energy costs - and produce 7m tons of carbon dioxide.

The potential for schools to improve their environmental performance - dramatically and easily - is equally significant. It is for this reason that national school leadership consultancy HTI (Heads, Teachers and Industry) has joined forces with environmental services group Severn Trent plc to develop an innovative, simple to use 'green audit' web site for school leaders.

Launched in early October 2002 at the House of Commons in the presence of Michael Meacher, Minister for the Environment, the website - www.thinkleadership.org.uk enables school leaders to evaluate, monitor and improve their environmental performance.

Demonstrable 'green leadership' makes environmental and economic sense. It is estimated that the average school could save around £20.00 per pupil every year by implementing energy efficiency measures. In turn, this would reduce carbon dioxide emissions by over 20 per cent.

The 'green audit' tool (accessed via the school's DfES number) is at the heart of the Think Leadership web site. It is simple to use, complements other environmental initiatives and can be applied at several levels.

An online questionnaire covers the school's environmental impact in six areas: energy; air quality; biodiversity; waste management; water and pupil activities.

The input data generates a variety of benchmark values, which can be used to compare environmental performance with similar schools, locally and nationally. The website will automatically create prioritised action plans to improve environmental performance and achieve costs savings.

Each section provides a context, background and statistical data for the environmental theme, together with helpful advice on technologies available for improvements.

Schools can calculate the payback time for an investment and track improvements. There are also links to other environmental sites offering technical advice, opportunities for funding and curriculum resources for pupils, as well as case studies of good practice.

"Think Leadership puts heads and senior teachers at the heart of environmental leadership without excessive workload demands," commented HTI chief executive Anne Evans. "By actively managing their environmental impact, schools are also sending out powerful, motivational signals to all their stakeholders."

Jim Oatridge, group services director of Severn Trent plc and chairman of HTI said: "This audit tool has enabled us to share lessons we have learnt in business about improving environmental performance with the education sector, a practical example of knowledge transfer to the next generation of business leaders."

For further information about Think Leadership contact Stan Terry, Environmental Consultant, HTI on 024 7641 0104, or email a.evans@hti.org.uk.

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LIGHTING CONTROL CUTS £27,000 A YEAR FROM SCHOOLS' ELECTRICITY COSTS

Barnsley Metropolitan Borough Council is enjoying an annual £27,000 reduction in its electricity bills following the completion of an ambitious project to curb the excessive use of lights in its primary schools.

Following a competitive tender, the authority appointed Ex-Or Ltd, European leader in lighting management systems, to install LightSpot presence detectors and photocells throughout 30 schools in the area.

Before the installation, lights in the schools were switched on in the morning and left on all day whether or not they were required. Ex-Or's LightSpot equipment allows the lights to come on only when the presence of occupants is detected. Once occupants leave the area, LightSpot automatically switches the lights off. Additional photocell equipment ensures lights do not come on when levels of natural light are sufficiently high.

Having secured the contract on the basis of a schedule tender worth over £100,000 Ex-Or then had less than three months to survey the buildings, identify and manufacture the necessary equipment and then get it installed and invoiced in order to secure compliance with the terms of a Government-sponsored grant that helped the council to pay for the installation.

A combination of Gold, Long Range, Standard and MidRange LightSpot detectors was used to achieve maximum lighting efficiency in the schools' classrooms, assembly halls, gyms, nursery areas and staff rooms.



The lights are on in this Barnsley school when they needed - and automatically switch off when they are not needed, thanks to lighting controls from Ex-Or Ltd. Barnsley Metropolitan Borough Council is enjoying an annual £27,000 reduction in its electricity bills as a result.

Dick Bradford, principal mechanical services and energy engineer for the project, said: "A combination of cost, superior technology, reputation and ability to install and commission in such a short time frame were the elements that led to us specifying Ex-Or. In particular, the timing of the installation was critical, to enable us to qualify for funding help from the SchoolEnergy programme, which is operated by CREATE. Ex-Or met the deadlines with time to spare, but there was no upheaval during the installation. In fact, the Ex-Or team did most of the work outside school hours to minimise any disruption. We are delighted with the way the system operates. It was a trouble-free installation and I have had nothing but good reports from staff in terms of day-to-day operation.

Lighting control like this helps meet the Council's need to be environmentally sensitive. It is delivering annual savings of £27,000 per year from our electricity bill. In terms of payback, we will see a return on our investment in just twenty one months and we will continue to save a five figure sum in reduced electricity costs for every subsequent year".

For more information contact Ex-Or: Tel 01942 719229; Fax 01942 272767; E-mail ex-or@ex-or.com or visit the website www.ex-or.com

(energy education)

The recent revision of the National Curriculum has raised the profile of Education for Sustainable Development (ESD). Schools are now being asked to secure pupils' commitment to sustainable development. They are required to teach sustainable development in geography, science and citizenship as well as to provide opportunities for its inclusion across a range of other subjects, such as design and technology and PSHE.

During the course of the autumn and spring terms (2002/03), HMI will visit approximately 28 schools to evaluate standards and quality of provision in relation to ESD. As well as inspecting provision

within the taught curriculum, they will also look at evidence more widely, in order to ascertain the impact of ESD on the general school ethos and learning environment. They will focus on specific ESD initiatives that schools may be involved in such as energy efficiency, developing the school grounds as a learning landscape and environmental management.

Ofsted plans to publish a summary report in June 2003 based on an analysis of the evidence from these visits. The report will hopefully provide exemplars of successful approaches used to promote ESD in primary and secondary schools.

Education for Sustainable Development

HMI Project 2002-03

The National Curriculum website offering support for ESD in schools www.nc.uk.net/esd has been produced for teachers in all subjects and school managers.

Learning Together

A group of four-year-olds from Speedwell Nursery, east Bristol, and their parents have successfully completed a pilot for a brand new Family Learning course called 'Energy Use and the Environment'.

The course, developed by the Centre for Sustainable Energy, includes 10 sessions encouraging both children and their parents to learn about the types of energy used in the home and school, and to consider ways of reducing consumption. As well as group sessions for the adults, there were songs, energy games and practical, fun activities to engage the children. Parents and children also enjoyed a trip to Bristol's Ecohome to witness energy efficiency and renewable energy in action.

Of the parents who took part, many were learning about sustainable development and renewable energy for the first time. Says Briony Goodwin, the tutor of the course: "The parents get a great deal from the course and, without exception, are all now really enthusiastic not only about saving energy in their own homes, but also about passing on the message to their families and friends. Attendance has been superb and for the kids and parents alike it's been an enjoyable, social way to learn about the environment."

For Ann Patterson, headteacher of Speedwell Nursery, the Family Learning course is another way of strengthening the links between the school and local community. Piloting 'Energy Use and the Environment' has cemented the school's reputation for 'green' teaching, as they were the first nursery in mainland Britain to win the Eco-Schools Green Flag award.



Pupils from Speedwell Nursery, east Bristol, with their parents, celebrate successfully completing the 'Energy Use and the Environment' course (picture supplied by Speedwell Nursery School).

For more information contact: Liz Green
liz.green@cse.org.uk

Energy Education Review

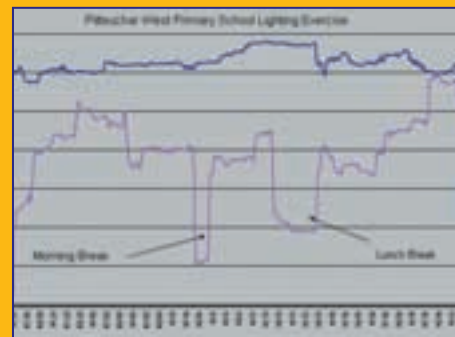
On behalf of the Energy Saving Trust, CREATE has completed a research project to discover how schools are delivering energy education.

The evidence was gathered in several ways, including postal questionnaires to schools that have been awarded cash rebates for installed energy efficiency measures through the SchoolEnergy programme. Face to face interviews were also carried out with fourteen 'SchoolEnergy' schools and fourteen schools that had not received awards. A range of national organisations involved in energy, environmental and sustainability education was invited to contribute to the study.

The research concluded:

- Although energy education is included in all UK national curricula, it is often not easily identifiable and this leads to patchy implementation in schools.
- Energy education is being taught in schools where it has been identified as a statutory requirement and where the ethos of the school supports education for sustainable development.
- There is little evidence to determine the level of pupils' understanding of energy and its efficient use. As many schools do not facilitate opportunities for pupils to apply what they have learnt it is doubtful the subject matter will be fully understood.
- Energy is taught in a variety of ways depending on the nature of the school, the ability of its teachers, leadership qualities and the school's approach to learning.
- The immediate impact of energy efficiency activities is that pupils will make efforts to save energy in the school and home. Sustained energy efficiency practices are better achieved through regular reinforcement.
- Teachers do not need more resources, as a plentiful supply already exists. What they need is increased awareness of what is available and advice on how to use current resources effectively.

CREATE has made recommendations to the Energy Saving Trust, based on the evidence gathered through this research. These recommendations will be vigorously pursued by CREATE and other organisations involved in the delivery of education for sustainable development, in an effort to ensure that action is taken to help make energy education both effective and affective in future.



This graph was submitted to CREATE by Pitteuchar West Primary School, Fife, as evidence of their whole school approach to energy management. The graph shows energy use on two consecutive days.

On Tuesday, lights were used normally and on Wednesday, the whole school made a special effort to 'switch off' when lights were not needed. It clearly shows the savings that can be made at break and lunchtimes!

Thanks to Pitteuchar and all the other schools involved in the research programme. Congratulations to Athersley South Primary, Barnsley and Lord William's School, Oxfordshire, recipients of the prize draw offered to schools completing the questionnaire and submitting their schemes of work for

energy studies. Athersley South was awarded data logging equipment by CREATE and Lord William's received a photovoltaic array, supplied by Solar Century. This equipment will be used to support future energy work at the schools.

(activity round up)

Fast Track Performance

'Solar Flare' takes to the track for judging in the best body design category at the final of the Hampshire Solar Car Challenge



478 children from 48 schools in 8 local authority areas took part in the Hampshire Solar Car Challenge. A total of 703 people attended the regional heats and final event, which secured 25 articles in local press plus T.V. and radio coverage. Such is the attraction of solar power for teaching about design and technology! The youngsters designed and built solar powered model cars to race against each other to win a place in the final, which was held at Thruxton Race Circuit in July.

Participating schools were given two basic 'kits', both consisting of a body template, solar cell, a motor, gearing and wheels, by their local authority. Most schools held after school workshops to prepare for the challenge and build the cars.

The project was aimed at Key stage 2 children and teachers have stated that, by participating, the children have learnt about:

- Solar and renewable energy and sustainability
- Team working and co-operation
- Design skills, including interpreting a brief
- Construction, testing and redesigning process
- Problem solving
- Sportsmanship and social skills
- How to read, interpret and follow instructions
- The need for precision
- Measuring speed by distance and time
- Perseverance and dedication
- Working to a deadline
- Accountability to judges

The challenge was divided into two sections, one for speed and the other for body design. David Garlovsky from Plugging into the Sun, George Willet from the Campaign to Promote Engineering and Tom Jones, the Thruxton Circuit Manager judged the best body design. As the spectacular inventions paraded down the track, the judges agonised over their decision. Eventually they declared 'Bluebird' from Samuel Cody School, Rushmoor Borough Council the winner and awarded Highly Commended to the runner up, Solar Flare from Pennington Junior School, New Forest District Council. The final race was subject to a steward's enquiry, which resulted in a re-run, and at the end of a nail biting event Freegrounds School, Eastleigh Borough Council won in a blistering 27.6 seconds!

For advice on setting up a solar car challenge contact David Garlovsky on telephone: 0114 249 9459 email: david@pluggingintothesun.org.uk

Southwark Solar Schools

Crampton Primary School can literally shout from its rooftops about the sun's power, thanks to the Southwark Solar School's project. The school is using both types of solar technology: solar water heating panels to heat the water in the swimming pool and photovoltaic panels, which turn sunlight into electricity to help run lights and electrical appliances.

A meter in the playground corridor shows the children how much electricity is being produced by the sun at any time, and they can relate this to weather conditions outside. Staff, pupils and friends of the school all have the opportunity to learn first hand about renewable energy through talks, slide shows and curriculum activities.

Two more schools in the Elephant and Castle regeneration area, St. John's CE Walworth Primary and Notre Dame RC Secondary, have had solar systems installed by Sundog Energy Ltd., through the Southwark Solar Schools project. This project is supported by the Elephant Links SRB programme, London Electricity's green fund and delivered by Sustainable Energy Action (SEA).

Angela Nauck, Sustainable Energy Action, Adam Thompson London Electricity's Green Tariff Fund Manager and Graham Bugler, Project Officer, Elephant Link Regeneration Partnership on the solar rooftop at Crampton Primary School, London.



All three schools participating in the project started by looking at how and where energy was being used, through this audit they established where energy was used inefficiently and even wasted. Each school has developed an energy policy, based on the audit findings and recommendations. This will help to ensure that energy is used wisely, and that where possible energy efficiency improvements are made. Energy use is being monitored to show the savings made from improved energy efficiency. The amount of solar electricity produced annually from the solar panels is also being measured.

For further information about the project please contact Angela Nauck at SEA on 0207 582 9191

Carbon Neutral Challenge

Senior girls at Notting Hill & Ealing High School, London have challenged Ealing Council that the school can reduce its carbon emissions by 10% year on year, beating the government target five fold, and neutralising the school's total carbon emissions in the long term.

Four hundred pupils officially launched the school's environmental change programme at their Environment Day on July 12th. It involved teams calculating the school's 'carbon footprint', a process to measure the environmental impact created by carbon emissions and global warming.

They are now creating a programme of energy reduction and carbon offset.

Katie Surridge, Head Girl says:

"We aim to become the cleanest and greenest school in the borough, create a model that other schools and organisations in the borough and nationally can copy, and to act as a catalyst to put in even more energy and commitment behind the borough's Local Agenda 21 strategy. In the long-term it would be great to make our school the first Carbon Neutral school in the UK and inspire and motivate others to follow suit."

Important changes are already in place. Working with the youth focused environmental charity, Envision, pupils from the school formulated The Mobius Team: ten, sixteen to eighteen year olds who function as environmental champions amongst the schools' pupils and teachers.

The girls campaigned for and successfully introduced Fair Trade coffee, tea and chocolate, a paper-recycling scheme, and composting bins to the school. They have generated greater awareness amongst younger pupils and set in place best

environmental practices for all to follow.

Susan Whitfield, Headmistress says:

"As a biologist, I have always had a deep interest in environmental issues. It gives me much pleasure to see the girls share this commitment, and take it forward in their own way. I believe this next generation can and will make sustainable change happen, and that they recognise the importance of such a change for the future well-being of people all over the world."

On their Environment Day, CREATE assisted some girls and the ICT teacher to undertake a gap analysis of their present energy consumption and plan a long-term and sustainable environmental change programme. There will be many other workshops with an environmentally sustainable theme, linking into the National Curriculum. The day ended with a whole school assembly to share the findings and set plans for future developments.

Climate change business Future Forests, the London Borough of Ealing's Local Agenda 21 team, and Envision, are working to support the school in their endeavour.

For further information about the work of Future Forests, Envision or London Borough of Ealing's Local Agenda 21 process, please log onto:
www.envision.org.uk
www.futureforests.com
www.la21.org

Hampshire Schools Celebrate Savings

Year 5 and 6 children from The Butts and Bishopswood schools, Hampshire demonstrate their enthusiasm for energy efficient lifestyles by building model houses, with loft and roof insulation, thick carpets and curtains. Some even installed solar panels or a wind turbine on the roof. The Butts Primary School, Alton set the stage to inspire other schools to follow their lead on energy saving at school and at home on July 4 2002.

Pupils from The Butts and Bishopswood Junior School, Basingstoke, joined forces to demonstrate how energy projects can help meet curriculum targets, whilst reducing costs, protecting the environment and providing very stimulating learning activities.

Year 5 children, led by teacher, Julie Luke, announced their 'amazing discoveries' made by doing home energy surveys. TVs that NEVER get turned off, lights left on ALL night (and they're not energy saving bulbs!), cloths washed at over 90 degrees, despite the claims of modern laundry products and adverts that 'must have cost Emillions!'

Councillors, Head teachers, governors and other guests at the Hampshire Energy Wise celebration event joined Year 5 and 6 children in several challenges set by CREATE.

Some made impressive models of energy efficient houses, with cavity walls and loft insulation, triple glazing and solar roofs in just over an hour, using boxes, and various materials supplied. Others carried out a survey to discover how energy aware their VIP guests are. Most thought that it was better to leave fluorescent lights on even if the room was empty - FALSE! And nobody knew the letter range on energy labels for fridges - A-G. Proof that many people could improve their energy awareness.

"This is a very worthwhile initiative and I congratulate my colleagues in the local authorities and CREATE for their involvement and support for schools. The enthusiasm of the children working on these energy projects is palpable and the project is helping to give a new generation the skills and knowledge to teach us all a thing or three about being more 'Energy Wise'. Well done!"

George Heller,
Deputy County Education Officer



The Hampshire Energy Wise programme is funded by six local authorities and managed by CREATE. To find out more contact - Ann or Brian Saffery Telephone: 01923 661373 Email: ann@create.org.uk

A New BSc in Renewable Energy

A transformation in higher education is underway in Cornwall: the Government is supporting a £69.4 million project to develop a new University campus at Penryn, just north of Falmouth. Part of this project, which is also supported by the European Social Fund, involves creating a new centre of excellence in environmental science and technology. This centre will build on the expertise of the Camborne School of Mines, pioneers in Geothermal Energy, and will feature a new B.Sc. degree programme in Renewable Energy starting in October 2003.

The BSc in Renewable Energy affords an opportunity for individuals to prepare for a career in the UK's fastest growing business sector. It's a degree that gives you the chance to learn about the technology as it develops, to understand how we can make better use of the energy we have all around us, and to investigate the effect of energy policy on society, the economy and the environment. It is a degree that gives you the chance to become one of tomorrow's decision makers.

The main themes of the new course are:

- The technical aspects of power generation from renewable resources,
- The 'business end' of the discipline, covering economic, business and management aspects.
- The legal and environmental procedures that need to be followed.

The degree has been designed with the help of the Institute of Energy, wind power consultants and the Renewable Energy Office for Cornwall (REOC), a forum for the buoyant Renewable Energy businesses in Cornwall. As a result, the curriculum contains training in the precise subjects that employers seek and will provide a route to becoming a Chartered Engineer, but also provides the ideal platform for a higher degree programme, that is, a PhD or MSc.

Renewable Energy scholarships are available for this course on a competitive basis. Get more details about applying to start in October 2003 from Dean Millar: dmillar@csm.ex.ac.uk or phone 01209 714866. www.ex.ac.uk/csm & www.ex.ac.uk/cuc



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*"Our biggest challenge in this new century
is to take an idea that seems abstract
- sustainable development - and turn it
into a reality for all the world's people"*

Kofi Annan Secretary General to the United Nations

EnergyWatch aims to
Create interest in current events
Empower educators
Engage young citizens
Improve teaching and learning

