

**THE BUSINESS CASE FOR GREENER BUILDINGS**

Solutions

# TOTAL CONTROL

Building energy management systems aim to make companies more able to reduce their emissions. **Lisa Wilkinson** explains why the key to sustainability in business is total control.

**W**hile keeping green for most businesses across the UK may involve day-to-day recycling and using less paper, many often overlook the amount of energy consumed or, in most cases, wasted by the building itself.

With the government's goal of a 20% reduction in carbon emissions by 2012 compared to 1990 levels, businesses across the UK need to reduce their building's energy consumption by a third to meet a quarter of the government's target.

Last month, the Government started its first mandatory emissions trading scheme, the CRC Energy Efficiency Scheme (formerly the Carbon Reduction Commitment), which calculates an organisation's annual energy usage and fines excessive users.

Government-promoted automatic meter reading (AMR), or smart metering, helps to identify site consumption patterns to (AMR) is the key. Smarter energy management involves sub-metering, controls and educating staff; businesses can identify and implement the quick wins to carbon reduction, as energy is often wasted through the inefficient management of equipment and building performance.

Smarter energy management can identify inefficient use of equipment, such as air conditioning set-point controls, air conditioning working in conjunction with heating, out-of-sync time clocks and staff interaction with the building and systems, all of which combine to create inefficiencies within a building. Better control of heating, lighting, air conditioning, refrigeration and compressors can improve energy reduction targets by between 15% and 30%.

Sustainability in business is about efficiency, and technology is the key to keeping on top of your building's energy use and working towards a more efficient building and systems. Building energy management systems (BeMS), such as



t-mac Technologies' BeMS aims to make control activities align with a company's energy reduction strategies and targets.

The t-mac system is remotely accessible and enables users to manage single or multiple sites through a top-end software package. The software provides a simple interface to manage and amend controls strategies across an entire estate at the touch of a button. The energy analysis software incorporates AMR with real-time mains and sub-metering data for single or multiple sites to identify, quantify and verify energy reduction activities.

#### **BeMS in action**

A recent example of the t-mac system in action is its successful installation for 800 high street stores of one of the UK's largest banks. t-mac installed a box with multiple site capacity that acts as a virtual window into every site, taking on the role of a BeMS by monitoring and controlling equipment, helping to cut carbon footprint. From any location in the world

users are able to view what is happening at each site at any time by simply logging on to the Internet.

The aim of the installation was to reduce the bank's carbon footprint by 30% by identifying and eradicating unnecessary energy use within each of its branches.

By monitoring and metering energy consumption, t-mac provides the bank with instant live and online reports of each unit's energy efficiency rating.

Through this monitoring, the system noted issues that were contributing to excess energy consumption in the branches:

- temperature points being altered by users – being set too high or too low
- the current time clocks for lighting and HVAC being overridden or set incorrectly
- air conditioning and heating left on at the same time or when a unit is vacant
- air handling units operating even when stores are closed
- monitoring and controlling heating and air conditioning levels
- programme internal and external lighting to coordinate with opening and closing times
- ensure fresh air is only brought into the store when required through the air handling units

Reducing carbon emissions need not be laborious. By ensuring that sources of activity are used only as and when required, businesses can make significant positive changes to how they run.

Awareness and control of energy use can significantly reduce energy expenditure, considerably boost profitability and satisfy the demands of government legislation – easily. By employing a BeMS and ensuring a control strategy is in place, businesses can demonstrate a commitment to the environment and boost their bottom line.

*Lisa Wilkinson is director of t-mac Technologies Ltd*