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BUSINESSES' ENERGY AND WATER CONSUMPTION CUT THROUGH PILOT PROJECT

Small businesses look set to cut costs and energy consumption by up to half thanks to a pilot project Leicester's De Montfort University (DMU) has been involved with.

New gas, water and electricity meter reading equipment trialed in 32 small and medium enterprises showed as much as a 30 to 50 per cent reduction in consumption, simply by taking data every half hour and making small changes on the back of the findings.

Widespread use of the intelligent metering system would not only cut costs and usage, but reduce the environmental impact of harmful greenhouse gas emissions.

DMU, Leicester City Council and nine European partners from five countries are involved in the European Community-supported aIM 4 SME's (Automatic Intelligent Metering for Small and Medium-sized Businesses) two-year project.

The scheme has helped a number of the city's businesses shrink their energy and water costs because of the new found knowledge of when consumption typically peaks.

Barney Sturgess, Managing Director for Sturgess Cars in Leicester, said: "What gets monitored can get managed – that is the greatest benefit of the technology provided by the project.

"We have managed to reduce our energy consumption through a programme of efficiency savings including measures as simple as the use of a plug in socket timers, as well as through more substantial investments such as a new air conditioning plant."

He added that he had confidence that any problems with utility usage would be quickly picked up in hours rather than days or weeks.

Mike Bartoszewicz from Leicester's Ramon Hygiene Ltd, said: "Energy Management/Leicester Energy Agency have provided an excellent service and their metering has proved to be very useful in monitoring energy waste."

Across several of the companies, energy and water had typically been used unnecessarily, but the intelligent metering allowed for a greater level of usage detail than with traditional monthly billing.

DMU's Professor Paul Fleming, said: "Without the detailed half hourly energy and water data, businesses didn't realise how much they were consuming at night or weekends.

"Businesses were almost immediately able to see the effect of changing heating controls and could detect if they had a gas leak."

The monitoring systems within the 32 businesses were connected to two central databases hosted each by DMU and the City Council. From the data, water leaks and energy waste were identified, energy consumption patterns were brought into line with the times buildings were being used and light and heating systems were switched off out of working hours and at weekends.

Not only that, it became easy to spot poor air conditioning units, timer controls for heating and lighting could be adjusted to best fit and temperature controls on heating systems were installed.

ENDS

Notes to editors:

For further information or to request an interview with Professor Paul Fleming, please contact De Montfort University's Press Office on 0116 257 7674 or email news@dmu.ac.uk.

To find out more about aIM4SME's European partners, visit <http://aim4smes.com/en/Home>.

Statistics and technical information:

- 32 small and medium enterprises (SMEs) from different economic sectors participated in this project:
 - 8 manufacturing companies
 - 5 business units
 - 4 service-related businesses
 - 3 temples or worship centres
 - 3 University premises
 - 2 charities (voluntary sector)
 - 2 public houses (pubs)
 - 1 hotel
 - 1 bakery
 - 1 leisure centre
 - 1 medical centre
 - 1 car retailer
- Since October 2008, 31 data collection systems to record half-hourly data of gas, electricity or water consumption were installed in the SMEs and 1 portable electricity monitoring device for 1 SME.
 - Monitoring systems are connected to one of two central databases hosted by Leicester City Council (Self- Databird) and De Montfort University (DMU- Databird) via a low powered radio network. Other systems are temporary, stand-alone installations (OCR – based)¹ which require data to be manually downloaded from data loggers on site.
- 31 feedback visits and training sessions were conducted between October 2008 and November 2009.
 - During these training sessions, the main features of gas, electricity and/or water consumption were discussed with the SME. The aim was to examine with the SMEs the operational schedules of their major equipment and the patterns exposed by the data analysis. In addition, key items of equipment were identified and general observations were explained. This process provided the SMEs with significant insights into the values of consumption data and helped them to identify the magnitude of energy/water wastage in their consumption profiles. These sessions also provided advice on energy management practices and a set of recommendations according to the observed consumption patterns with operational details.

¹ OCR is the acronym of Optical Character Recognition

- 5 SMEs were examined in detail (case studies). Analysis of these SMEs showed that reductions in gas and electricity consumption between 30 and 50% can be achieved through simple interventions that can take place in a short period at a low cost, such as:
 - Continuous monitoring of half-hourly consumption data to identify energy waste or water leaks
 - Analysis and understanding of the energy consumption profiles to identify how energy consumption patterns can be adjusted to match building occupancy patterns
 - Changes in energy management practices, for example, switching off lighting and heating systems over the weekends and out of working hours (e.g. overnight)
 - Installation of temperature controls in heating systems (equipment that measures the outdoor temperature and adjusts the heating system to match the difference between outdoor and indoor temperatures for an internal comfort environment)
 - Adjustment of existing timer controls of heating and/or lighting systems
 - Adjustment of poorly commissioned equipment, such as air handling systems



AIM 4 SMEs

AIM 4 SMEs – Automatic Intelligent Metering for Small and Medium Sized Enterprises

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AIM 4 SMEs is a Europe-wide project to demonstrate the potential for energy savings from automatic intelligent metering in small/medium-sized enterprises.

The project involves nine partners from five countries (Austria, Hungary, Poland, Portugal and the UK), including businesses, local/regional energy agencies, an association of municipalities, universities and a utility company. www.aim4smes.com

Intelligent Energy  Europe

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