

## ADVANTAGE GREEN



# Cut the bill

NATURAL POWER UK  
Solar thermal energy

There are two ways to reduce your energy consumption: use less, or make your own. Here are some suggestions about where to start



BY RACHEL ENGLAND

**W**e may have the "greenest government ever", but companies keep spending more on energy.

Coal imports are up 23 per cent compared with 2010, oil demand is up 2.3 per cent and the cost of electricity to industry is up by 3.5 per cent, and it's only going to get more expensive. Plus, electricity generated from renewable sources has increased by 35.1 per cent, from a relatively small base.

For companies, reducing reliance on the electricity grid guards against price rises and possible future shortages. That can be done in one of two ways: reducing the quantity of energy you use, or generating your own.

## Using less

Companies are often told to turn off lights and keep an eye on thermostats, and many are enjoying significant savings from these easy measures. But for others it's not enough. Smaller companies may find that installing double-glazing and investing in cloud computing yields long-term results, whereas manufacturers may benefit from thorough housekeeping and maintenance.

Investment in 'add-on' technologies such

as voltage optimisation is another way commercial properties are reducing their energy use. According to Gareth Jones, managing director at Carbon Zero UK, most appliances run at 220 volts, yet power supplied to premises is usually 240 to 245 volts. Voltage optimisation units can help save up to 10 per cent on electricity bills. Depending on the property, the technology can cost up to £1,000, but offers "year-on-year savings, which can be significant if a business uses a lot of power".

Many organisations offer energy auditing and monitoring services, and subscribing to such a scheme can offer structured guidance for businesses that otherwise don't know where to begin. Lloyd Reed, technical director at Natural Power UK in Barry, recommends appointing an energy champion for each building. He says: "If you measure what you are doing now against what you were doing before, you can monitor any improvements."

S&C Electricity Company in Swansea was accredited by CEMARS (Certified Emissions Measurement and Reduction Scheme) in 2011, and thanks to a programme of auditing and measurement, can plan while understanding its energy consumption. "We were surprised by what our biggest costs were," says managing director Andrew Jones. "We wouldn't have been able to begin tackling

those without an energy audit. And we know now that even though in the coming year we have more people coming into the business, we won't be increasing our energy use thanks to the recommendations made to help reduce our consumption."

Programmes like CEMARS help to create awareness of energy use. Research indicates that only 17 per cent of UK workers have received guidance on energy efficiency. But the Carbon Trust estimates that businesses could save up to 10 per cent on their bills simply by promoting awareness among staff.

## Make your own

Until recently, companies looking to generate their own power would generally consider two options: solar panels or wind turbines. Cuts to incentives such as feed-in tariffs have caused many to feel uneasy about installing such technologies as the prospect is no longer as financially appealing.

But solar and wind power are still viable options for many, says Carbon Zero UK's Gareth Jones. "With solar, the price of the technology is coming down, so payback times are reduced, and until the review at the end of this year, wind tariffs are attractive."

Many companies have installed such technologies when their premises are unsuitable, he says, so returns have been poor. "The key is making sure your location or building is right for the technology," he says. "Otherwise it's a fruitless exercise."

He cites a wind turbine fitted to a sports arena in North Wales as an example: "I've only seen it move once – I was convinced it had broken down. Clearly, it wasn't a good investment."

Even so, solar panels and wind turbines can do a lot to enhance a company's green

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credentials. "Businesses will get more value from their marketing and corporate responsibility than from the project itself," says Gabriel Gallagher from Sustainable Energy, a Cardiff design and development consultancy. "This can provide a decent pay-off for many. In Swansea, there's a small business that practically had to install solar PV (photo-voltaic) because its biggest client had a strong environmental agenda and wanted its suppliers to follow suit."

Another trend will be using waste heat to cool buildings, according to Reed at Natural Power UK. Solar thermal units harvest the sun's power throughout the year, so when demand for water heating is lower, in the summer, the same energy can be used instead of air conditioning. Reed's company is looking at commercial solar thermal applications including a way to melt honey in food production. The Renewable Heat Incentive (RHI) could open up technology such as heat pumps, according to Reed. But he says: "We want an easier process for clients to apply for the RHI. There is a lot of red tape."

His fellow director David Emery says commercial funding providers could be more helpful: "It's difficult to get asset finance for these systems. Small businesses don't want to tie up cash doing it."

### Wylfa partners pull out

Energy businesses EON and RWE NPower have withdrawn plans to build a nuclear power station at Wylfa on Anglesey. The companies behind the Horizon joint venture cancelled plans for a plant next to the old nuclear power station there. Costs and global economic conditions were cited as reasons for the change of plan. Rosatom, the nuclear operator owned by the Russian government, signalled an interest in picking up the power station contract.

Gallagher says the RHI is well suited to manufacturers, sawmilling and forestry businesses that have access to secondary wastes that can be used in biomass. "One of our sawmilling clients has invested £5m in biomass heating and is looking at a return in just three years. Then they'll benefit from 17 years of (inflation-linked) income."

He suggests that smaller businesses could do well from the RHI, too. "As long as their business fits the physical criteria – space on site for the boiler and room to accept delivery of wood pellets. Businesses with a consistent heating profile, such as hospitals and care homes, or rural businesses relying on oil, would have a particularly strong case for using biomass."

But the RHI is operating on a first-come, first-served basis. "A lot of people missed out on solar feed-in tariffs because they were too slow," says Jones. "If people want to take advantage of the RHI they need to move quickly. There's always the chance that, like other schemes, it will be pulled in the future."

### Future energy mapped out

First minister Carwyn Jones has unveiled the Welsh Government's new energy policy, with commitments to improve the planning system and power connections. In "Energy Wales: A Low Carbon Transition", the Welsh Government says it will improve the planning system and review other consenting regimes associated with energy developments to simplify processes by April 2013, when the new Single Environment Body will be set up.

The Welsh Government also pledged to help businesses navigate planning and consenting processes and ensure that information held by the Welsh Government and its agencies would readily accessible. And it will press for greater devolution of energy consenting powers and set out how it will use the powers to put in place a "single, streamlined and transparent process" for Wales.

On energy infrastructure, the document says the Welsh Government will work with business to identify the strategic developments in the grid required in Wales. And it will work closely with the private sector "to help ensure its investment in Wales' grid matches our energy ambitions and delivers economic and community benefits while minimising the impact on the natural environment".

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### Low Carbon, High Yield and Great Taste!

Food security is one of the major challenges facing the world today. Low carbon, resilient crops are an essential part of a sustainable future. A PhD research project between Bangor University and the Sarvari Research Trust is now working to contribute to knowledge in this area with the objective of developing a new, commercially available tomato crop. The team are working on a variety of blight resistant tomatoes which are optimised for outdoor production in a northern European climate. The resulting crops will require no synthetic fungicide, no heated greenhouses and will reduce food miles through a shorter supply chain. The impact on CO2 emissions from these changes to tomato production will be significant and with the company's previous experience with potato crops, offers a great opportunity for commercialisation.

**Sector:** Low Carbon  
**University:** Bangor University  
**Company:** Sarvari Research Trust  
**Student:** James Stroud

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