

Small Businesses reduce their energy and water use through intelligent metering

The European Commission, through its Intelligent Energy Europe programme, supported the 'Automatic Intelligent Metering for Small and Medium-sized Businesses' (aIM4SMEs) (Contract ref. EIE/07/136/SI2.466711), project involving partners in Austria, Poland, Portugal, Hungary and the United Kingdom.

The project involved supporting small/medium businesses to use automatic detailed (half hourly) electricity, gas and water metering technology (intelligent metering). It demonstrated the potential for energy savings from automatic intelligent metering by identifying potentially high consumption and then taking action to reduce it.

Thirty-two businesses from the UK participated in this project, including manufacturing, worship centres, charities, public houses, hotels, leisure and medical centres, bakeries and car retailers among others. A further 38 small businesses in the rest of Europe also participated.

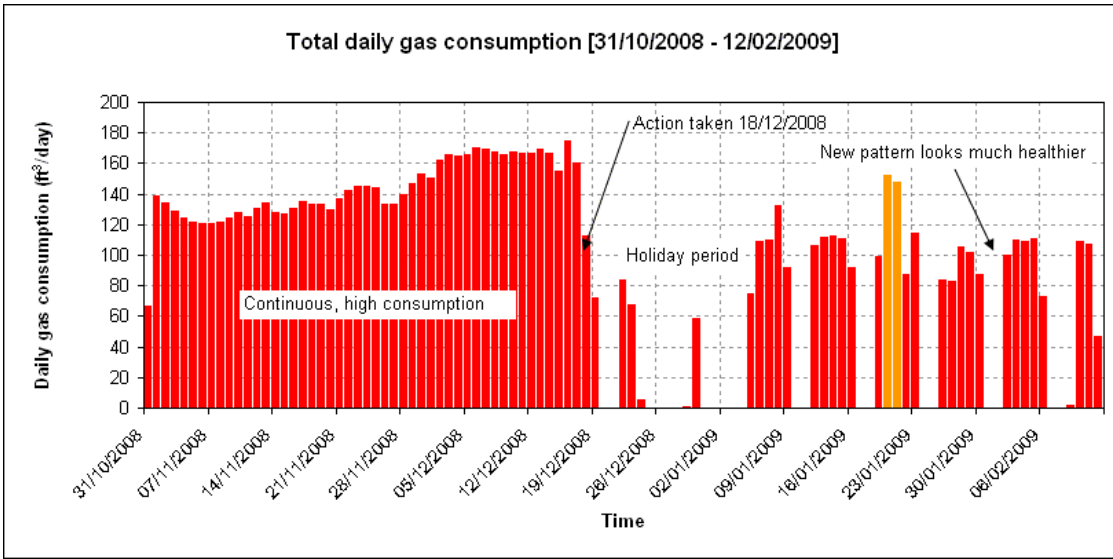
Data collection systems were installed in the SMEs to record half-hourly data of gas, electricity or water consumption. The monitoring systems are connected to one of two central databases hosted by Leicester City Council and De Montfort University via a low powered radio network, or via temporary, stand-alone installations based on optical character readers (OCRs) which require data to be manually downloaded from data loggers on site.

The resulting detailed energy and water use data were analysed to identify energy saving opportunities. This information helped with providing energy awareness training to staff of the business and in providing any on-site energy survey.

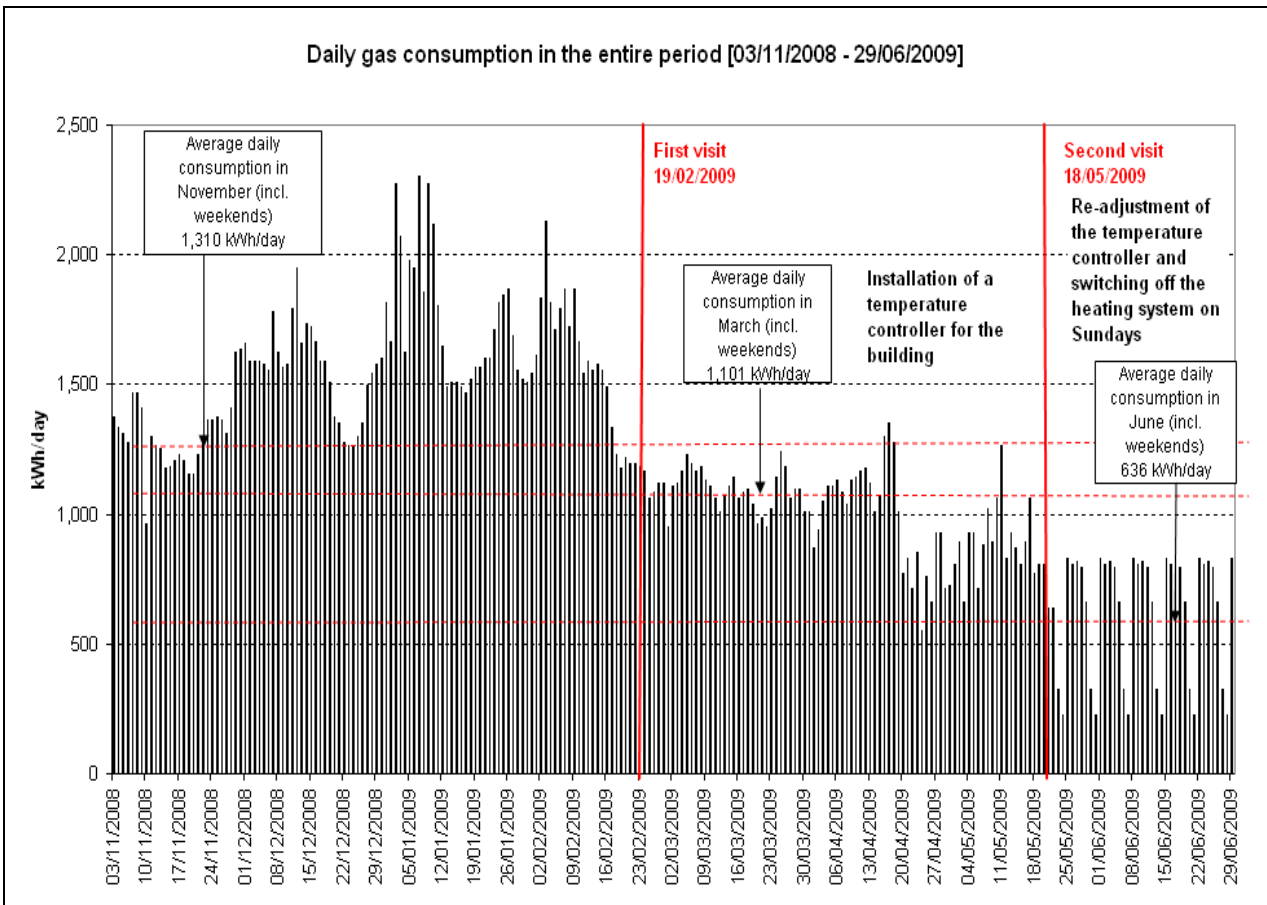
Visits and training sessions were conducted between October 2008 and November 2009. During these training sessions, the main features of gas, electricity and water consumption were discussed with the SME. The aim was to examine with the SMEs the operational schedules of their major equipment and the patterns shown in the data analysis. In addition, key items of equipment were identified. This process provided the SMEs with significant insights into the magnitude of the energy and water consumption and helped them to identify the opportunities for energy and water savings. These sessions also provided advice on energy management practices and a set of recommendations based on the consumption patterns from the intelligent metering.

Examples of the recommendations highlighted during the training sessions based on the initial analysis of half-hourly gas consumption data were:

- Check the heating system time and temperature controls.
- Check if there are any areas of the building which are being heated more than necessary
- Suggest Improvements to the heating controls.
- Examine higher overnight consumption on some days and whether there might be any savings opportunities.
- Analyse the reasons for the gas and electricity base loads every day and on weekends
- Review control of electricity loads to ensure consumption is minimal during scheduled unoccupied periods
- Some businesses were examined in detail. The 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.



The graph shows that changes in energy management practices (switching off lighting and heating systems over the weekends and out of working hours) on 18th December resulted in a substantial gas consumption reduction.



The graph shows that an initial visit on 19th February resulted in energy savings. However, a further visit on 18th May identified a heating control fault. When this was corrected, further energy saving were realised.

Energy waste used to be difficult to identify without the cost and inconvenience of regular energy surveys. Now, the intelligent metering system helps identify excessive consumption early and enable businesses to correct them quickly. The project has helped Leicester small business reduce their energy consumption, carbon dioxide emissions and energy costs.

For more help with energy and businesses in Leicester contact the Leicester Energy Agency on 0116 299 5153.

For more information on De Montfort University work on intelligent metering contact **Paul Fleming** on 0116 257 7963.



AIM 4 SMEs

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

Leicester Energy Agency (Leicester City Council)
2-4 Market Place South, Leicester. LE1 5HB. UK
Tel. +44 (0)116 262 4698
Fax. +44 (0)116 299 5137
Email info@energyagency.co.uk

De Montfort University
The Gateway, Leicester. LE1 9BH, UK
Tel. +44 (0)116 257 7963
Email pflaming@dmu.ac.uk



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**

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.