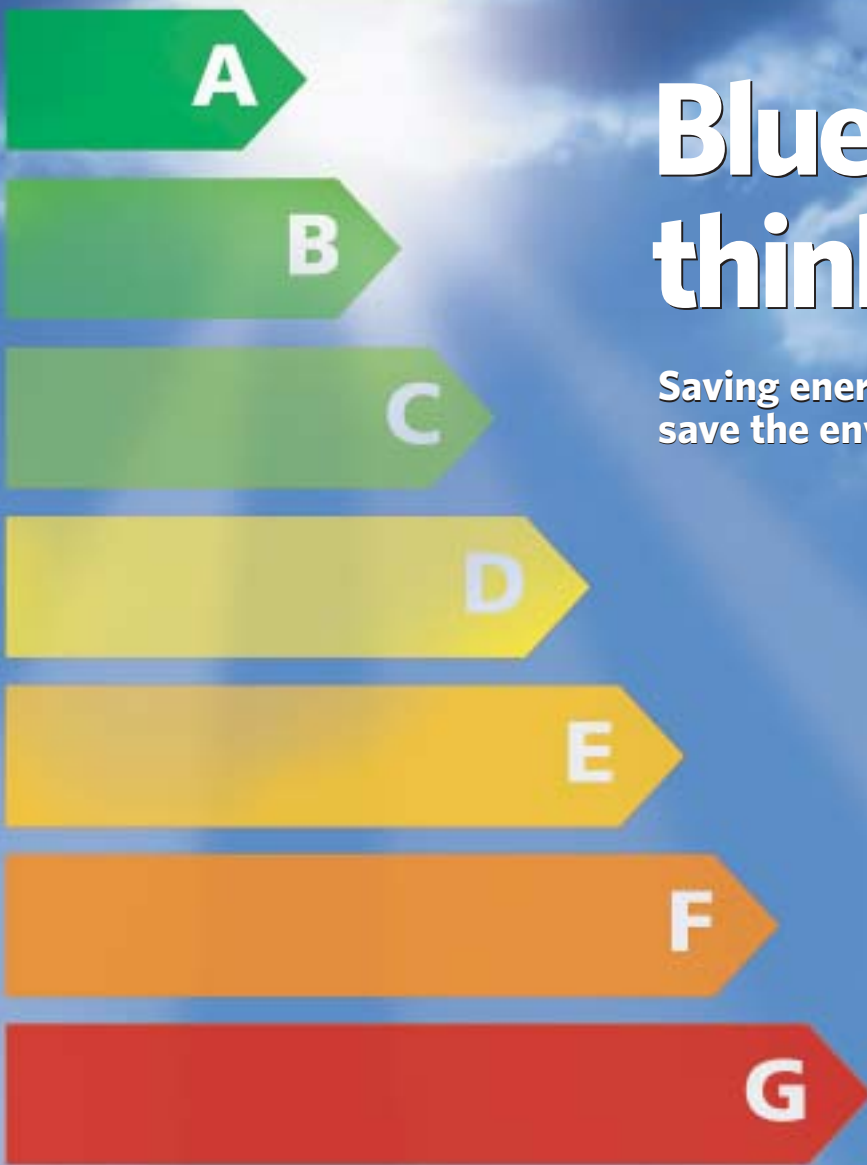


2006

The National Energy Efficiency Awards

Recognising excellence in energy conservation and efficiency



Blue sky thinking

Saving energy in order to save the environment



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SPONSOR'S COMMENT

'The case for reducing CO2 emissions has never been more powerful'

Eva Eisenschimmel,
Chief Operating Officer,
EDF Energy -
Customer Branch

EDF Energy is proud to be sponsoring the first National Energy Efficiency Awards organised by UK CEED. The Awards have been launched to highlight the importance of energy efficiency in combating climate change and seek to increase the take up of energy efficiency measures amongst consumers, business and Government.

EDF Energy's commitment to the environment is not limited to the major events we sponsor. EDF Energy has an important role to play in helping customers become more energy aware and efficient in providing product options that assist them in reducing their carbon footprint. Offsetting is one of three key approaches EDF Energy is taking to reduce the effects of climate change, along with reducing energy consumption and investing in low carbon, or carbon free, technologies.

We have just launched a new initiative, called Climate Balance, to help EDF Energy customers reduce the impact of CO2 emissions associated with the gas and electricity they use in their homes. For every tonne of CO2 produced by customers



signing up to this initiative, EDF Energy will invest in a wide range of sustainable projects around the world to help reduce CO2 emissions by a tonne*. This new initiative is available to business and residential customers.

The case for reducing CO2 emissions has never been more powerful. EDF Energy has invested £97m since 1994 in energy efficiency measures and continuously provides advice to customers on how to make their work places and homes more energy efficient. EDF Energy also has a number of schemes dedicated to tackling fuel poverty and to caring for its more vulnerable customers. We have abolished the surcharge for electricity pre-payment meter customers, established the EDF Energy Trust, which has awarded more than 1,000 grants, and over the

next three years EDF Energy will spend £25m a year on energy-efficiency improvements for priority customers.

Last year saw the launch of an innovative product - Read, Reduce, Reward - a scheme that rewards customers for reducing their energy consumption and has already attracted 175,000 customers. This, combined with investment in renewable projects within the UK has helped mark EDF Energy out as being one of the leading energy companies that is committed to tackling climate change.

For more information on any of these initiatives, please call 0800 096 0029**.

We are delighted that the very high standard of entrants has made this inaugural event a significant success.

*CO2 emissions will be balanced through funded projects on an aggregate basis for all Climate Balance customers. EDF Energy will invest in projects designed to balance the CO2 emissions associated with each kwh of gas and electricity supplied to Climate Balance customers based on the following conversion factors: 0.527kg per kwh of electricity supplied and 0.19kg per kwh of gas supplied. The required level of CO2 reductions will be achieved over the lifetime of these projects, which differ from project to project.

**Calls may be monitored or recorded as part of our customer care programme.

DEFRA'S COMMENT

'The awards are a chance to recognise innovation and best practice'

Ian Pearson MP, Minister for Climate Change and the Environment

Energy efficiency is a win-win both in tackling climate change and reducing energy costs, yet all too often these opportunities are missed. The UK CEED Energy Efficiency Awards are a welcome chance to recognise innovation and best practice in energy efficiency. We want to reward those who are leading and then to use their example to influence and encourage others to follow.

The science is now overwhelming that climate change is serious and



demands an urgent response. The Stern Review on the Economics of Climate Change, and the Government's Energy Review have reinforced the central role energy efficiency must play in that response. As a Government, we are supporting the work of the

Carbon Trust and the Energy Saving Trust, and have set a strong policy framework with a focus on energy efficiency, as well as setting challenging targets for our own estate.

But improving energy efficiency across the economy is something that needs all of us - Government, business, the wider public sector and consumers alike - to change the way we behave and the choices we make. Those who have been highlighted in the awards are to be congratulated, they have done terrifically well in leading the way. I look forward to the day when examples like these are the norm, not the exception.

SME CATEGORY WINNER MANCHESTER RUSK CO LTD



Winning dynasty's emissions hat-trick

Purpose-built premises and energy-efficient machinery have helped reduce landfill, waste and utility costs

Just outside the premises of Manchester Rusk's food processing plant in north-west England, a new landscaped pond and nature area is beginning to take shape. But this is no ordinary garden.

The pond has been developed from an old food packaging machine that couldn't be recycled. In keeping with the company's great strides to reduce waste and energy consumption, Manchester Rusk (MRC) submerged the machine in the ground, converting it into a pond.

"We are delighted with our achievements to date, which we hope demonstrate our commitment to reducing our impact on the environment," says Dave Wheeler, MRC production manager and one of the main driving forces behind the food manufacturing and packaging company's environmental innovations over the past four years.

The 30-year-old business was set up and is still owned by the Dixon family. The family is no stranger to success - chairman Roy Dixon's son (and brother of Gary Dixon, managing director) is ex-Arsenal footballer, Lee Dixon.

Historically, growth was steady. However, it has picked up in the last five years, with increased output and reduced costs through new energy-efficient machinery and a new, purpose-built factory with energy conserving designs. These include insulated ceilings, energy management systems and low-energy but high lux output lighting.

"The aims of the energy efficiency project were quite simple: reduce the amount of waste we were sending to landfill by a

significant amount, and to reduce our costs on waste handling and utilities," says Wheeler.

Over the past year, MRC has reduced the amount of waste it sends to landfill sites by over 90 per cent. The number of waste collection vehicles coming to and from the site has consequently been cut by 75 per cent, saving the company more than £10,000 per year, with the initial investment recouped in 10 months.

The company has also maximised its water usage efficiency by installing a meter to control the amount of water used.

Through the innovations, MRC has increased its output. One new more efficient packing line alone has increased productivity by 200 per cent. Moreover, it has offset rising energy prices with investments in new technologies that the company says have a remarkably low payback time.

Funding such innovations is a key concern for most organisations, cost-conscious SMEs in particular. Wheeler says that advice from organisations such as the environmental regeneration charity Groundwork has helped MRC to make full use of the environmental grants and technical assistance available to companies across the UK.

Wheeler is keen to emphasise that although the company's main objective is to maximise profits, the knowledge that MRC

is helping reduce harmful emissions has changed everyone at the company.

"To know we are doing our very best to reduce our impact is something all our employees are proud of. It has created a great sense of achievement throughout the company," says Wheeler.

The changes are visible. From new energy-efficient lighting and production machines, to self-timers on coffee machines and heating units.

"You can't help but notice how the company has tried to reduce its impact on the environment," says James Nessfield, a production supervisor who has been with MRC for more than 15 years.

"It is something which just about everyone has been involved with, so we all feel that we are achieving something," he says.

Dominic Wood from Groundwork says that MRC is symptomatic of a real change in the attitude towards environmentally-friendly business practices. Four years ago, he says he could hardly get an appointment to explain what was on offer.

"But with the onset of corporate responsibility and greener supply chains, smaller companies too have realised that good environmental practice can be of benefit to any organisation, in any sector," says Wood.

www.mrcflava.co.uk/

SME CATEGORY FINALISTS

Manchester Rusk Co Ltd (winner)
Highland Galvanisers
Superglass

LARGE BUSINESS CATEGORY WINNER & NATIONAL CHAMPION BSKYB

Tuned in to the bigger picture

The first media company to announce that it has gone carbon neutral is also playing a leading role in raising awareness of climate change

The efforts of satellite broadcaster BSKyB to reduce its energy consumption and become more environmentally efficient in general were enough to convince the judges that it was a worthy winner not only of the Large Business category, but also merited National Champion status for the 2006 National Energy Efficiency Awards.

In June this year, BSKyB became the world's first media company to announce that it is carbon neutral. With more than 10,000 employees and a direct connection into over eight million British households, that in itself is an impressive feat. But not only has the company made undeniable strides in reducing its energy consumption and CO2 emissions; perhaps its biggest success has been the way it has radically raised awareness of the issue of climate change and energy conservation among its employees, other businesses it works with, and the wider public.

"Our approach has been to lead by taking many steps, both big and small, so that people will aspire to take action and feel that they are part of a forward-thinking company," says James Murdoch, BSKyB's chief executive officer.

The company announced its intentions in May to go carbon neutral in its so-called Bigger Picture initiative. At the same time, it launched its intranet site, jointhebiggerpicture.com, with the aim of educating and engaging its employees with the environmental agenda. The innovative website is full of information and ideas on reducing CO2 emission at home and at work and has proven a huge success, says Fiona Ball, BSKyB's head of environment.

"As an entertainment brand with direct reach into our customers' living rooms, we've always believed that business is a catalyst for change. The Bigger Picture is about sharing ideas to tackle climate change together, by providing tips, information and incentives to make it easier, and inspiring everyone to join in," she says.

The website has really helped to spread the energy conservation message throughout the company. Over 1,200 employees



signed up to it on the first day, says Ball.

One innovative idea on the site is the opportunity for employees to win "Carbon Credits". The credits are part of an employee reward scheme, with staff earning credits for various activities, such as submitting ideas on ways BSKyB can improve its environmental performance, or taking part in initiatives to help reduce energy

consumption. Each credit is an entry into a prize draw.

"It requires individual action to make a difference to climate change. We want to inform, educate and enable individuals to understand what they can do to help address this global issue. And because it brings us closer to our current and future customers, we see this initiative as a genuine, sound investment in the future of the business," says Ball.

The entertainment giant is not just preaching change, it is acting on it, too. For example, it has installed oil-less chillers in studio buildings and the company's main call centres. The "chilled beam technology" air conditioning systems have cut energy consumption by up to 50 per cent, giving annual savings of some £280,000. Other initiatives include presence detectors and self-timers for lights and other electronic equipment and simple campaigns to encourage staff to turn off PCs, TVs and lights.

The company now purchases all of its energy from renewable sources and it has voluntarily purchased carbon credits in two renewable energy offset projects in New Zealand and Bulgaria to offset its CO2 emissions and reduce its carbon footprint. It is also the only media company to have signed up to the voluntary EU Code of Conduct on Energy Efficiency in Digital TV Service Systems.

The fundamental objective of the Bigger Picture project is to make a difference on climate change. Internally, the company has already scored some great victories in reducing its emissions and energy consumption. Now, the focus has shifted outwards as well, to customers and other stakeholders. Through the introduction of new technologies, for example, BSKyB has reduced the power consumption of its set-top boxes by 50 per cent since their launch. It has begun evaluating and monitoring the environmental performance of its suppliers and encouraging them, where appropriate, to improve their energy efficiency. And it is pursuing the same objectives in terms of its subscribers, helping to inform and advise them on the risks of climate change and actions to help reduce those risks.

"We want to help families find victories in how they use energy; nearly one in three families are now choosing Sky and we'd like them to feel that even small actions, multiplied many times, add up," says James Murdoch.

"As well as everyone at Sky, I hope that our customers will also feel inspired and empowered to take action."

www.jointhebiggerpicture.com

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CARBON DISCLOSURE PROJECT

COMMENDED NORWICH & PETERBOROUGH



Norwich & Peterborough Building Society is the first company to be accredited with the Peterborough Environment City Trust (PECT) Business Environmental Management Scheme.

Over the past five years, it has developed a formal environmental scheme which sets, monitors and manages environmental targets throughout the business and across all Norwich & Peterborough branches.

The aim of the scheme is to reduce energy usage and therefore costs, and to minimise wastage, saving the company around £20,000 per year.

An internal campaign was launched to raise staff awareness of energy efficiency. It includes a competition whereby the branch that saves the most energy is given a financial reward.

External organisations, such as the Environment Agency, are brought in to raise awareness among employees. All lighting controls have also been upgraded to more efficient models.

Gas controls have also been upgraded and, along

with water, usage targets have been set for each branch. Unexpected readings are investigated immediately to find the cause of the anomaly. The energy efficiency targets are set at the beginning of the year. They are monitored monthly and reported quarterly. PECT also carry out an audit.

Staff are encouraged to minimise waste, reducing usage where possible and recycling where not. Desk bins are being replaced by small pots on the desk in order to prompt staff to think more about the waste they generate, and reduce it accordingly. All the company's fluorescent lighting tubes, paper and toner cartridges are now recycled, too.

A travel plan has been introduced. Staff are encouraged to car share or use public transport in an effort to reduce commuter traffic and business mileage. Showers and a bicycle shelter have been installed at the company's headquarters in order to encourage staff to cycle to work.

www.npbs.co.uk/

LARGE BUSINESS CATEGORY FINALISTS

- BSkyB (winner)
- Norwich & Peterborough Building Society (commended)
- GlaxoSmithKline
- Rolls Royce
- J Sainsbury's

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PRODUCTS AND SERVICES CATEGORY, SERVICES WINNER SOUTHAMPTON GEOTHERMAL HEATING CO (UTILICOM LTD)

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water energy
& environment

Giant central heating system is hot favourite

A combined heat and power plant on the south coast offers energy efficiencies in the region of 85 per cent

The UK's biggest community heating scheme is helping Southampton City Council to meet new targets for cutting greenhouse gases - and saving money for its customers too.

Southampton District Energy Scheme is an integrated energy scheme using geothermal energy and combined heat and power to provide electrical power, hot water for heating and chilled water for air conditioning.

The scheme has been developed over a 20 year period. It now has over 40 large commercial clients and in excess of 1,400 domestic customers. It has 11 kilometres of mains and saves over 11,000 tonnes of carbon each year.

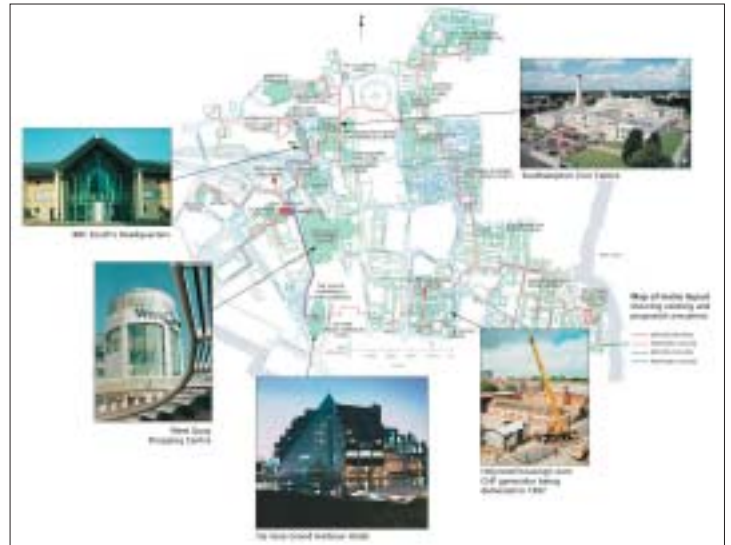
A geothermal well, dug in the Eighties, originally formed the basis of the scheme, but this is now secondary to the combined heat and power plant, which offers efficiencies in the region of 85 per cent, compared to 35 per cent for a conventional power plant.

Plans are now being drawn up to extend the scheme which is a partnership between private company, Utilicom, and the city council, and a new 25-year agreement has just been signed.

Mike Smith, commercial director of Utilicom, which has invested £7m in the project, says, "Currently, clients include WestQuay Shopping Centre which uses it for electrical power, hot water and chilled power. We also serve a range of

other buildings including a hospital, hotels and office buildings, as well as homes."

The scheme, which resembles a giant central heating system, won the Queen's Award for Sustainable Development in 2001 and serves properties within a three mile radius of the main heat station.



The scheme's performance to date is impressive, with annual savings to its customers totalling around £300,000.

"It allows householders to buy cheaper fuel," says Smith, "In addition to the lower running costs, a major plus for large retail customers, such as Asda, is that it takes up so little space.

"Basically, all that is needed is a cupboard to house the pipes coming in and extras such as shut-off valves. We estimate capital savings by clients to date in excess of £500,000."

The carbon saving provided by the project is making a major contribution to Southampton's greenhouse gas targets. It provides an excellent model for local authorities throughout the UK to both reduce pollution and pass on savings to businesses and householders.

"It's environmentally friendly and that is becoming increasingly important to large organisations which recognise their corporate and social responsibilities and want to demonstrate they are doing the right thing," says Smith.

The scheme also offers greater energy efficiency than conventional systems, as well as exceptional reliability, and can be installed in both new and older buildings.

"We have done a lot of retrofitting in older buildings. Southampton Civic Centre was one of the first to be linked to the scheme and that was built more than 70 years ago," he says.

He says the Southampton partnership is now looking to move away from gas and investigating alternatives such as biomass, solar and wind power. "At the moment we are trialling a project using waste cooking oil via a small plant to see how it goes," says Smith.

www.utilicom.co.uk

PRODUCTS AND SERVICES FINALISTS

Utilicom (winner - services)
Conditionaire (winner - products)
AK Industries Ltd
Lobo International Ltd
National Grid plc
Phoenix Product Development Ltd
Scottish Southern Energy

PRODUCTS AND SERVICES CATEGORY, PRODUCTS WINNER AIRCON ENERGY SAVER (CONDITIONAIRE LTD)

The answer is blowing in the wind

Conditionaire's ingenious air conditioning device that saves electricity and reduces carbon emissions is building a fast-growing customer base around the world.

The Kent-based firm's Aircon Energy Saver (AES) achieves typical energy savings of around 30 per cent on air conditioning and has a pay-back period of less than a year.

The device, which incorporates special software within a small plastic case, can be fitted to an existing air conditioning unit within minutes and leads to immediate energy savings.

Colonel Peter Williams, Conditionaire chairman, says the product does not need a "hard sell" once its benefits are outlined to potential customers.

"We tell them that in effect, their electricity company is

Air conditioning can account for half of a building's electrical use but a new device offers sizeable savings

buying them a present, if unwittingly - and once they realise the potential savings they are happy to go ahead," he says.

"It offers sizeable savings, especially when you bear in mind that air conditioning accounts for anywhere from a quarter to half of the total electrical consumption in many buildings."

The AES is suitable for both commercial and residential air conditioning systems and effectively limits temperature change in a room to one degree rather than the usual three degrees.

"This saves energy and reduces carbon emissions, but it also improves room comfort," says Williams. "By reducing the load

on the compressor or chiller unit it also extends the life of the unit."

The device is self-adjusting and Williams estimates that customers to date have saved around 35 million kwh in total - worth at least £3m.

It is also a one-off purchase. If an air conditioning system is changed, the device can be removed and fitted to a new unit. Williams says the product does much to avoid "sick building syndrome" as a result of not extracting so much moisture from the air in an enclosed space.

"A typical air conditioning system operates continuously until the room thermostat is satisfied. During this time, it will run

the compressor and produce greater cooling capacity than the air can absorb - and that wastes energy," he says.

Although the company advertises savings of 30 per cent, this is an average figure. Some customers, particularly supermarkets and fast food outlets, achieve much better results with figures ranging from 45 per cent to 60 per cent.

Since air conditioning has a much lower priority in the home market due to lower temperatures, the main markets for the device are Asia, the USA and Australia. However, it has been installed by a major UK bank and a fast food chain.

Conditionaire, which employs four people in the UK, has now set up an office in Hong Kong with a staff of six to capitalise on the market in the Far East and is appointing distributors in other parts of the world.

The device, developed in the UK over a 10-year period, is now spawning a range of other products using similar technology.

There are plans to market a device for refrigerated trucks which could lead to fuel savings of up to 40 per cent; and within the next few months, the company will be selling a product designed for air conditioned buses and coaches.

"We estimate that buses and coaches could achieve diesel savings of between 20 to 30 per cent by using the same model," says Williams.

www.conditionaire.org.uk



CONSTRUCTION AND RENOVATION, RESIDENTIAL WINNER HOCKERTON HOUSING PROJECT

Housing project gives power to the people

A Nottingham-based, self-sufficient eco-community is helping change opinions about renewable energy and protecting the environment

Nick White, a Nottingham father, has never looked back since he quit the rat race to live a new, greener lifestyle with his family. The Whites are one of five households in Hockerton Housing Project (HHP), an eco-community which grows much of its own food, generates its own power and enjoys massive energy savings.

White, who gave up a well-paid job in the pharmaceuticals industry to join HHP, says he has no regrets.

"A lot of people have totally the wrong idea about us. We aren't a commune. We live normal family lives as part of a community of good neighbours," he says.

And White dispels the myth that living in tune with the environment means hardship and going without. They haven't sacrificed comfort or modern amenities – so teenagers can still have their mobile phones and enjoy their stereo at full blast.

HHP is the UK's first earth-sheltered, self-sufficient ecological housing development and is helping to educate people about energy saving and protecting the environment.

The low energy homes are complemented by a range of environmental and energy saving policies and although they don't have conventional heating, White says they are still warmer than the average semi-detached.

"In winter, we sometimes visit relations and find their homes

too cold, even though they have central heating," he said.

The homes use an average of 3,400 kwh per year – between 75 and 85 per cent less than average, with most of the power supplied by a photo-voltaic system and two wind turbines.

Build costs were similar to a traditional house, since the costs of extra insulation and glazing materials were offset by the savings in the heating system.

Over the past few years, the project has helped to spread the word that sustainable living is within everyone's reach. To date, more than 10,000 people have visited to see it for themselves.

The families have their own water collecting system and environmentally friendly sewage system – and their lifestyle

produces other eco-benefits, such as the reduction in waste from food packaging.

In most cases, one partner goes out to work while the other works at the project, where jobs include tending the gardens, caring for the animals, organising tours and workshops and promoting the sustainable way of life.

"It isn't about living a poorer quality of life – far from it," explains White. "I used to spend hours driving to and from work and had little time with my young family."

For most of the families, their income is around 50 per cent lower than it was before they joined the project, but it is balanced by the very small mortgage and the fact that they no longer need to pay for childcare.

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There are also major savings on utilities and the weekly food bill. But the biggest compensation is infinitely more valuable – a better, healthier lifestyle.

HHP has also helped to change local opinions about renewable energy. Initially, there was fierce local opposition to its plan for a wind turbine, but the addition of a second turbine raised no objections. In fact, members are

now in discussions with local people about a renewables project to serve the nearby village, with savings used to fund other energy schemes and community projects. They are also involved in a proposed 11-home eco-development nearby to provide affordable rural housing.

www.hockertonhousingproject.org.uk

CONSTRUCTION AND RENOVATION, COMMERCIAL WINNER ENVIRONMENT AGENCY - RED KITE HOUSE



Fresh air not hot air is the key to success

Staff were consulted before an award-winning building was developed

Given that its remit is to persuade the rest of us to save energy and protect the environment, it is only fitting that the Environment Agency should practise what it preaches. And it has struck gold (or should that be green) with its award-winning office development in Wallingford, Oxfordshire.

Red Kite House, home to the agency's Thames Region West Area office, is a striking building with a curved shape, designed to capture the wind and maximise airflow.

It uses natural ventilation rather than air conditioning and its rainwater collection system harvests enough water to satisfy 40 per cent of the building's need – with any excess directed to a nearby pond.

The building uses photo-voltaic cells to generate 23,000 kwh of power per year and solar hot water panels on the roof supplement its water heating.

But although it ticks all the boxes as far as energy saving is concerned, what is it actually like to work in?

According to Brian Hughes, the Environment Agency's project manager for the development, it is proving an extremely popular working environment for its 250 staff.

He says: "Staff moved in last year and this summer was a good test for the natural ventilation. We had days where the outside temperature was 35 degrees. Although the inside of the building was hotter than you'd get in an air conditioned building, we always had air flowing through, so it was still a comfortable place to work."

Hughes says staff were consulted at every stage of planning and development and natural ventilation topped the wish list. "People told us that they wanted fresh air and windows that they could open so that became one of the main design features."

The building's high concrete ceilings act as heat sinks during the day and at night they are cooled by high-level windows that open and close automatically.

Thanks to its energy generation and energy saving devices, the building uses about half the energy consumed by an air-conditioned office, reducing carbon emissions by more than 17 tonnes per year. In total, it saves around 33,500 kwh per year on power from the national grid and its rainwater system reduces the mains water needed by around 240,000 litres.

"We harvest enough rainwater per year to fill an Olympic-sized swimming pool and that is used for all our toilet flushing," said Hughes.

Prior to the opening of Red Kite House, staff were spread between eight different buildings which were inefficient in their use of water and energy – and it also hampered good team working.

The new building offers flexible space with a high degree of open plan working and desk sharing. This allows it to occupy a smaller building which provides savings of around £200,000 per year. Staff have access to pool bikes and a car sharing system has also been set up.

"We wanted people to feel that they could move around during the day so we have also incorporated a range of tables, break-out areas and offices where they can work," says Hughes.

The project gives high priority to environmental issues, right down to a drainage system that doesn't encourage flooding downstream. Such is its success that the building is being used to show planners and developers that sustainable construction can work.

www.environment-agency.gov.uk/regions/thames/323147/1205605/

CONSTRUCTION & RENOVATION FINALISTS

Hockerton Housing Project (winner – residential)
Environment Agency (winner – commercial)
Beaumont Primary Change Works
East Riding District Council
Gallions Housing Association
Rhonda Cynon Taff Council
Swan Housing Group

EDUCATION AND AWARENESS RAISING CATEGORY WINNER BEAUMONT PRIMARY

Environment ambassadors

Pupils at Beaumont Primary School are fascinated with how their eco-friendly wooden building works

One day in the hopefully not too distant future, all schools will be like Beaumont Community Primary School in Suffolk. Opened in 2003, the school is a model of sustainability. It houses 165 pupils, including an integral nursery, in an eco-friendly building that is bursting with environmental and energy saving innovations.

It is built from wood and clad in untreated western cedar, chosen because of its natural resistance to rot and insect attack. Insulation in the roof and the walls – above the minimum standards – is provided by recycled newspaper.

Part of the building is covered with a sedum or living roof of plants. It requires very little maintenance and helps keep the building cool in summer and warmer in winter. It provides a rich habitat for birds, butterflies and other insects; and also helps improve air quality, as it consumes carbon dioxide.

A rainwater recovery system collects and filters water, which is then used to flush the toilets.

Perhaps the most innovative aspect of the school, though, is its energy efficiency. A wind turbine next to the school field, part funded by the Government's Clear Skies initiative and Suffolk County Council, generates up to 6kw of electricity – enough, on an average day, to run all the computers in the ICT suite.

A further 1kw of electricity is produced by solar panels on a specially sloped part of the roof, which produce enough power to run the lights in two classrooms.

When more electricity is generated than the school needs,

the surplus is used to heat large water tanks in the boiler room which feed the underfloor heating system. Any excess is sold back to the national grid.

In all, the school's energy efficiency measures reduce its CO2 emissions by around eight tonnes per year compared to a conventional school of the same size.

The real success of Beaumont Primary, though, is not just as a practical example of how to use sustainable technologies, but as a source of inspiration to others; not least, to its own pupils.

The school makes environmental issues a part of daily life. The children are fascinated by how their building works. They check the touch-screen computer in the entrance hall to see how much power the turbine is producing; they pick up litter and remind teachers to switch off lights.

"This is how schools should be," says Stella Burton, the headmistress. "The pupils have an enthusiasm for energy efficiency and sustainability. When they are adults, they'll be able to use the knowledge they've gained here in a positive way."

FINALISTS

- Beaumont Primary (winner)
- Islington Borough Council (commended)
- Ardroy Outdoor Centre
- Durham City Council
- Enworks
- Groundwork Leicester, and Leicestershire
- HSBC
- Mid Wales Energy Agency
- Sustrans



EDUCATION, COMMENDED ISLINGTON BOROUGH COUNCIL

Islington Borough Council has an innovative way of inspiring staff to conserve energy. It has established a green champions network, the Green Liaison Officers (GLOs), to promote energy efficiency.

The GLOs ran their first campaign, Switch It Off, from July to September. It had three main objectives. First, to increase understanding of the link between energy consumption and climate change. Second, to reduce energy consumption; and third, to help embed sustainable energy practice across the council.

Weekly metre readings were taken throughout the campaign. These showed a cumulative saving of 47,771 kwh - equivalent to £2,770.

"There has been a vast improvement in the number of people who not only switch off equipment at the end of the day, but in the general attitude towards energy consumption," says Miranda Pennington of the sustainability unit at Islington Borough Council.

www.islington.gov.uk/environment



COMMUNITY AND VOLUNTARY ACTION WINNER CRAIGNISH VILLAGE HALL

Green key to Loch-side hall

Environmental concerns played a vital part in the construction of a new community centre

Craignish, on the shores of Loch Craignish on western coast of Scotland, has long been known as an area of outstanding natural beauty. Now, its new village hall is being heralded as an example of outstanding sustainable construction and community spirit.

The original village hall was built in 1950 as a temporary building. By 1997 it had deteriorated so much that the community took the decision to knock it down and build a new one.

"Although we identified the need for a new hall in 1997 and carried out a feasibility study, it was not until 2002 that fundraising began in earnest. This was largely due to the fact that the committee underestimated the amount of time needed," explains Jan Brown, honorary secretary of Craignish Village Hall.



From the outset, a key part of the project was the environmental aspect. As an area of outstanding natural beauty, the community wanted a facility which had as little adverse effect on the environment as possible.

After several years of fundraising, work began in early 2005. The architect was commissioned to design a building which blended into the surrounding landscape and incorporated the latest energy efficient technology.

It was not a smooth process, however. Initially it was proposed to have a conventional septic

tank and heating supplied by a woodchip boiler. But the collapse of the company supplying the woodchips forced a major rethink. In addition, there were concerns that discharge from the septic tank would have a detrimental impact on the Loch. Instead, the community applied for funding for a more environmentally friendly Klargester waste water system and a solar panel-driven heating system. The funding application was successful, although the solar panel idea was later dropped in favour of extra insulation.

Part way through construction, it was discovered that by installing a ground source heat pump, the amount of electricity consumed would be greatly reduced. A second successful funding bid made this a viable option.

Low energy light bulbs have been used wherever practical and the whole building is double glazed. There is extra insulation above the recommended minimum standard and local materials have been used where pos-

sible. All cleaning products used in the hall are biodegradable.

The new village hall opened in November 2005. As well as being an energy efficient community venue in tune with its surroundings, the facilities that the hall provides have already seen a substantial reduction in car journeys, as villagers no longer have to travel to other towns to participate in activities such as theatre productions or other social events.

"The local community feels strongly that Craignish should remain as unspoilt as possible. By building a hall which blends into the surrounding landscape, is as energy efficient as possible and which can be used for a wide range of activities, the community has maintained its principles and gained a valuable asset," says Brown.

FINALISTS

- Craignish Village Hall (winner)
- Wiltshire Wildlife Trust (commended)
- Groundwork Leicester
- National Trust Greenways
- National Energy Action

www.craignishvillagehall.org.uk

COMMENDED WILTSHIRE WILDLIFE TRUST

The Climate Friendly Communities project run by Wiltshire Wildlife Trust (WWT) aims to reduce greenhouse gas emissions by 20 per cent.

Using volunteers, groups and other partners, the project works with communities, providing advice, support and awareness on issues such as resource efficiency. It also provides best practice examples of actions that have long-term benefits for the environment and communities.

www.wiltshirewildlife.org



PUBLIC SECTOR WINNER BALLYMENA BOROUGH COUNCIL

Council policy helps generate UK interest

Ballymena Borough Council's energy-saving projects provide a lesson for other local authorities

Ballymena Borough Council, in County Antrim, is a lesson in how local authorities can lead the way to greater energy efficiency. Since 2004, the council, driven by Dr Heather Thompson, its first energy and environmental management systems officer, has implemented projects that have dramatically reduced the energy consumption and CO2 emissions of the council, and prompted members of the local community and other local authorities across the UK to follow suit.

"The success of the project has produced many long-term benefits," says Thompson. "If the UK is to achieve its aims of substantial energy and emissions reductions, the roles of communities and individuals will be a key factor, and local authorities have the potential to play a key role in encouraging sustainable energy use."

Ballymena Council's energy savings initiatives have cut overall energy consumption across council sites by 11 per cent compared to pre-2004 levels, with savings projected to be 18 per cent by April 2007. The reduction in energy consumption has saved the council almost £180,000, and grant funding of £250,000 has allowed the installation of major new plants to help bring down energy expenditure further.

By switching almost entirely to green energy supplies and reducing energy and oil consumption, CO2 emissions have also been reduced by 33.8 per cent, from 2,697 tonnes in 2003/4, to 1,785 tonnes in 2005/6.

The energy efficiency drive began in the summer of 2004. Rapidly rising energy prices and 10 per cent annual increases in energy consumption across the council's activities were having a substantial impact on annual expenditure. Thompson, a

well-respected energy specialist, was given the task of implementing an energy conservation programme that would save at least the equivalent of the programme's costs each year.

"In the first year, this was achieved within three months. To date, the rate of return is running at a ratio of 10 to one," she says. "With new technologies being introduced into council sites in 2007, this rate of annual return will reach 30 to one."

The focus of the energy savings project has been to reduce consumption and emissions across the council's sites and buildings. Key innovations include the installation of renewable energy generators. There are now biomass, solar thermal and photovoltaic, wind and ground source technologies installed in council buildings. It also has a major project currently in development to establish a 1mw landfill gas generating facility, which will not only reduce landfill emissions of methane, a potent factor in climate change, but will also bring in additional revenue through electricity generation and Renewable Obligation Certificates (ROCs). Furthermore, a new £17-million civic centre will be fitted with 20kw solar thermal and 50kw geothermal generators, slashing fossil fuel demands by 133mwh annually.

Despite the relatively low awareness levels of the availability and benefits of modern energy saving technologies, Thompson said it wasn't hard to convince individual managers of council sites to cooperate with the initiatives.

"If you can go to the manager of a facility and say that you can save them 10-20 per cent in their energy costs, that's a pretty good incentive for them to cooperate with you," she says.

Stephen Holgate, the leisure services manager for the Seven Towers Leisure Centre, says

that the energy initiatives have been enthusiastically welcomed across the board since Thompson and her team began their initiatives in 2004.

"I've seen excellent results from the energy management programme, ranging from facilities management measures to major projects, all of which have significantly reduced the energy consumption of the leisure centre," says Holgate.

"The programme has also provided energy training that benefits our organisation and our staff. By adopting simple energy saving practices in the workplace, individuals start to apply them in the home as second nature, and when adults introduce them into their everyday lives, children will learn by example."

One of the project's major successes has also been its influence on wider energy consumption practices, not just within council sites and its local environs, but also for other local authorities across Northern Ireland.

"The Northern Ireland Local Government Association and the Northern Ireland Councils now recognise that a good energy management programme should be able to generate substantial benefits for their organisation in a short space of time. There is now an excellent opportunity to replicate the programme across local government," says Thompson.

In addition, Ballymena Borough Council has helped to set up the NI Community Energy (NICE) project which brings participating councils together to exchange information on energy efficiency issues such as grant-funding, fuel poverty resolution and carbon-reduction measures in local communities.

"Probably the biggest challenge to energy management in any organisation – and at home – is changing people's attitudes to their use of energy," says Thompson. "I hope our success will encourage other local authorities to see energy management as a means not only to improve their own energy performance but also as providing opportunities for facilitating community action on energy issues."

www.ballymena.gov.uk



PUBLIC SECTOR, COMMENDED UTTLESFORD DISTRICT COUNCIL

Uttlesford District Council (UDC) has pioneered a new planning requirement for improving energy efficiency in existing housing.

Until now, regulations to cut CO2 emissions from housing has focused on new-builds, which only represents 1 per cent of the UK housing stock. UDC's requirement, the first of its kind, is aimed at addressing the other 99 per cent.

Since 1st April 2006, all planning approvals issued by UDC for domestic home extensions, garage conversions and loft conversions now carry a condition requiring that cost effective energy efficiency measures be carried out on the existing house.

Typical measures include cavity wall and loft insulation, boiler and heating control upgrades, draught stripping, hot water cylinder insulation, floor insulation and energy efficient lighting.

At a national level, a similar policy was initially included in Part L1B of new building regulations being brought in by the Office of the Deputy Prime Minister. However, these were dropped from the final version. Unperturbed and recognising that such regulations were essential for reducing CO2 emissions from existing housing stock, UDC



decided to take action at a local level.

A blanket energy efficiency condition is now applied to all domestic extension approvals and the council distributes a guidance document and energy efficiency questionnaire to these householders. Its building surveying team processes the questionnaires, sends reports outlining the necessary measures to the householder, and checks compliance, as they

would with other planning conditions. They also advise householders on any relevant grants that are available for the work required.

UDC forecasts that after five years the policy will have cut CO2 emissions by around 7,200 tonnes and saved residents around £870,000.

<http://www.uttlesford.gov.uk/climate+change+and+energy/en+ergy+efficiency+condition.htm>

PUBLIC SECTOR FINALISTS

Ballymena Borough Council (winner)
Uttlesford District Council (commended)
Cornwall Sustainable Energy Partnership
Hampshire County Council
Suffolk Coastal District Council

RESEARCH AND DEVELOPMENT CATEGORY WINNER SCIONIX

Solvent provides good solution

Ionic liquids offer a high level of corrosion protection but at a much lower cost to business and the environment



Scionix has developed a new type of solvent that is more efficient, recyclable and environmentally-friendly. A joint venture between the University of Leicester and chemicals manufacturer Whyte Chemicals, Scionix's technology stems from ground-breaking research carried out at the university's Green Chemistry Group.

It is based on ionic liquids: non-volatile liquids that offer a clean way to carry out chemical processes, such as the electropolishing of stainless steel.

Electropolishing is a chemical process that protects metals and alloys against corrosion. It is a huge, but also highly-specialised industry, worth as much as US\$25 billion (£13bn) a year globally.

FINALISTS

Scionix (winner)
Pera (commended)
Hetsia Services Ltd

Conventional electropolishing, that is carried out in acid baths, is very inefficient in its energy usage with only 10 to 20 per cent of the energy supplied for the process actually used in electropolishing. Not only is it very inefficient, the acids are very harmful. They are naturally corrosive, dangerous to work with and must be neutralised before they can be disposed of.

The ionic liquids developed by Scionix offer just as high a level of protection for metals and alloys, but they are much more energy efficient. Moreover they are wholly biodegradable, non-toxic, non-flammable and non-corrosive.

In total, Dr Khalid Shukri, director of Scionix, calculates that the new technology could cut energy bills for electropolishers by at least 50 per cent, which for an average sized plant equates to £50,000 per year.

"Not only is there a cost saving in terms of significantly reduced power consumption, but the surface finish achieved on some types of steel with the new

technology is superior to that obtained with conventional technology," he says.

Furthermore, the conventional acid-based system requires that all the used electropolishing liquid is disposed of as chemical waste. In contrast, in the ionic system the liquids are 100 per cent recyclable – a saving of as much as £30,000 per year.

Finally, there is no pre-treatment of metals or alloys needed with the new technology – another cost saving of between £10,000 and £30,000.

Says Shukri, "the current metal polishing industry has not changed since its inception and the basic idea of using acids to polish the surface is still the norm today. This new

technology will completely revolutionise the metal finishing industry. There is a massive need for green technology, especially as environmental legislation is becoming stricter and companies are being forced to look for more sustainable alternatives."

www.scionix.co.uk

R&D CATEGORY, COMMENDED PERA

Everyday, huge amounts of heat energy is wasted in the form of warm water discharge from domestic appliances such as washing machines, dishwashers, shower units, baths and sinks.

At least 90 per cent of the input energy of these appliances goes into heating the water. Energy which is completely wasted when the appliance is turned off and the water discharged.

Pera's solution – called Lowheat – is a low grade heat



exchanger which recovers up to 40 per cent of the heat energy from this wastewater and uses it to supplement domestic boilers. In effect,

the warmth from the wastewater heats up the cold water feed into the boiler, reducing the amount of energy needed to raise the water temperature to the appropriate level.

In doing so, Lowheat reduces the overall energy required to run a boiler or immersion heater cylinder, cutting the overall energy consumption of homes and other users.

www.lowheat.iphe.org.uk/index.html

FLEET MANAGEMENT AND LOGISTICS CATEGORY WINNER HUMBERSIDE POLICE

Protecting the planet

Crime prevention and energy efficiency can go hand in hand

Humberside Police Force prides itself not only on crime reduction, but also on recognising its wider environmental impact on the community it serves. Its energy efficient approach to fleet management is helping to ensure that its impact is increasingly positive.

"We follow a 'quality of life' policing style, which aims to protect, help and reassure the community we serve. Reducing the environmental impact of our fleet of vehicles is a logical progression of the Force's ethos," explains Alan Hocking, Humberside Police's fleet manager.

Humberside Police covers an area of 1,356 square miles and is made up of four unitary authorities. It employs 2,400 police officers and 860 support staff.

The Force operates a fleet of 565 vehicles, comprising traffic patrol cars, large general purpose vans, personnel carriers, small-to-medium-sized cars used on the beat and motorcycles. In total, they cover approximately nine million miles every year. Consequently, minimising the environmental impact of the fleet service is a key priority.



Humberside Police first began exploring ways of introducing a more environmentally sustainable vehicle fleet in 1996 following trials of Liquefied Petroleum Gas-powered (LPG) vehicles. Since then, it has become a national champion of environmental fleet management.

Out of its total fleet, 411 now run on LPG, 38 run on bio-diesel and 126 on petrol. It is one of the largest alternatively-fuelled vehicle fleets in the UK and includes a network of 18 in-house LPG refuelling sites. Those vehicles that remain

petrol-driven do so only because they are unconvertible – motorcycles, HGVs or unsuitable engines.

As a result of the LPG conversion programme alone, the force saves more than £250,000 each year on fuel costs.

To demonstrate its ongoing commitment to reducing its environmental impact and to demonstrate the benefits of LPG, in 2001 Humberside Police joined Motorvate, the greener fleet certification scheme which sets and monitors fleet CO2 targets.

Within the first 12 months of joining the scheme, the Force had reduced its annual fleet mileage by over nine per cent – around 900,000 miles. It is now committed to further reducing its fuel use by over 40,000 litres a year and mileage by over 250,000 a year. Moreover, all engine oil and tyres are recycled.

Meanwhile, the Force is continuing to evaluate other alternative fuels and vehicles, such as hybrid cars.

"We're very proud of our achievements. We are now frequently asked to provide advice to other fleet operators on issues relating to alternative fuels and mileage reduction and we are becoming widely recognised as leaders in the field within the fleet industry," says Hocking.

www.transportenergy.org.uk/bestpractice

FINALISTS

Humberside Police (winner)
Bristol City Council
Cory Environmental
Focus Consultants

ABOUT THE AWARDS

The National Energy Efficiency Awards programme has been established by national charity UK CEED to promote the business case for energy efficiency.

Through the Awards, UK CEED and the awards partners aim to encourage other organisations to follow the outstanding example set by the Award finalists in reducing their energy usage and rising to the climate challenge.

We have been delighted by the response to the Awards in this, its inaugural year. With over 170 entries, the quantity of the entries has been surpassed only by their quality. The breadth of entries has also been exceptional, ranging from voluntary and community groups through to FTSE 100 companies.

UK CEED would like to thank all those who took the time to enter projects this year and the judges for their hard work and enthusiasm. The Awards would not have been possible without the support of EDF Energy, the headline sponsor, and the following organisations: the Carbon Disclosure Project; Defra; English Partnerships; and Progressive Media, publishers of Water, Energy & Environment Journal.

If you are interested in being involved in the 2007

National Energy Efficiency Awards as entrants or sponsors please contact: Catherine Saunders, UK CEED
c.saunders@ukceed.org
Tel: 01733 311644

ABOUT UK CEED

Founded in 1984, the UK Centre for Economic and Environmental Development (UK CEED) is an entrepreneurial charity promoting sustainable development policies and actions. The Centre is an evidence-based organisation, undertaking a broad range of research and demonstration activities, providing policy advice and guidance, and seeking to raise awareness of good practice.

The Centre works with private, public and voluntary sector partners in the UK and across Europe. Its programme is delivered through four core business units: Environmental Industries; Low Carbon; Resource Efficiency; SustainIT. Details of the Centre's activities can be found at www.ukceed.org.

