

# green energy



A SUPPLEMENT TO BUYING & USING UTILITIES MAGAZINE



## SCHOOLS: SHOCKING ENERGY WASTE

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## DO POLITICIANS REALLY CARE?

Every time we hear a politician from any of the main parties speak in public about green issues they always appear to be fully behind the agenda. Then when their actions are analysed, apparent contradictions jump to the fore.

Take for instance the Government's recent consultation on greenhouse gas reporting guidelines for businesses. This would seem to be aiming directly to stamp out commercial demand for renewable electricity.

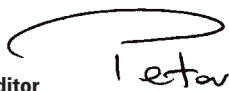
Greenhouse gas reporting may well be a positive move by making emissions more transparent and businesses more accountable. However, under the proposals organisations with on-site generation and receiving a subsidy have to report the electricity as having carbon emissions equivalent to grid average in their gross emissions accounting. So where's the benefit in that decision?

## CREDIT AND CARBON EXECUTIVE BRIEFINGS

Next month the MEUC is planning a series of afternoon Executive Briefing roadshows across the country to deal with the topical issues of Credit Terms in Energy Supply Contracts and the Carbon Reduction Commitment.

They aim to set out the reasons why credit and carbon reduction have become such important issues. Can you afford not to come along, find out how it might affect your organisation and what actions you need to take? Check out page 22 for dates and locations.

Peter Roper, Editor



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# MEUC - Leading the Way Through the Turmoil...

**Volatile prices, CRC, credit risk, global financial crisis and a tangle of new legislation - never before have the pressures on those at the sharp end of buying, using and saving energy been greater.**

**Advice and information, powerful lobbying on your behalf, plus a unique opportunity to voice your concerns and network with others in the same position are ever more crucial in these unprecedented times - so if you haven't joined the Major Energy Users' Council already, now is the time to do so!**

## MEUC membership will help you to:

- **ACHIEVE** and maintain lower electricity, gas, water and telecoms costs for your organisation
- **ENSURE** contract terms and conditions reflect your purchasing power
- **MAXIMISE** your understanding of CRC, data collection and reporting requirements
- **GAIN** insights into UK and European legislative and regulatory market changes
- **MAINTAIN** a robust strategy for dealing with these volatile and uncertain markets
- **ENABLE** your organisation's concerns to be brought to the attention of Ministers, Regulators, Suppliers, and other interested parties.

## ...through:

- **PARTICIPATING** in, or nominating colleagues to attend, the regular conferences, meetings and workshops: hearing from the experts, making contact with suppliers, and exchanging ideas and experiences with fellow members.
- **EXAMINING** your current purchasing and carbon management programmes in a dedicated on-site annual review meeting with an MEUC advisor, and reviewing your utilities strategy in the face of changing market and government initiatives.
- **RECEIVING** regular market and political intelligence through the fortnightly Newsletter for members; Monthly Energy Snapshots and Quarterly In-depth Report and Forecasts.
- **ACCESSING** expert advice, as required, on market, contractual and legislative issues through the Council's Specialist Group Chairmen and through networking with other members who may have faced similar issues.

**The MEUC Meetings Calendar:** National and regional conferences, roadshows, and meetings are held throughout the year. Most meetings incorporate workshop discussion sessions allowing issues to be raised within smaller groups. Two representatives from your organisation can attend as many meetings as you wish as part of the subscription. You can nominate colleagues and staff to attend in your place.

**The On-Site Meeting:** These visits normally pursue three objectives. First, for MEUC experts to keep up to speed with your organisation's changing energy requirements. Secondly, to allow confidential discussion to take place on the issues currently facing your organisation and how any market or legislative changes should be anticipated in shaping future energy and carbon management strategy. Thirdly, to review the range of services provided and ensure you and your utilities team are using them to best advantage. Additional or regular review meetings can be held throughout the year by separate arrangement.

**Regular Information and Publications:** The fortnightly MEUC members' Newsletter is e-mailed to designated recipients, combining briefings on market and legislative changes with informed comment on implications for members, and reports of government regulatory or supplier meetings attended by Council executives. Regular gas and electricity pricing data is also included for those buying off the forward curves. Members also receive Monthly Energy Snapshots, Quarterly Market Report and Forecasts plus, of course, Buying+Using Utilities and Buying+Using Green Energy magazines.

**On Demand Expert Advice:** Members can contact the MEUC as and when problems within your organisation emerge which prove hard to resolve. These could be issues over prices, supply arrangements, credit or billing disputes: the range of topics is wide and all questions are directed to the appropriate expert for comment and help.

**HOW TO JOIN:** The full range of member services is provided for a single annual fee. These include up to two delegate places at all MEUC meetings, the on-site member's review meeting, the newsletter and publications dispatched to nominated recipients, and use of the on-demand advice service throughout the year. You can join at any time with your annual fee covering the next twelve months. The annual fee has been frozen for 2009 so new members can join at last year's rate.

Set up 22 years ago when the UK's energy monopolies were being passed into private ownership and the competitive energy markets were created, The Major Energy Users' Council has helped hundreds of businesses [including Marks & Spencer, British Telecom, Tesco and B&Q] to secure lower utility prices, improve efficiency and obtain superior contract terms. Carbon legislation, management and reporting, supplier credit terms, volatile prices and lack of competition are amongst issues now facing industry, commerce and the public sector. A recent MEUC conference survey showed members' key concerns as shown in the table (right):

**To learn more about the unique benefits of MEUC membership contact [andrew.buckley@meuc.co.uk](mailto:andrew.buckley@meuc.co.uk) or Tel: 020 8997 3854**

|  |     |
|--|-----|
| 1. Uncertain and volatile energy prices .....    | 23% |
| 2. Lack of supply market competition .....       | 13% |
| 3. Credit terms and/or supplier disputes .....   | 11% |
| 4. Metering and/or inaccurate billing .....      | 10% |
| 5. Carbon data collection and reporting .....    | 10% |
| 6. Uncertainty over longer term supplies .....   | 9%  |
| 7. UK energy prices compared with overseas ..... | 9%  |
| 8. Affordability of future energy plans .....    | 8%  |
| 9. Quality of physical supply/ disruption .....  | 6%  |
| 10. Slow progress to a European market .....     | 1%  |

# On parade



Ever imagine that energy consumption could affect your company image? The Carbon Reduction Commitment (CRC), a new emissions trading scheme says it will.

With heavy penalties for non-compliance and a league table of winners and losers made public each year, your conduct becomes a matter of public scrutiny.

**Simple steps like fitting smart metering could make you a winner.**

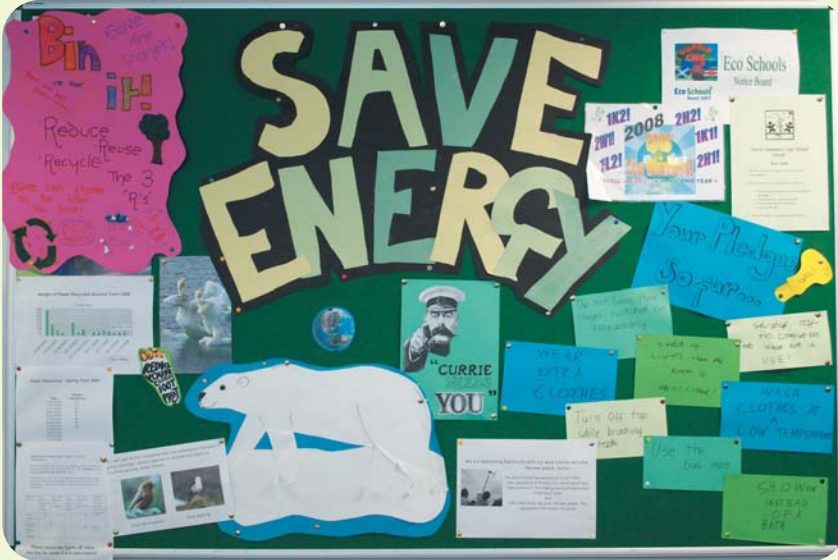
It's easy when you know how.

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*One or more half hourly meter(s)?  
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Carbon Reduction Commitment.  
Scheme begins in 2010*



# SCHOOLS WASTE £86



Left: To help get every pupil involved Currie Community School features an eco-saving pledges notice board. Below: Solar tubes bring light into a dark corridor at Ashley School and reduce the use of lighting.



Schools in Britain waste an average £2,000 a year on energy and 95 per cent of all education establishments have no clear energy policy, a B+UU investigation reveals.

As Schools Secretary Ed Balls discusses plans to cut a potential £2bn in education spend, simply by adopting cost-free energy saving measures, schools could save up to a massive £86 million each year.

Britain's schools and colleges spend almost £400m a year on energy, accounting for around a quarter of all public sector energy costs. And that figure is set to increase significantly over the next few years, unless drastic action is taken.

It is widely acknowledged amongst energy efficiency experts that 10 per cent energy savings are readily achievable with little or no capital outlay. Indeed, the Carbon Trust suggests reductions of between 15-23 per cent are available. This would equate to between £70m - £86m saving for schools countrywide and require in some cases, just a few small efforts such as installing better insulation, switching off lights when not in use, unplugging monitors at night and reducing heating temperatures by a few degrees.

According to Bobby Collinson, Managing Director of energy consultancy Power Efficiency: "Energy use in schools is on the rise for two reasons - greater use of IT, especially networks, which is often mistakenly believed must be left on overnight, and power hungry mechanical ventilation systems in newer and refurbished buildings.

"Therefore, in recently opened schools, which we might expect to be more energy

efficient, electricity use and cost can be high even compared with the classic Victorian high window school. Heating can be high too (to heat the fresh air unless carefully handled) despite very good insulation and windows."

Energy supplier, npower, which offers schools free energy audits as part of its Climate Cop programme, has audited energy use in Britain's schools over the last two years. Each establishment surveyed, it says, could save an average of £2,100 a year - or more than 2,743 tonnes of CO<sub>2</sub> - without any financial outlay.

According to the Carbon Trust schools are responsible for over 5m tonnes of CO<sub>2</sub> emission a year, around 15 per cent of the total UK public sector emissions.

The top causes of wasted energy included leaving heating on, relying on electric lights, and poor insulation.

One third of schools surveyed left heating on too high or for too long. And 35 per cent did not have insulation on their pipe work or valves, leaving students and teachers overheated in some class rooms and too cold in others.

Meanwhile 38 per cent didn't make full use of daylight - having lights switched on, with blinds closed all day. A further 16 per cent of schools had no loft insulation, the survey findings disclosed.

npower found the majority of schools had low staff awareness of how to save energy, despite the economic and environmental benefits. If each of the UK's 25,834 schools made the simple and cost-free changes required to save around £2,000 per annum, a total annual saving of well over £61 million could be achieved, with a fur-

ther 383,990 tonnes of CO<sub>2</sub> saved.

The problem is most marked in secondary schools, with those surveyed each able to save an average of £7,700 - or 10 per cent of their annual energy bill. Primary schools fared better, but could still save around £1,200 or 8 per cent of their annual energy bill.

Clare McDougall, Education Programme Director for npower and Head of its Climate Cops programme added: "We're working with schools across the UK to help them save money and energy - and, from our work so far, we estimate each school could save an average of £2,000 a year, without having to spend a penny.

"With the Government and opposition parties discussing potential cuts in education budgets, adopting basic energy saving measures seems an obvious starting point. To date we have spent £36,000 on physical changes to improve schools' energy efficiency, and already made pledges to spend £500,000 in this area."

Jonathan Lydiard Wilson,

# MILLION A YEAR ON ENERGY INEFFICIENCY

EnergyQuote's Director of Strategy and Carbon, believes it is now essential for public sector organisations to receive better advice and support for their energy purchasing requirements.

"We have seen significant growth from universities to schools as they move away from traditional consortiums or government-sponsored buying agencies.

"Our experience is that the public sector still continues to be provided with a poor level of advice, guidance and support, which from the benchmarks we have carried out have indicated that in most cases they are paying above average prices for their energy requirements.

"This is also reflected in the continued usage of energy consultants that do not have the size and depth to be able to fully deliver an energy fund or basket product," he continued.

"These resource constraints result in 'bulk processing and template strategies' and hence the 'baskets' are set up purely to reduce costs - which are not always in the public sector customer's favour.

"In some instances a fixed price contract may be the right approach; in our experience every customer is different."

Mr. Lydiard Wilson reckoned the public sector should seek help from energy consultancies that possessed full time independent risk and strategy teams that could work with them to identify what product was appropriate and the risk they were prepared to take.

"This best practice approach ensures that the consultancy fully understands what the client is trying to achieve, how it is going to be measured, what are the appropriate risk management tolls, mitigating actions and then what is the right product for them.

"If a fund purchasing approach is the best option and is managed in the correct environment - the bringing together of considerable purchasing volume will result in major energy cost saving benefits."

Tackling energy bills is an effective strategy to reduce expenditure. It is also crucial in ensuring that quality of education is not at risk according to Julie Allen, Energy Efficiency Manager and DEC accredited assessor at EDF Energy

"Our Programme for Greener Schools promotes behaviour change through a web-based educational programme linked to the curriculum. It is designed to show how children, teachers and parents can make real and practical changes to use energy and water more efficiently in school, at home and within the community.

"In terms of procurement, many schools are already working with their local councils within the Office of Government Commerce (OGC) or smaller buying groups. With this in mind, we believe that the real savings are to be found by cutting energy usage, and therefore costs, through an effective programme of energy efficiency.

"For example, our work with Southwold Primary School in East London is a great example of what can be achieved. As energy supplier, we've been working with the school since 2008 to help reduce its energy costs and carbon footprint.

"Following a thorough audit, we helped it install a building management system (BMS) to monitor and reduce consumption. This allows parents, children and the wider community to look at the energy use, but more importantly means that the school's management team can centrally control consumption and turn off energy outside opening hours.

"Our team also developed bespoke software dashboards for the pupils' computers to help engage and involve them in reducing energy consumption.

"Following these simple changes, the results have been compelling. Southwold has reduced its energy bills by an astounding 35 per cent in less than 10 months, with the cost savings funding two extra full-time teachers," she added.

"An important point is that an old building is no barrier; Southwold was built in 1863, yet this has not proved a constraint to real improvements being made. Funding is available for schemes such as this, so we would urge all schools to take the plunge. Energy efficiency schemes are a win-win way to cut costs and help the environment at the same time."

Recently the Carbon Trust, working in conjunction with Oxfordshire Independent and State Schools Partnership and the Environmental Information Exchange,

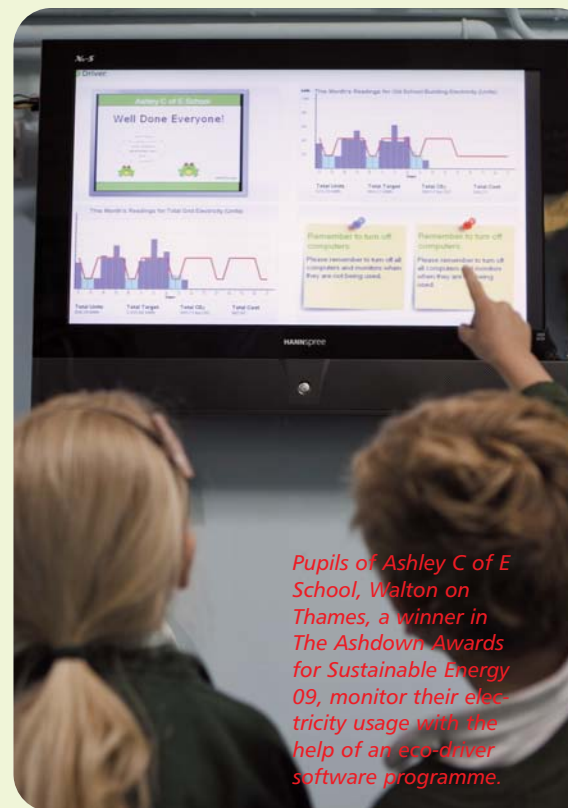
carried out an energy efficiency project involving 20 schools.

By adopting simple measures such as switching off IT equipment when not in use, improved lighting, installation of movement sensors, greater boiler efficiency, insulation to roof and pipework and improved energy management, 813 tonnes of carbon was saved and energy bills were slashed by over £120,000.

In another example the Trust helped Thomas Alleyne's School in Staffordshire reduce its energy bill by over £11,000 and cut its carbon emissions by 114 tonnes.

Ian Mirams, school Site Manager said: "The largest savings are the result of a cover being installed over the swimming pool to prevent heat loss. It's so simple to use and saved us nearly £4,000 a year.

"Having installed monitoring and targeting software, the school is now taking meter readings every week to keep track of electricity, gas and water consumption. This alone is expected to deliver annual savings of £4,000," he added.



*Pupils of Ashley C of E School, Walton on Thames, a winner in The Ashdown Awards for Sustainable Energy 09, monitor their electricity usage with the help of an eco-driver software programme.*

# GREEN TARIFFS ARE NOT GREEN- WASH

“It’s quite clear that business wants to improve its green credentials, but until recently has never had the option to buy green electricity in the same way that domestic users can,” declared Jo Butlin, Retail Vice President, SmartestEnergy.

Speaking to Peter Roper during the recent Energy Event 09 exhibition and conference in Birmingham, she denied suggestions that ‘green’ tariffs did nothing more than exploit the environmental enthusiasm of industrial or commercial operations.

Earlier this year Smartest introduced a new tariff for half-hour metered business customers where they can specify the exact fuel mix of the electricity they use, with an option to use up to 100 per cent renewable supply if desired. Customers are also able to specify exactly which technology and even which producer they would like to buy from.

“We offer a flexible solution, from source to supply, where customers can specify exactly how much renewable power they want and which sources they want it from. Each unit they buy creates greater demand and additional support for the UK independent renewable generation sector. We already have a number of customers signed up for the service and look forward to signing more,” Jo added.

Discussing the controversy surrounding green tariffs such as increased premiums and accusations of double-counting she said: “Electricity suppliers have come under fire for selling renewable electricity at a premium rate on green tariffs, even though they are legally obliged to buy a certain amount under the Renewables Obligation.

“This system does not support increased investment in renewables, even though green tariff customers are paying more for their electricity.

“Last year the Government’s own purchase of green tariffs was slammed by MPs, who described it as a mere “branding” of renewables and “wholly unsatisfactory.”



In July the market’s regulator, Ofgem, ruled that electricity suppliers would have to provide additional environmental benefits, such as supporting new renewables developments, in order for the tariffs to qualify as green.

“The only proof that energy is renewable is the Renewable Energy Guarantee of Origin (REGO) and the Levy Exemption Certificate (LEC).

“We buy Renewables Obligation Certificates (ROCs) to cover our own obligation under the RO. We sell power bundled together with REGOs and LECs associated with a unit of energy, so there can be no double-counting. The REGO is the only certificate that proves the renewable provenance of the physical energy, so customers can be sure they are buying a genuine unit of renewable energy. We can guarantee origin and even provide the serial numbers of the certificates,” she added.

Discussing the Carbon Reduction Commitment due to take effect in five months, Ms. Butlin had concerns that it could seriously hinder attempts to meet renewable generation targets.

“Under the terms of the proposals each affected firm will be expected to reduce their energy consumption - and therefore their emissions - against a baseline to be set next year. So far, so good. It certainly makes sense to encourage and reward energy efficiency and reduce demand on the network.

“However, under the CRC framework, those companies seeking to make a further difference by buying electricity from a dedicated renewable supplier will not be allowed to use this as a contribution towards their emissions reduction. Instead, the Government has decided that all electricity purchased will be measured as ‘grid average’, regardless of whether the renewable mix in your supply is 5 per cent or 100 per cent.

“The scheme assumes there is no difference between electricity generated at a coal-fired power station and that generated by a wind-farm or small hydro plant. This clearly makes very little sense and sends entirely the wrong signal to the UK renewable electricity industry and its customers at just the time when we need to increase demand

and supply of renewable energy, not squash it.

In the UK, industrial and commercial customers account for 62 per cent of electricity consumption.

“Greater demand from this sector could seriously transform the renewable energy market in this country and provide a direct line of support for the independent generation sector. However, as a supplier focused on delivering renewable power to this sector, we are already seeing both customers and intermediary brokers walking away from renewable offerings for the medium-term as they pre-empt the effect of the CRC.

“If any commercial energy user wants to demand and buy 100 per cent or even 50 per cent renewable content in their fuel supply, as they can from us, then the extra difference between grid average and the actual amount supplied - as directly backed by the REGO - should count towards their reduction commitments.

“Business customers can benefit by displaying the energy mix they buy as an indication of their wider credentials, while generators benefit from the direct support this provides.

“If we are serious about making an impact on climate change we must ensure that this truly reduces carbon emissions and does not impact on the renewable energy sector.”

LOW-CARBON gas absorption technology - which heats and cools buildings with significant cost and environmental benefits - is now available in the UK following a new Anglo-Italian agreement.

Sustainable power business ENER-G has joined forces with Italian manufacturer Robur to supply gas absorption heat pump solutions (GAHPs) to UK businesses.

The system is said to reduce costs dramatically when converting from traditional boiler technology, while significantly improving environmental performance - benefiting businesses and public sector organisations.

The technology works by removing energy from the outside air and then upgrading it in the heat pump so that it can be used to heat or cool air or water inside a building. The whole process is powered from natural gas or LPG

"GAHPs harness the properties of refrigerants to change from liquid to gas and back again in order to transfer heat. The technology provides sustainable solutions for a wide range of businesses," said Andrew Hill, Product Manager at ENER-G.

Among financial advantages are energy consumption reductions of up to 50 per cent and exemption from the climate change levy. Legislative benefits include cost savings relating to the new Carbon Reduction Commitment (CRC) and improved Building Energy Certificate ratings

## Environmentally friendly heat pumps now available



(EPC and DEC).

Additionally, GAHP systems means reduced regulatory costs as a result of low emissions, enabling points for BREEAM assessment, and compliance with Part L2A and Part L2B of Building Regulations.

Operational benefits comprise security of energy supply through reduced dependency on electricity, low maintenance levels, easy installation and heating and cooling provided by a single unit.

"Our heat pump solution provides a reliable, cost-effective and constant energy source that is highly effective for industrial and commercial use," added Andrew Hill.

"This is due to the system's ability both to save energy and increase the value of the build-



ing with its A+++ classification issued by the European Commission."

ENER-G offers a free feasibility study; project design; system specification; installation and commissioning; 24-hour help desk; after-sales support; service and maintenance; and flexible finance options.

"While traditional heat pumps use a compressor to convert the gaseous refrigerant into a liquid state, absorber and generator systems transfer the refrigerant into an absorbing fluid and then liquefy it," added Mr. Hill.

"This means that only a small supply of energy is required to pump the refrigerant solution around the fan to circulate the air, which substantially lowers both energy costs and CO2 emissions."

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# SOUTH WEST WATER SAVES MONEY WITH AMRS

With the Carbon Reduction Commitment (CRC) fast approaching and energy efficiency a priority for every organisation, the installation of automatic meter reading (AMR) meters cannot be overlooked.



## Tackling the CRC

The business of water companies is highly energy intensive. Collectively across the UK they account for approximately 2 per cent of the entire country's consumption. South West Water (SWW) consumes around 270GWh a year, 80 per cent (around 216GWh) of which is from pumping, water and sewage. Finding ways to reduce consumption can have a huge impact on the company's bottom line and environmental contribution.

SWW teamed up with EDF Energy, EDF's Customer Field Services and Western Power Distribution on a widespread implementation of AMR across its network in Devon and Cornwall. At least a third of its non-half hourly (NHH) sites now have AMRs, with total coverage to follow.

Previously, remote and often inaccessible sites relied on estimated bills. This unpredictability of data meant that energy efficiency and reduction programmes were more difficult to measure and implement. Now, with around 95 per cent of the installed meters dialling successfully, there is high transparency of energy usage.

SWW is able to effectively analyse its consumption, avoid the 10 per cent uplift penalty for estimated bills under the CRC and take advantage of the Early Action metric within the scheme. The metric rewards the early installation of AMRs and Carbon Trust Standard accreditation. No more manual meter readings means no more "man in a van" and fewer car miles, benefiting both the environment and the bottom line.

## Smarter metering

EDF Energy and SWW worked closely to undertake what was a logistically



complex process, phasing meter swap-outs and avoiding any disruption to levels of customer service. Constant liaison and effective project management was required to ensure a steady roll out, which adhered to the particular security and health and safety requirements of the water industry.

The meter's SIM card automatically sends data to EDF Energy's secure database. This allows the team to quickly spot changes in energy usage and to take appropriate action. This awareness of energy consumption has also prompted a series of "Power Down" campaigns among its 1200 employees.

As Ray Arrell, Energy Engineer for SWW said: "For any organisation eligible for the CRC, it's a no-brainer really: we're getting an accurate picture of our actual usage, the pay-back is only a year and as it is one of the CRC early action metrics, it should help boost our league table position."

*Top: Countess Wear Sewage Works in Exeter, one of SWW's larger sewage treatment works.*

*Above: Crownhill Water Treatment Works in Plymouth, one of SWW's larger water treatment works.*

## Getting ready for the CRC

Organisations eligible for the CRC have only until next April to prepare. Poor performance in the scheme will not only have a cost implication, but also appearing in the bottom half of the league table could damage corporate brand reputation.

Installing AMR on non-half hourly metered sites has two benefits: Firstly, if it is installed by 31st March 2011, organisations are recognised through an 'early action' metric which means their position in the league table is improved and this in turn leads to a bigger rebate on their purchased carbon allowances; secondly, these companies will avoid the penalty of having to buy an additional 10 per cent carbon allowances for energy use based on estimated readings.

Beyond these instant benefits, early installation enables improved energy efficiency and reduced energy consumption. By providing transparency of energy usage for analysis, trends and potential course of effective action can be identified.

To help customers, EDF Energy is continuing to host its Café Energy CRC workshops. It is also planning new 'master classes' which will focus on specific sectors and provide more detailed, hands-on advice on how to comply and achieve significant carbon reductions.

## About South West Water

South West Water provides water and sewerage services for the South West peninsula and is part of the Pennon Group, based in Exeter. The company operates in Devon, Cornwall and small parts of Dorset and Somerset.

It's a challenging role, serving a region of nearly 4,300 square miles and 1.6 million residents, with an estimated eight million visitors in a typical year.

The influx of tourists over the summer can mean that in a 'peak week' the total population of the region rises to over two million - which is the highest increase in population of any of the British water companies.

This shift means demand for water is a third higher in the summer than over the year as a whole - so its works and pipelines have to be built to cope with high peak demand. Each day the company supplies over 100 million gallons of water through 10,000 miles of water mains to homes and businesses.

The area is one of the fastest growing in the country, with forecasts for over 6,000 new homes to be built each year.



**G**oing green will require energy efficiency as well as renewables if businesses are to be successful in reducing CO<sub>2</sub>, according to Dave Lewis, Head of Business

Energy Services at npower.

One look at the Low Carbon Transition Plan White Paper reveals how important renewable energy will be in the future. It lays down a target to source 40 per cent of the UK's electricity by 2020 with policies to produce 30 per cent of the country's electricity from renewables.

Procurement of renewable energy is sure to form a key part of businesses' strategies to decarbonise their operations. Indeed, our own customers Sainsbury's and Marks & Spencer have been among those investing in procurement and generation of renewable energy to reduce carbon emissions.

### Energy efficiency matters

As important as renewable energy will be in the businesses world, however, there is a risk in seeing it as a panacea. The Government is equally keen to reduce our reliance on energy if it is achieve the ultimate aim of an 80 per cent reduction in CO<sub>2</sub> below 1990 levels by 2050. It will do this by incentivising us in our homes and workplaces to improve energy efficiency. Among the measures aimed at businesses is the Carbon Reduction Commitment (CRC), set for introduction in April.

The CRC will apply to any organisation with a total half-hourly metered electricity consumption greater than 6,000 MWh a year or an annual spend of roughly £500,000. Participants will have to forecast their consumption at the start of each trading year and buy sufficient carbon allowances to cover the predicted emis-

sions. At the end of year, they will submit their annual energy consumption, their equivalent emissions figures and the carbon allowances needed to cover this amount (the price of allowances will be fixed at £12 per tonne of CO<sub>2</sub> for the first three years). Companies that exceed their forecast emissions will be able to buy the necessary extra allowances - at a higher price - in specific trading windows.

The CRC is further evidence of the plans to encourage businesses to improve energy efficiency alongside the use of renewable energy. Under the scheme, renewable energy will be classed as 'grid average' so that business using green energy will receive no benefit under the CRC. While this has caused frustration in some quarters, the Government is firmly sticking to its position that the CRC is about carbon reduction through energy efficiency.

### A combined approach

Therefore, any strategy to reduce emissions cannot rely solely on renewables, but must look to energy efficiency to maximise the benefits on offer. Both Sainsbury's and M&S have plans to improve efficiency as well as increase use of renewables. And there are strong reasons for doing so.

With renewable energy, while there may be no immediate cost benefit of procuring green, the impact on reputation of a small carbon footprint is potentially significant. A McKinsey study, commissioned by the Carbon Trust, revealed that combating carbon emissions could boost companies' values by up to 80 per cent. However,

# Renewables are not a panacea

it could put up to two thirds of its value at risk by failing to take steps.

Under the CRC there are also benefits to be had from improving energy efficiency, both in the cost savings achieved by reducing consumption and also through trading carbon allowances. The price of allowances is expected to increase in time, providing further incentive to reduce emissions and trade.

A league table will be published detailing the best and worst performers. In the first three years, league table positions will be partly based on an early action metric taking into account measures to improve energy efficiency. The impact on your corporate reputation of a low league position could be as important as the financial.

### Making the most of the CRC

If businesses are to perform well under the CRC they must be able to accurately record and forecast their energy consumption and emissions in order to maximise trading options. Many businesses have already made improvements in energy monitoring in recent years, but at npower, we expect the CRC to induce a step-change in how business also looks at future consumption.

We have been working with a number of organisations to devise the tools to achieve this. Among these is the newly-launched 'encompass professional', a new monitoring tool that analyses energy use in detail and combines historic data on company production levels and energy usage with 20 year weather patterns to calculate future energy use. This information is then used to improve energy management and cash flow to devise strategies in reducing consumption, costs and carbon.

It is the latest addition to npower's 'm3' solution, an energy management service which includes energy monitoring and targeting together with guidance on implementing carbon and energy reduction strategies.

The ability to calculate future energy use and carbon emissions is expected to be valuable under the CRC.

Using 'encompass professional', businesses will be able to better manage their purchase of carbon allowances, thus reducing the financial risk of needing to buy additional allowances on the open market.





# CARBON FOOTPRINT: FAMILIARISATION IS CRUCIAL FOR SUCCESS!

With impending UK regulations, Siobhan O'Keefe, Commercialisation Project Manager at EcoSecurities highlights the urgent need to agree a successor to the Kyoto Protocol at the forthcoming United Nations Framework Convention on Climate Change Conference (UNFCCC) in Copenhagen in December. She also tackles the 'hot topics' that organisations need to get to grips with to ensure future success such as climate change and environmental best practice.

In 2008, the UK Government made a commitment to reduce 80 per cent of greenhouse gas (GHG) emissions by 2050. Large emitters, such as the cement, glass or oil refinement industries, already fall under the European Union Emissions Trading Scheme (EU ETS). However, for the UK to hit this target and ease the transition towards a low carbon economy, the Government are introducing other emission reducing programmes and initiatives, such as the Carbon Reduction Commitment (CRC) and Climate Change Agreements (CCAs).

The objective of these schemes is to improve energy and carbon management skills within businesses, particularly in relation to monitoring, reporting and reducing emissions, whilst also encouraging buy-in from Senior Management and Board level executives on climate change and corporate social responsibility initiatives. All of this may seem like an additional financial and administrative burden, but the truth is there are a plethora of options available to companies that will allow you to turn this burden into a competitive advantage. Assessing your internal emissions can provide opportunities not only from government bonuses and public recognition but also from creating initiatives that offer internal rates of return leading to long-term benefits in reduced operational expenditure and energy costs as well as mitigating the risks associated with climate change.

So, what kind of solutions have companies implemented on the path to becoming green?

Many company operations can become more efficient, but to optimise inefficiencies it's important to establish one of the key components of any successful carbon management strategy, a company's 'carbon footprint'. A thorough understanding and awareness of GHG emissions will help identify 'hotspots' and allow benchmarking of progress.

The cheapest, easiest measures are those relevant to almost any operation and include recycling, waste reduction, energy efficiency measures and incentivising staff. For example, the international exhibition and conference centre ExCel London has an onsite recycling facility, which has a recycle rate of 78 per cent as well as the UK'S largest commercial wormery, used to recycle food waste by converting it into nutrient rich soil.

Eurostar recycles company uniforms by working with 'Worn Again', a company that takes the fabrics and transforms them into other usable items such as bags and travel card cases.

Marriott International Hotels have instigated energy efficiency measures such as installing low-energy light bulbs in all room lamps and exchanging 20 watt welcome lights with 1.5 watt light-emitting diodes.

In 2008, Tesco reduced the amount of waste going to landfill by over a third, using

waste targets that are reviewed and reported on a weekly basis, creating a 'closed loop system' to recycle card and turning it back into boxes within 14 days and it is also trialling an anaerobic digestion system in the Ludlow store, converting waste into energy. Tesco tries to incentivise and engage its staff and colleagues by having 'Energy Champions' who are responsible for reducing consumption in stores. There are around 4,000 Champions in the UK alone.

More complicated and longer-term strategies include increasing the use of renewable energy in buildings (purchasing green electricity), developing systems for more sustainable procurement activities, monitoring fleet emissions and forming travel partnerships, investing in on-site renewable energy or upgrading buildings to become more energy efficient. Again, using Tesco as an example, one of the key objectives within its climate change programme is to lead by example. It has developed a flagship low-carbon supermarket in Manchester that has exceeded its proposed CO<sub>2</sub> reduction target of 50 per cent by a further 20 per cent.

Designed to prevent heat waste as much as possible, it uses low carbon technologies such as onsite wind turbines and a combined cooling, heating and power plant running off vegetable oil, reducing carbon emissions by 78 per cent. The cooling system cleverly channels its carbon dioxide emissions to other machines requiring cool air and rainwater is harvested to supply 60 per cent of the stores toilet flushing needs.

Furthermore, the supermarket makes the most of natural light with a glass front and lights that automatically dim or switch off depending on the availability of sunlight. Natural wind catchers placed in funnels on the roof utilise natural ventilation and a metering system has been set up to monitor energy use. All these innovations have allowed an emission reduction of 70 per cent.

Another company doing great things in green initiatives is BT. It is developing the UK'S largest corporate wind project (outside the energy sector) which is due to be up and running within three years, providing 250MW of electricity by 2016.

In the meantime 98 per cent of the energy the organisation requires will come from renewable sources such as solar or hydroelectricity.

There are many initiatives that can be implemented to ensure a company transitions to a low-carbon economy as effectively as possible.

The most successful will be those that truly familiarise themselves with the company's carbon footprint and understand how to effectively reduce emissions with a balanced carbon management strategy that blends environmental and economic sustainability with the other operational factors.

# KERRYGOLD SLASHES CARBON FOOTPRINT BY 15%

THE Kerrygold Company, which cuts and packs one third of all pre-packed cheese in the UK and supplies all of the UK's major multiples, is leading the way in the reduction of carbon emissions in the manufacturing industry. The recent opening of the company's £30 million factory, one of the most environmentally-friendly facilities in Europe, has resulted in a 15 per cent reduction in the company's carbon footprint through energy-saving and production efficiencies in the factory, as well as changes to packaging materials and reduction in waste.

"The new factory is a significant improvement on the old plant, providing tangible operational and commercial efficiencies," said Carl Ravenhall, Managing Director. "The factory has been built taking into account its impact on the environment, which has helped us meet the growing demand from customers and suppliers to be more environmentally conscious, but more importantly it has also allowed us to be more cost effective as a business."

A major influence on the design of the new factory was the incorporation of new energy saving techniques and technology.

A total of 45 sun-pipes replace around 90 electrically operated lighting fittings. This saves 5kw of energy in daylight hours and promotes a sense of well-being with natural lighting throughout the internal offices.

The new complex also uses the latest lamp technology. Some 168 twin tube fittings replace 252 conventional twin tube fittings. T5 fluorescent tubes are used within the production areas. The lamps last for two years and produce a greater output than conventional fluorescent lamps.

In non-production areas passive infra red (PIR) lighting control provides lighting on a "needs-only" basis, dimming the office lamps when good natural daylight (via windows and sunpipes) is available. The PIR controllers sense the natural light and automatically reduce the artificial lighting level. Additionally the PIR controls automatically switch off lights when office areas are unoccupied. The resultant reduction in energy used for lighting is more than 50 per cent.

In addition there is 10kw of "free electricity" generated by photo-voltaic cells which have further reduced the company's carbon footprint. The cells turn daylight to 230 volt-electricity and feed it into the electricity distri-



bution system. This 100 per cent sustainable electricity replaces the power taken from the utility company's grid.

A combined heat and power (CHP) plant generates 100kw of electricity and provides 225kw of waste heat to pre-heat water for washing and cleaning.

The plant comprises a gas engine generator that, in producing electricity, also produces heat used to provide the hot water supply. Gas has a lower carbon footprint than electricity and therefore contributes toward reducing the CO2 emissions by up to 10 per cent.

Another bonus is free-cooling to the production hall. It requires an operating temperature of between 10-12°C. In winter months, the external air temperature can be lower. Roof-mounted air dampers open with cool fresh air bought in via fans, where it is filtered and used for the production hall space.

This negates the need for artificial cooling and reduces energy consumption of the plant. The energy reduction from this source is approximately 150,000kw per hour.

An inverter controls the speed of electric motors so they can be matched to the mechanical load being imposed by the plant and system. A standard speed motor would consume energy constantly, regardless of the loading imposed. This has resulted in a 56 per cent energy reduction against the rated motor loadings.

Using air as the cooling medium in the refrigeration plant has led to a 60 per cent reduction in electrical consumption.

The state-of-the-art chiller incorporates variable screw compressors utilising the external ambient air condition to cool the refrigeration area, which in turn provides chilled water.

The plant operates to its optimum efficiency, relative to the load at the time by using

45 sun-pipes replace 90 electrically operated lighting fittings.

Below: A combined heat and power (CHP) plant generates 100kw of electricity and provides 225kw of waste heat to pre-heat water.



modern technology control systems. These permit centralised management and monitoring, while key alarms highlight deviations.

The systems also provide an energy input for cooling relative to the actual cooling load required, and have the ability to vary between 0-100 per cent. This allows output to equal actual energy needed.

In addition to energy-saving technologies, the factory's fully integrated production system enables the reduction of waste. An example can be seen in how the factory feeds the hot water produced by the CHP units into its hot water supply.

"We are constantly evolving our operation to ensure that we remain at the leading edge of manufacturing best practice," Mr. Ravenhall added.

"The new build is the most efficient and environmentally friendly cheese packing facility in the UK and Europe and as such, we are capable of reducing our carbon footprint a great deal more.

"We've made a commitment to review our sustainable energy practices on an ongoing basis, in line with our company ethos of continual improvement. It doesn't only make environmental sense. It makes good economic sense," he concluded.

# MEASURE, ANALYSE AND ACT TO REDUCE YOUR ENERGY CONSUMPTION



Joe Polastre of Sentilla discusses a three-step approach for improving energy efficiency

TODAY, major energy users from all sectors are seeking to improve the energy efficiency of their operations for a wide variety of reasons: the quest for cost savings in these tough economic times, the necessity to combat increasing utility prices, the desire to meet corporate social responsibility (CSR) targets and the need to comply with forthcoming legislation, particularly the Carbon Reduction Commitment, which will effectively impose a tax on the UK's largest carbon emitters from April 2010.

Whilst the desire to reduce energy consumption is burgeoning, many organisations lack the knowledge or capacity to make the changes needed to fulfil this goal. The process requires both micro and macro investigation throughout operations, as energy usage takes place across an array of business areas - from industrial processes to building services and computing equipment, with the latter category now representing the largest single component of enterprises' energy costs, according to research from McKinsey.

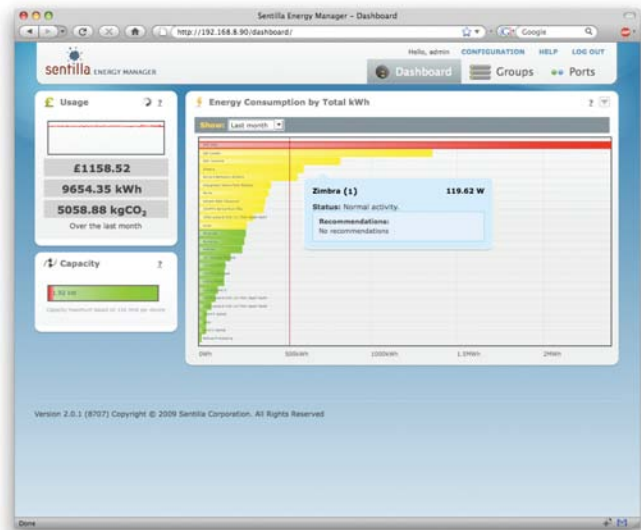
The responsibility for each of these areas lies with different individuals - energy managers, sustainability or facilities managers, chief information officers and chief financial officers.

The latter rarely have sufficient knowledge of energy usage and inefficiencies to make significant changes. Without knowledge of where waste occurs it is virtually impossible to take the steps necessary to lower consumption, streamline operations and make better use of existing assets.

The solution lies in new energy monitoring technology, which gives end-users the data they need to engage in a three-step programme to reduce consumption: firstly, determining when and where energy is being used; secondly, identifying the largest consumers; and, thirdly, making changes to operations to actively reduce usage. In short, organisations need to measure, analyse and act.

## Measure

Until now, many organisations have had little insight into how energy is consumed within their facilities, with traditional meter-



ing equipment providing an averaged, blanket reading for power use. Technology advancements are changing that however, with the proliferation of smart meters and, more significantly, the development of energy monitoring systems that can instantaneously measure and aggregate power consumption data of individual items of equipment in real-time.

Such technology has the ability to work across the previously fragmented areas outlined above, using common standards such as simple network management protocol (SNMP) to integrate energy readings from single components - across manufacturing lines, lighting, heating, ventilation and air conditioning equipment and power-hungry IT systems such as data centres - into one, easy-to-read, Web-based dashboard.

This approach enables users to clearly and accurately identify how much power they are currently consuming and where they are using it, displaying data either in energy units or as a cost per day, month or year, and utilising graphics to compare each piece of equipment or each area of a facility.

It is vital to keep in mind that the power coming into a facility is not the same as the power being used by the equipment within it. By measuring the power's progress to the equipment, it is possible to get an accurate read on what needs to be fixed. This allows end-users to set a new baseline for consumption.

## Analyse

The next step is to dive into the details to find precise power saving remedies. In the analysis phase, the goal is to take the massive amount of data that has been gathered and put it into

“Firstly, determining when and where energy is being used; secondly, identifying the largest consumers and, thirdly, making changes to operations to actively reduce usage. In short, organisations need to measure, analyse and act.”

a succinct and understandable context. It is vital to identify which specific areas are consuming the most power, along with the associated costs, and determine whether there are any significant trends that need to be reversed.

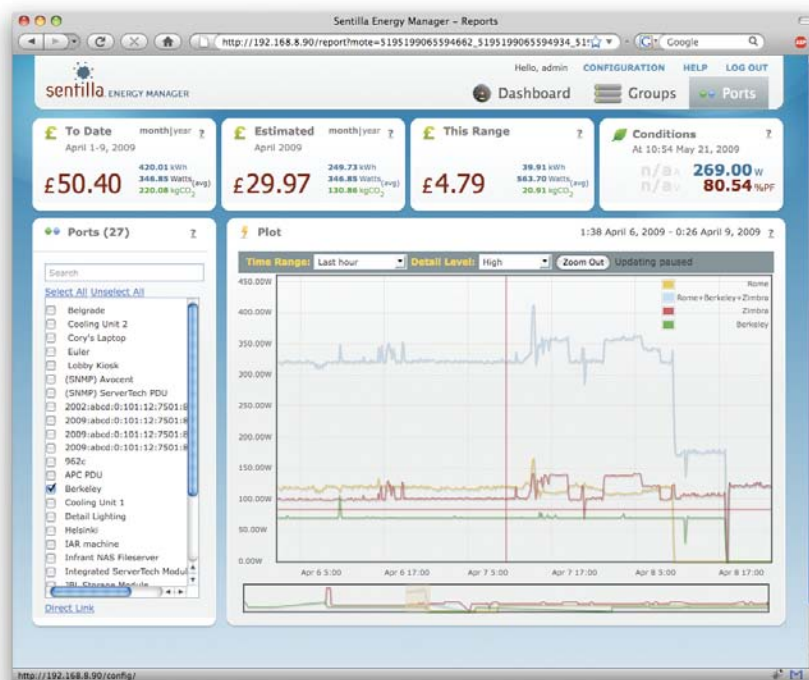
By looking at all the points across a facility, it is possible to locate where energy is wasted and mitigate losses.

## Act

Once measurements have been made and analysed and energy inefficiencies identified, the next step is to design a strategy on which the organisation can act.

By putting policies in place, organisations can focus on every tier of their operations and find equipment that is not being used in an efficient manner. Once the areas not performing to specification are recognised, organisations can then act by employing new tactics within individual areas of the business.

Using the data centre environment as an example (collectively data centres worldwide consume more energy each year than Israel) IT managers can act in a variety of ways: adjust how people perform their jobs; consolidate systems, replace faulty components or turn off equipment which isn't being used; and reschedule jobs to run more efficiently or take advantage of the most efficient servers for a specific task. Through such practices, energy consumption can be reduced by as much as 40 per cent.



## Repeating the process

Carrying out this process just once might reduce energy usage initially, but eventually entropy will set in. The key is to continue to measure, analyse and act - this is what differentiates an energy audit from truly sustainable practice. Through better management of assets, more accountable measurement and clearer goals for reducing energy costs, organisations can improve efficiency and halt the growth of carbon emissions.

# Light at the end of the tunnel

Your legal responsibilities on energy use and climate change impose many obligations. These impact on all consumers, business and public sectors. Shed some light on the steps you should be taking, visit a FREE ESTA event this Autumn.

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# BUSINESSES WARNED OF INCREASED ENERGY SUPPLY PROBLEMS

A LEADING energy procurement and management consultancy is backing the MEUC campaign to stop draconian credit deposits from being levied on industrial and commercial businesses.

Power Efficiency, which manages and procures £500 million worth of electricity and gas supplies for its clients every year, predicts that up to half of UK businesses could face financial hardship if prepayment from suppliers continues as more businesses fail credit checks and credit insurers decline to underwrite their payments.

Even customers who have a long-term contract with their supplier are being faced with demands for large security deposits mid-contract when the supplier's credit insurer withdraws cover.

Bobby Collinson, Managing Director of

Power Efficiency, said: "This is putting huge pressure on the already strained cash flow of Britain's industrial and commercial organisations and this situation is set to worsen as more and more businesses reach the end of their three year contracts and attempt to renew or find new energy suppliers.

"Customers who had no problem securing a supply contract three years ago may now find they can't get credit approval or are required to pay up to four months' fees in advance. Worse still, many will be completely unaware of this threat until the moment they attempt to renew their supply contract."

In markets deemed high risk, such as commercial property management where company structures are more complex - in offshore trusts

or special purpose vehicles - the problem is even greater.

Mr. Collinson added "We work to secure contracts for large businesses on the best terms and have on numerous occasions seen the difficulty which is now facing them to get a competitively costed supply.

"We feel it is our duty to publicly call on insurers and suppliers to take steps to better assist businesses facing this problem, rather than burdening them at an already challenging time."

During the MEUC's Spring meetings problems with credit were first raised.

As a direct response it immediately set up the Energy Credit Action Group to tackle this issue with suppliers, insurers, Government departments and the Regulator.

## Power Efficiency's view of key areas that could benefit from improvement:

1) **Applying for credit:** The provision of detailed up-to-date financial information can assist suppliers and credit insurer in making an accurate assessment of a company's standing and viability for credit. However, frequently it's very difficult for companies, especially publicly listed entities, to supply sensitive financial information and as a result they fail the assessment. Insurers could work to identify further information points that can be provided to support a credit application and explain these clearly to the market.

2) **Understanding the credit decision:** Insurers are not currently obliged to provide details of a credit assessment failure to the applicant company and therefore the applicant is unable to respond with any supportive evidence that could strengthen their case.

3) **Negotiating with suppliers:** Suppliers are currently inflexible when it comes to working with customers that present risk according to their insurers - they are automatically only offered supplies in conjunction with security deposits. If suppliers could develop innovative and wider ranging methods via which they can serve these companies better - perhaps by negotiating initially higher fees that are held in escrow accounts until they make a sizeable deposit, rather than demanding up front costs - terms that are satisfactory to both parties could be established.

4) **Fair terms and conditions:** Suppliers' terms and conditions are generally vague and one-sided giving them the right to demand unlimited security deposits mid-contract if the supplier is concerned about the customer's ability to pay.

5) **Regulator Ofgem and the Government** should respond to this failure in the competitive energy markets and support companies being treated unfairly by their suppliers, cannot obtain a competitive quote or cannot obtain or have lost their credit insurance.



Speaking at the MEUC Energy Risk meeting at the Energy Event 09 exhibition last month, Andrew Buckley, Director of Membership Services, said: "The MEUC views this issue as the trickiest problem to confront gas and electricity supplies for businesses since the energy industries were privatised 22 years ago. Where does it leave UK plc?"

"The current situation is clearly untenable for customers. Moreover the problem has been getting worse by the day. That is why the MEUC took the initiative to set up the Energy Credit Action Group."

Mr. Buckley added: "We welcome the support shown by the Government and Ofgem for our efforts to date and we have now moved on to set up a smaller Working Group to report on how the complex issues can best be tackled.

Some of our members only get what they are given and others are unable to secure fixed price contracts for over 12 months.

"When we first reported our findings to Ed Milliband, Minister for the Department of Energy and Climate Change, it was simply put down as a result of credit risk. Now as our campaign gathers more pace I am hopeful we might have convinced him to rethink."

Ian Watts, Vice President of trade credit practice Marsh supports Power Efficiency's fears that many more businesses might fail before the end of the year as a result of credit issues.

"There's a lot going on behind the scenes and the matter does not just affect energy. The high street is suffering as well."

Giving a suppliers' perspective, Dave Cockshott, Head of Corporate Sales at npower confirmed the last year had been a scary time for customers.

He did give an assurance that "not having credit insurance doesn't mean that businesses are going to be cut off or accepted as a new customer.

"Yes we can cut off supplies to someone who does not pay for their supply. But we are about selling electricity, so this does not help us in any way.

"Yes we can put customers onto a 'special' rate, but that just adds to that customer's financial problems.

"That's where credit risk insurance comes into its own," he added.

"We always try to mitigate the risks of non-payment, but we can't remove all of them.

However, normally there are many options that can be taken before cash up front deposits have to be introduced."

Giving the Regulator's view, Emma Kelso, Head of GB Markets at Ofgem, acknowledged the problems and pointed out that the number of complaints against suppliers from customers had increased during the year.

"Many of these related to a lack of response to tender for supply contracts, creating a lack of choice for the customer. However, recently we have been made aware of cases where directors of organisations have been requested to act as personal security should the business fail to pay its bills. It is our job to protect the interests of consumers so we will be investigating these complaints, but we do have limits to our powers."

Calling on all large energy users to let her know if they were facing any problems or had concerns about their suppliers' contracts, Mrs. Kelso said: "We want suppliers to respond to the credit deposit issue.

"We are very keen to hear from customers if their problems do not reduce and we have to take the matter further."

The business world is adapting its once fast-growing IT infrastructure to maintain 24/7 service availability for end users and consumers with greatly reduced maintenance budgets. On top of this, growing fears over the sustainability of power supplies and energy efficiency mean the IT department has to re-orientate its operations to reduce the associated carbon footprint - specifically their energy demands.

With renewed pressure comes the added cost of the mandatory Carbon Reduction Commitment. From next year, senior executives must ensure these new responsibilities are brought into their risk management planning for their IT operations. In particular, as companies 'green' their operations with the latest low energy, high density demand servers, they must ensure that they don't inadvertently compromise the resilience of their systems by asking too much of their data centres' existing back-up power systems.

The reality is that the latest storage equipment and server power demand profile is placing unprecedented strain on the data centres' standard Uninterruptible Power Supply (UPS) and backup generator systems that maintain continuous operations in an emergency or power outage. Despite good intentions, UPS equipment is now more likely to fail when powering new, 'greener' IT equipment.

By failing to address this critical mismatch is what the industry calls 'power factor correction'. Companies are inadvertently undermining the capability of their data

centre to withstand power grid difficulties, which puts the business at an increased risk of shut down or damage.

Problems can also stem from three other factors: the huge expectations being placed on enterprise IT, the way many data centres are configured and the fast-changing environmental agenda.

First, computing development has for decades been about providing more power and performance - at the expense of all else. IT departments were told to add more capacity and scale up the infrastructure, simply to keep pace with demand. The Internet explosion demanded 'always on' web-based business applications, leading to vast, power-hungry centres.

Secondly is how complex IT infrastructures are operated. Data centres may be duplicated at multiple locations or sprawling server estates and have grown rapidly, in piecemeal fashion, to meet demand. These resources may be co-located and run by third parties, maintained by outside infrastructure specialists; all of whom must support and advise the IT department. This new operating framework - and its risk factors - needs to be carefully managed to deliver sustainable IT.

Thirdly, the climate change debate has caused further disruption to business strategies. Critics have claimed that IT operations have similar levels of carbon emissions to aviation and the supply industry and its users have had to reverse their previous power consumption habits - while still meeting the 99.999% service expectations

of the online user.

The changing demands must be a central part of an organisation's risk management - whether it adopts a declared green IT strategy or not. The answer is to engage with data centre providers and infrastructure specialists to examine the operational requirements and power demands, to identify the critical pressure points and risk factors.

This is not a niche problem: infrastructure experts have started to see the first instances of what were, initially at least, unexplained failures of hitherto robust and proven UPS in data centres.

From both a business and technical perspective, the European Union Code of Conduct and Best Practice guideline for improving data centre efficiency is a very good starting point to understand data centre consumption. IT professionals need to heed the message and begin benchmarking data centre efficiency.

Awareness is increasing and in some cases we have seen organisations wasting £17,000 of energy each year on a poorly-specified uninterruptible power supplies (UPS) back up unit, which caused excessive power demand on the data centre's utility supply.

### Reduce data centre energy needs while avoiding the power factor correction issue

In a recent data centre project we implemented a complete primary server room and secondary business continuity room, based on a centralised management platform, giving equipment visibility, deployment of server clusters with maximum density in available space, server rack testing, power demand assessment, provision and installation of back-up UPS and battery units to support servers while reducing energy consumption, progress inspections and business continuity testing schedule.

Our engineers designed a physical UPS infrastructure providing complete failover, while the infrastructure also controls the level of power loading on back-up UPS systems, reducing component wear and tear and possibility of system failure.

In particular, the UPS units were designed to handle unity or leading power factor loads (modern high density blade servers draw this type of load profile). On many UPS systems, this type of load cannot be supplied without the risk of overload or failure of the UPS itself. This requirement is often overlooked as it may appear to be adequately specified, but not where energy-efficient blade servers may be concentrated. The only other alternative is to significantly over-size the UPS, but this would bring an unnecessary energy demand and cost increase.



# MAKING THE RIGHT GREEN CHOICES

What does going green really mean to your IT infrastructure and business operations?

Chris Smith,  
Marketing Director,  
on365.co.uk explains



# Smarter Metering Solutions

*that fit with  
your exact  
requirements*

## **BIU's smarter AMR (Automated Meter Reading) will:**

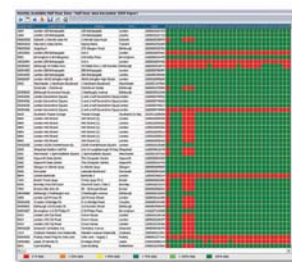
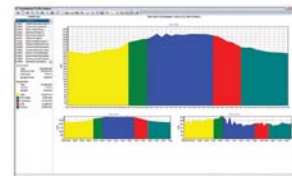
1. Improve budgeting and accruals for both cost and consumption by using timely and accurate data
2. Reduce estimated invoices and increase data accuracy
3. Access the fullest discounts from your energy suppliers
4. Accurately audit the provision of data to maintain timeliness and accuracy
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 **BIU**  
Making sense of energy

## Credit and Carbon Executive briefings

The MEUC is planning a series of afternoon Executive Briefing roadshows across the UK, dealing with the topical issues of Credit Terms in Energy Supply Contracts and the Carbon Reduction Commitment (CRC).

Starting at 2pm and finishing at 6pm these sessions are designed to provide the latest advice and information on these two vitally important issues.

(See page 22 for dates and locations. Venues to be confirmed.)

They will set out the reasons why credit and carbon reduction have become such important issues.

And will combine short presentations, a panel Q&A session plus a focused range of exhibitors will be available to talk to.

The event will be supported by the leading credit insurers, large energy suppliers (British Gas, Shell, npower and EDF/British Energy), and the Regulator, Ofgem.

For more details or to book you place email: [Sandra.barradas@meuc.co.uk](mailto:Sandra.barradas@meuc.co.uk)

## British Gas signs up to Prompt Payment Code

BRITISH Gas Business has officially signed up to the Prompt Payment Code, a Government move to speed up payments. The decision reinforces its commitment to businesses through its support service, SAVE.

The code, devised by the Institute of Credit Management, means signatories commit to paying on time in accordance with the terms agreed at the outset. Code signatories will give suppliers clear guidance on payment procedures, telling them promptly if there is a reason for a delay - with information on how to complain.

SAVE aims to support British Gas' customers with a more flexible approach to managing their costs and debt through advice and practical help on a range of no-cost and low-cost energy efficiency measures.

Kanat Emiroglu, Managing Director of British Gas Business, said: "We believe that we are already meeting the guidelines of the Prompt Payment Code, which will help to provide greater certainty of cashflow to our suppliers. The decision demonstrates that we understand the pressures business customers - and suppliers - are under. We are committed to support all customers through this difficult period.

As part of SAVE, customers can get a free online audit of their energy consumption by logging on to [www.britishgas.co.uk/business](http://www.britishgas.co.uk/business) and clicking on the Energy Saver's Report link. This helps them evaluate how much they are spending on energy annually and will benchmark their efficiency rating relative to other businesses of their size and type.

The report offers hints and tips on ways to reduce consumption through both simple behaviour change and by investing in energy efficiency technologies.

Other key components of the initiative include:

- 1) A dedicated Expert Credit Solutions team to help advise, support and resolve debt problems.
- 2) Advice on how to reduce consumption via a dedicated account manager plus access to a tailored energy assessment (Green Businesses) from a trained energy assessor.
- 3) Energy Savers Packs: products include standby savers, energy saving light bulbs, radiator panels, and a 'Save the Worker Pack' that includes posters, stickers and collateral to remind staff of the steps they can take to reduce energy consumption.
- 4) Smart meters: to give real-time visibility of what energy is being used and where.

## Carbon compressors to recover energy

ATLAS Copco has introduced a carbon zero range of air compressors equipped with advanced heat recovery systems proven to recover 100 per cent of the electrical energy input in the form of hot water. The compressors can, as a result, dramatically reduce energy costs for a wide range of industries.

The innovation provides effective heat transfer, within specific design conditions, of relative humidity so that a considerable proportion of electrical power input can be recovered in the form of hot water at 90degC. This provides significant benefits for industries employing hot water or steam within process operations such as food and beverage, pulp and paper, chemicals and power plants.



## Acting on climate change

Diversified technology company 3M has been awarded the Carbon Trust Standard after taking action on climate change by reducing the carbon footprint of its UK operations.

The Standard is the world's first carbon award that requires an organisation to measure, manage and reduce its carbon footprint and actually make real reductions year-on-year.

Pip Frankish, 3M's Sustainability Manager said: "As a company committed to doing business in the right way, cutting carbon is a priority for us. It helps the environment and also delivers tangible bottom-line benefits.

"We have already cut our carbon emissions from our UK operations by 5.6 per cent over a three-year period and are committed to making further reductions in the future."

Worldwide, the company reduced its greenhouse gas emissions by 62 per cent over the period 1990 to 2007.

## Energy deal signals wind of change

TARMAC is set to lead the way in its industry by pioneering an innovative contract to source renewable wind energy, which is set to deliver both financial and environmental benefits. The company is the first quarrying and construction products business to sign a landmark Power Purchase Agreement (PPA), which will see it buy discounted renewable energy directly from the producer, Nuon Renewables - now part of Vattenfall Wind Power UK - and sell it back to its agreed retailer, npower.

Nuon's windfarm at Pendine Sands in south-west Wales will provide around 14.3 GW hours/year of power to Tarmac.

## Manufacturers see low carbon as a priority

A NEW report reveals the development of a low carbon economy is not only a key issue for manufacturers, but can assist them to cut costs. 'Low Carbon Report' says the majority of low carbon initiatives introduced in this sector have generated cost savings. However, it also highlights that the majority of manufacturers are focusing on reducing the energy costs of their existing equipment, prior to incorporating renewable energy resources into their operations.

It also suggests that some green initiatives require further development and guidance on adopting them to become universally viable.

The majority of investments in low carbon initiatives have resulted in cost savings. And 87 per cent of those surveyed achieved savings through the implementation of carbon emission reduction strategies. Three quarters experienced savings through accurate monitoring of energy consumption and of those that reduced waste and water consumption, more than 80 per cent experienced economic benefits.

Jeff Whittingham, Director of Business Solutions, British Gas Business, said: "The report highlights that cost saving is the key motivator among manufacturers for implementing energy efficiency measures, particularly at this time.

"Our Energy360 team has worked with many organisations to develop an energy management strategy central to their core business, helping them reap the financial benefits and gain a competitive advantage in the marketplace. From our extensive experience we know that savings of 10 per cent or more are highly achievable."

## First positive energy office structure opens

The Elithis Tower in Dijon, France, designed and constructed as the world's most environmentally sound building, has just been unveiled. Touted as the first positive energy office structure, the tower creates more power than it uses. From design to material and user behaviour, the office block applies the latest sustainable development technologies.

Materials were chosen according to their global environmental impact. The exterior is made of wood and recycled insulation, while aluminum, which strongly impacts on the environment, was used sparingly.

Bay windows were selected to bring in natural light. To complement this, a special nomad was designed to guarantee a comfortable level of light is available without excess artificial illumination.

To take advantage of solar energy (warmth and natural light) without the associated inconveniences (excess heat and blinding brightness) a solar shield was designed to allow natural light to enter with excess heat and blinding light filtered out.

Office energy emissions (from computers, photocopiers, lights, people...) are recovered, saved, harnessed and reused.

The Elithis Tower is the first active environmental laboratory of its kind and scientists, researchers and universities are invited to visit and evaluate the information collected in this project.



The environmentally friendly Elithis Tower.

## Consumer 'back lash' expected as energy companies post 'significantly higher' profits

Independent energy consultant McKinnon & Clarke is forecasting a consumer backlash as energy companies line up to announce 'substantially higher' profits, as in the case of Scottish and Southern Energy.

The firm, which purchases in excess of £1 billion of energy each year, has slammed what it considers a 'national scandal' with energy companies reaping huge rewards on the back of unjustifiable prices.

Since summer 2008, wholesale gas prices have dropped from a peak of over £1 per therm to 36p. Electricity prices have fallen from £90 per MWh to less than £40.

Energy consultant David Hunter said "The failure of the suppliers to pass on the massive reductions in energy prices, which they have been enjoying for nearly a year, is approaching scandal proportions.

"E.ON and ScottishPower have recently made small reductions to niche tariffs, but they don't change the overall trend for, what we consider are unjustifiably high prices.

"The Energy Retail Association has tried to defend their members' pricing structure with a series of smoke and mirrors. However, all will be revealed when the 'big six' suppliers announce their profit and dividend figures. No amount of spin and blaming ancillary costs will cover up for the fact that these private companies are enjoying huge and increasing profits paid for by businesses in the UK."

The consultancy is calling on the Government to step in to force through price cuts.

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3M ACCR ready to connect to offshore wind farms.

## HELPING ADDRESS RENEWABLE ENERGY DEPLOYMENT

Regulator Ofgem has identified three main barriers to renewable energy deployment. A shortage of turbines, access to the high voltage transmission system and planning objections.

3M ACCR helps address the latter two barriers and its launch in the UK coincides with the current £15 billion tender process from Ofgem and the Department of Energy and Climate Change for new cabling to connect offshore wind farms.

It is said the system could help remote outposts of land-based power networks near a new offshore wind-farm to be upgraded from their low capacity, end-of-the-line role. In turn, this could contribute to them becoming the start of a high capacity network flowing in the opposite direction to the National Grid. By using existing transmission routes, no new land permissions would be required.

It is claimed to have the strength and stiffness of steel core conductors, but weighs half as much and is able to continuously handle 210 degrees Celsius with considerably less sag than traditional conductors.

Using 3M ACCR could avoid the need for rebuilding or addition of new substations and it does not require the height of existing pylons to be raised to increase clearance levels

## Major European wind power contract

Wind Prospect's consultancy division has signed a five-year contract to provide development and technical services to GE Energy. The company will begin by managing the development of over 700MW of wind power projects within Poland, Bulgaria, Sweden and Romania, with further schemes already identified.

David Groves, Head of Advisory Services, Wind Prospect said: "The agreement accelerates our plans for further expansion into Europe. It is one of a growing number of non-exclusive consultancy agreements we have in place, and we will continue working with new and existing clients."

## Energy awards

**THIS year marks the 10th anniversary of the Energy Institute's Awards, honouring the very best in excellence and innovation within the international energy industry. The winners will be revealed at an Awards dinner, hosted by Gabby Logan, BBC Sports presenter, to be held on 19th November, at the Sheraton Park Lane Hotel, London.**

## LEADING THE WAY IN CARBON CLEAN UP

National museums and Marriott Hotels are dominating the list of organisations signed up to the fourth Carbon Clean up Campaign. They are leading the way in reducing the amount of carbon emitted from their buildings.

The Natural History Museum, Tate Galleries and the Science Museum are all taking part in the annual carbon reduction campaign being run by the Chartered Institution of Building Services Engineers (CIBSE), while a growing number of Marriott Hotels including those in London, Leicester and Bristol branches are also signing up.

Other organisations dedicating their time to energy saving activities over the coming weeks are BBC Wales, Transport for London, EDF Energy, London Fire Brigade and the Maritime & Coastguard Agency. Industry representatives include CABE, Arup, BDP and HLM Architects, while the Prime Minister's Office and Communities and Local Government have also shown their support.

**Series of afternoon Executive Briefings (from 2pm until 6pm) covering the financial implications for your business of the lack of credit and the Carbon Reduction Commitment.**

**17th November - Central London  
18th November - Heathrow  
19th November - Birmingham  
24th November - Manchester  
25th November - York  
26th November - Bristol**

## NOTICE BOARD

**8th December  
Energy Meeting  
Westminster, London**

**8th December  
MEUC Christmas Networking  
Reception, House of Commons,  
London**

To book your place at these essential one-day meetings call Sandra Barradas now on 020 8578 0466 or Fax on 020 8575 1415 or email on [sandra.barradas@meuc.co.uk](mailto:sandra.barradas@meuc.co.uk)

You may be as surprised to hear this as I was, but the Carbon Reduction Commitment plans put in place by the Government won't work. Apparently, some bigwig let his 6-year old daughter look at the proposals and she applied some secret art that Government officials aren't privy to - in this case, maths - and it doesn't add up. I know, I was shocked as well.

Thankfully, they're doing something about it. At this point, you probably deserve a warning; you aren't going to like this next bit. They haven't completely scrapped the fundamentally flawed, impractical, unfair, and confusing system altogether. They've just expanded it. Now, instead of the threshold being 6,000MW hours (by half-hourly metering across given sites, yadda yadda), it's going to be 1,000MW hours. To this news, I say this: Oh, good. I can't see how that could possibly cause problems.

Well, except for the question of when these new additions to the happy CRC trading scheme family are going to be expected to be compliant by. Are they going to filter into the system a few years later, or will they be joining with everyone else? If the former, isn't that going to play silly buggers with the value of carbon, as the market size, demand, and so forth will all suddenly drastically change when they do join? In the case of the former, isn't that just grossly, unbelievably unfair and impractical?

Oh, and one other problem. I'm probably just quibbling, really, but I must ask; what about the fact that, even with this expanded scope, we won't come even remotely near the targets we've been set? Why, in other words, are we buying into a scheme that in a very real, fundamental way, doesn't work? As I said, perhaps I'm just being picky. It just seems, on the grand scale of successful solutions, a bit like burning down your house because you locked yourself out and wanted to get at the keys.

So, a year and one massive kneejerk reaction on from the first Last Word rant about the impracticalities of the CRC and the situation is even worse than it was to begin with. There have still been no provi-

# CRC: WILL IT EVER ADD UP?

Energy commentator Steve Miller puts on his green-tinted spectacles to check out the latest non-specific proposals by the Government to 'oblige' Britain's large energy users to reduce carbon emissions.

sions put in place for companies that had the good sense to try and be green before the commitment was made. These progressive role models of modern industry are going to be massively penalised by the targets, because they've already made all the practical and/or affordable steps they can to cut emissions.

A worryingly large number of organisations still don't really understand how the whole thing works. Some are even still unaware that they need to register their meters despite not having to participate in the scheme. The population question hasn't been answered. The only two significant answers we've been given are that company directors will risk prison if they don't make sure their company complies, and the indirect answer that no, the system is terminally flawed.

The depressing truth is that the Government's tacit admission that the scheme won't work to cut CO<sub>2</sub> emissions

by anything like the amount needed has reinforced what critics have been saying all along; it isn't about doing something constructive and worthwhile about the problem, it's just about looking like you are. Nothing has changed about the method of application, nor how it is thought through in the first place. All that's happened is the scope has been widened, so more people are blighted by ineffectual, bureaucratic, red tape.

What is really needed is for someone with some political influence and an ounce of sense to point out all the problems with the scheme and get it scrapped. Replace it with something else. Maybe legislation requiring companies to produce a certain percentage of their power through renewable sources. Building more nuclear power plants so we aren't as reliant on oil, coal, and gas. There are dozens of measures they could take that would be fairer and more effective.

But they won't, for all the wrong reasons. Firstly, the whole 'commitment' part of the CRC has sold us into obligations towards Europe. Secondly, seeing as they couldn't be bothered to put much thought or effort into it the first time around, I very much doubt they can muster enough to do it again. Finally and most significantly, they can't admit they are wrong and stupid to the public. In politics, for some reason, there is the mystifying belief that no matter how obviously and demonstrably wrong you are, so long as you don't admit that then no-one will ever notice.

“The depressing truth is that the Government's tacit admission that the scheme won't work to cut CO<sub>2</sub> emissions by anything like the amount needed has reinforced what critics have been saying all along; it isn't about doing something constructive and worthwhile about the problem, it's just about looking like you are”



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