

## A BEMS is the key to unlocking energy savings

***Organisations are under increasing pressure to lower their carbon emissions and also have to make sure that they reduce expenditure wherever and whenever possible. A Building Energy Management System (BEMS) can help achieve these objectives and more.***

The targets for carbon reduction in the UK are deliberately tough and the Department of Energy and Climate Change (DECC) aims to achieve the targets stated in the Climate Change Act 2008. When compared to 1990 levels this equates to a reduction of at least 34 per cent by 2020 and at least 80 per cent by 2050.

As they are responsible for 17 per cent of the UK's carbon emissions, the nation's 1.8 million non-domestic buildings are at the very heart of meeting this challenge and according to a study conducted by the University of Reading, office buildings are the second most energy intensive, CO2 emitting building type in the commercial sector, after retail. Meanwhile, through its Energy Controls Audits, Trend has concluded that 39 per cent of energy is wasted within the workplace.

No matter what their size, organisations require greater visibility and transparency of their energy consumption and need access to relevant data. BEMS facilitate this and a fully integrated solution can have up to 84 per cent of a building's energy consuming devices directly under its control by monitoring services such as heating, ventilation, air conditioning (HVAC) and lighting.

The good news is that most buildings will already have a BEMS installed. The bad news is that in some cases it will not have been properly maintained and will be ineffective.

A BEMS needs to be flexible, evolving with the building and those who work in it. When a BEMS is first commissioned it is configured around an existing building layout and occupancy patterns. These can change over time and incorrectly configured time clocks and set points, new layouts and repartitioning can lead to some areas being too warm or too cold.

Human behaviour can also have negative repercussions. For example, someone moving electrical equipment, such as a photocopier, near a temperature sensor increases the temperature around the sensor, which will then call for cool air to reduce it. The cool airflow will affect adjacent controlled zones and people will feel colder and use electric fan heaters to warm up.

In order to optimise a BEMS, a Trend Energy Controls Audit can review the way a building is being used and identify ways to make improvements, some of which can be implemented immediately. Following the survey, a report will be submitted containing an executive summary that offers an easy to understand overview of the findings.

The report will be followed by a detailed financial summary that enables analysis and investment decisions to be made by, for example, outlining energy savings in pounds rather than kilowatts and looking at return on investment (ROI) forecasts. The report also provides information that addresses the impact of the recommendations in relation to current environmental information and legislation, along with a prioritised summary of activities that will realise greater energy savings.

By using data metrics, analysis, and powerful diagnostic tools, information on energy activity can be used to limit environmental wastage. Smart strategies can also be implemented by monitoring usage patterns and demand response, so that plant uses less energy during high peak periods. This is particularly useful for those with resource challenges who still wish to initiate operational improvements on an on-going basis through defined service level agreements (SLAs).

A BEMS should never be considered a fit and forget technology, as getting the best out of it requires an on-going programme that implements new technology, reconfigures components and takes into account changes in a building. Therefore, it pays to work alongside a proven and trusted manufacturer, whose systems are designed to accommodate new technologies and changing user requirements. Trend, or one of its Trend Approved Partners, can deliver a range of tools that enable an organisation to operate as cost effectively as possible.

A properly maintained BEMS will ensure that building services operate in strict accordance with demand, thereby avoiding unnecessary use of energy. It is only with full visibility of how and where energy is being consumed that full control of a building can be achieved – as the saying goes, ‘if you can’t measure it, you can’t manage it’.