

Angus Robertson brought voltage power optimisation technology to the UK

Electric performance

PowerPerfactor CEO Angus Robertson tells FMX why voltage management technology can help solve the carbon reduction problem

THERE AREN'T TOO MANY PEOPLE WHO CAN CLAIM THEY STARTED A WHOLE NEW INDUSTRY, but Angus Robertson is one. Having grown disillusioned with life in the City, he was travelling in the east when he was introduced to an emerging technology called voltage power optimisation in Japan. Immediately recognising the possibilities, he had the technology adapted for European voltage levels and launched it in the UK in 2001. His company powerPerfactor now employs around 100 people and the technology is widely adopted in the UK.

Named the 33rd fastest-growing private company in the UK in 2009, it has just

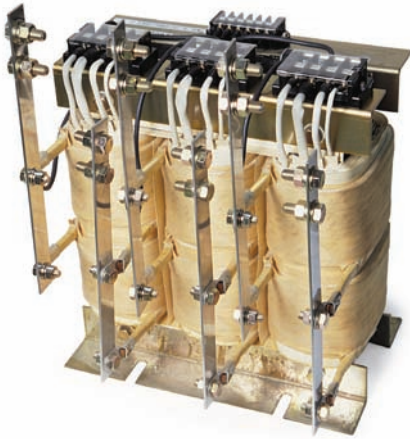
won 'best low carbon product' in the National Green Business Awards and is a finalist in the National Business Awards for its growth strategy. This dynamic growth is down in no small part to rising energy prices, corporate social responsibility and the newly introduced Carbon Tax.

'FM is huge for us,' says Robertson. 'We see the industry as the heartbeat of the built environment with the capacity, by adopting a broad green initiative, to drive energy efficiency in UK plc faster than any other route. We have several partnering agreements with FM service providers who are promoting our technology to their clients, and we are seeing huge interest in

the technology from embedded FMs.'

When the technology was brought to the UK from Japan in 2001, he points out, nobody had ever heard of a custom-made technology that would reduce your electricity consumption at the point of supply. 'We really did create the now loosely-termed 'voltage optimisation' market,' he says. The technology is set to redefine electricity supply as it's suitable for 90 per cent of commercial buildings and generates average savings of 13 per cent on electricity bills. So far, powerPerfactor has saved its clients over £60m and 400,000 tonnes of carbon dioxide.

'FMs are under pressure to reduce ▶



PowerPerfector reduces energy use and costs by up to 20 per cent by optimising electricity supply voltage

costs and carbon within the buildings they manage,' says Robertson. 'They face choices over technologies that they have little prior knowledge of.' Supply-side installations, he reckons, hold more risk than demand-side ones; if low energy lights or motors fail it can be worked around, but if the supply goes down 'tens of thousands of pounds can be lost, and the damage to the organisation escalates dramatically. As one FM said to me: "If I save a few thousand pounds in energy I get a pat on the back, if my building fails I get the sack." So it's important that the technology you integrate into the main power supply artery to the building has a history of absolute reliability.'

PowerPerfector has installed units in over 130 local authorities and 16 different government departments as well as leading UK corporates like Tesco, Hilton, Waitrose and Lloyds Banking Group, among others. 'They see voltage power optimisation (VPO) as uniquely reliable in the voltage management market and essential in their strategy to enhance supply security as we move towards the energy gap.'

While the recent government spending review has meant huge cutbacks in revenue to the FM industry, he points out that FM can play a pivotal role in reducing costs and, more importantly, carbon. The need of both the public and private sectors to reduce carbon emissions opens up a huge opportunity for the industry to fill the revenue gap with added value services in delivering energy efficiency to clients.

Voltage optimisation: a buyer's guide

Within the voltage management market there are nearly 30 different options. Each technology is slightly different and many boast high savings. So what criteria should facilities managers use when purchasing

voltage management solutions?

Voltage reduction and voltage optimisation are broadly the same thing. They involve a reduction in voltage with little improvement in power quality as a result – this is reflected in their lower pricing. While they will save some money, these technologies underperform compared to voltage power optimisation that improves power quality and eliminates transients.

Robertson also advises looking at:

- **Simplicity** As a rule of thumb, the fewer points of failure the better. Beware of overcomplicated solutions with multiple different components. If it requires fan cooling it is not efficient. If it has moving parts, be careful – these are a failure point. If a bypass is recommended – why? Might it fail?
- **Bells and whistles** Meters on equipment can be helpful, but if they say how much you are saving do not believe it – the figure cannot be computed without comparative data.
- **Measurement and verification** A savings analysis should come in two parts: a detailed savings plan, in which the site is analysed and a methodology for determining the savings agreed upon, and a savings report, which quantifies the avoided energy use. Any measurement and verification strategy that does not have these two ingredients could be open to ambiguity, or worse, abuse, as the savings analysis will be thrown together after the energy conservation measure has been implemented.
- **Measurement protocol** International Performance Measurement and Verification Protocol (IPMVP) is the most widely used and recognised M&V protocol in the world. You can be sure savings calculated using IPMVP will be auditable and accurate if conducted by qualified practitioners. Does the supplier have one?
- **Price** The recent government spending review risks putting best value procurement at risk and raises the spectre of 'lowest cost wins'. This is a real danger – do not be drawn into a cheaper deal. Conduct a full technical review of any technology offering in this sector.
- **Benchmarking** Make sure that the technology has been tried and tested. Ask for case studies and testimonials and

Case study: Environment Agency

The Environment Agency is synonymous with environmental protection, and as manager of the CRC Energy Efficiency Scheme, it must be seen to implement energy efficiency best practice. Trials of electricity supply management solutions have led the agency to roll out powerPerfector technology across its portfolio of 35 sites.

Julian Feasby, head of internal environmental management at the Environment Agency, says: 'We are delighted with the increased energy security as well as the financial and carbon savings we are seeing from the rollout of voltage power optimisation across our estate. The technology has proved robust and reliable.'

Annual savings

kWh: 10.46%

CO₂: 253,770 kg

£: 36,404

Case study: Amey

In July 2008, Amey installed voltage power optimisation at the Sherard Building, the company's FM headquarters in Oxford. As a result the business has seen a 15 per cent reduction in energy use and has signed a partnership deal with powerPerfector to take VPO to its clients.

Andy Candelent, account manager, built environment at Amey, says: 'Since installation, powerPerfector has helped Amey reduce both energy bills and carbon emissions at our head office.'

Annual savings

kWh: 15%

CO₂: 69,500 kg

£: 8500

make sure you choose a technology that does what its maker is telling you it will. Ask to speak to clients of the company you review.

- **Reliability** Make sure that the company's technology has an unblemished reliability track record, otherwise you are risking business continuity for your clients. Also, check the financials of the product seller – is it financially secure enough to pay out on its guarantees? **fmX**

Further Info

www.powerperforator.com