AUTOMATIC METER READING AND DASHBOARDS

Background
[Automatic meter reading](#) (AMR) is the automatic collection of consumption, diagnostic and status data from energy meters. That data is then transferred to a central database for analysis and subsequent display. [Energy Display Dashboards](#) are simply an accessible way of presenting that energy consumption data. They can show energy reduction activity from renewable resources, or display a site's A-G energy rating, as well as motivating building occupiers to practice and maintain energy saving behaviours.

t-mac action points
- AMR provides opportunities for cost reduction through energy management – but data which isn't displayed properly has little value.

- Dashboards aid building occupier buy-in, but must be simple and remain relevant to ensure audiences continue to take notice.

Lisa Gingell, director of t-mac Technologies Ltd, says:
AMR and Energy Display Dashboards are intrinsically linked – AMR provides the data, and the dashboard provides visibility of that data. Properly-presented, insightful metering and monitoring data can allow building occupiers to see the results of their actions in real time, vastly increasing the chance of creating meaningful buy-in.

First, though, AMR must be set-up. The AMR process appears simple, but is in fact rather complex. Meters are read by meter interfaces, which translate data into digital information to facilitate transmission, as well as attaching a code to the meter data so that it is attributed to the correct subscriber. The data is then picked up via digital transfer from the meter interface, to a device controlled by the meter reader. Data collected is downloaded and can also be automatically transmitted to the database through [automatic data transmission protocols.](#)

Technological advances have expanded the scope of AMR activities from their traditional role, which was similar to sub-meters. Other possible uses for AMR include monitoring and maintenance-checking for leaks and theft, detecting meter tampering. Consumer profiling can also highlight peak and lean periods of use, providing empirical data on the effects of energy saving devices and mindsets, including assessing the impact of renewables on energy use and energy spend.

Displaying AMR data through a dashboard, as discussed earlier, paves the way for creating commitment to an energy management programme from building occupiers. US university Yale, for example, have installed large touch screen dashboards which provide students with real-time information about energy consumption in two of their residential sites. Accompanied by an educational campaign about residential energy consumption, the monitors provide students with direct and immediate awareness of the effects of their consumption decisions displayed as gallons of gasoline, monetary cost, or hours of use for microwaves or laptops. Users can also log in to a website.

The project, part of Yale's Greenhouse Gas Reduction Commitment, is helping the institution reduce its carbon emissions to 10 per cent below 1990 levels by 2020 – a 43 per cent reduction from 2005 levels.

Those who don't employ dashboards in an advanced and innovative way like this, though, must question how long occupier buy-in will last if the dashboard is seen as a static part of the office furniture which fails to adapt to its environment. In short, dashboards have to be relevant if they want to succeed, and they must present new data regularly in a way which engages, rather than disengages, building occupiers or employees.

For example, dashboards which can be viewed through website portals have been running for many years, and are a great first step. But after one, two, or even ten log-ins it is easy for those employees or building occupiers, even at Yale, to simply ignore the information and what it means to them.

For true dashboard relevance we must look to a combination of software and hardware which can work in tandem with an energy management strategy. That mix could include interactive, engaging and educational visible dashboards in offices, canteens or reception areas, intranet-accessible display portals, or even dedicated smartphone apps.

Energy managers have a vital role to play here, motivating building occupiers and driving behavioural change through target-setting and even inter-department competitions to reduce energy use – anything which keeps employees and / or occupiers engaged and can drive their involvement with the energy efficiency of their own environment.

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