

THE PSYCHOLOGY OF ENERGY MANAGEMENT

Background

It is PEOPLE who can really make energy management technology work. Buildings, processes and changing the way people behave towards energy management are all part of a must-needed holistic approach. Encouraging staff to commit to managing energy can be influenced by providing real-time data along with result-driven feedback. Research shows that harnessing psychology 'tools' when interacting with employees on energy management can lead to savings of around 10 per cent on top of conventional metering, monitoring and controls.

t-mac action points

- Software such as Energy Dashboards and interactive graphical displays, which present real-time energy consumption data on staff-friendly display screens, can significantly help improve staff awareness of (and buy-in to) energy management.
- Historical feedback – not simply real-time data displays – can later help employees understand how their actions have helped save energy.
- aM&T (automatic metering and targeting) and BeMS (Building energy Management Systems) must be fully integrated into energy management practices, because it is impossible to guarantee behavioural changes made by staff to cut energy use will last.

Lisa Gingell, director of t-mac Technologies Ltd, says:

The latest metering, monitoring and controls technology can be key to reducing energy consumption, but challenging the established habits of building occupiers forms the bedrock of modern energy management thinking and practice.

What people do in the workplace, and the demands they make on environmental conditions within the workplace, defines how much energy will be consumed by that building. While business-critical operations like machinery can't be turned off, other high-load consumers – such as lighting and HVAC – are often at the mercy of building occupiers. In essence, people don't use energy – equipment and buildings do. To change the amount of energy used, it is vital to change the way that equipment or buildings are operated.

An awareness of the 'psychology' of energy management is a vital weapon in the battle to save expensive resources. How, and more specifically why, energy is used in the way it is can impact directly on energy spend. Defining and acting on these factors can reduce that spend by around 10 per cent.

A recent [consultation paper](#) by the Energy Services and Technology Association advocated “a more holistic and continual approach... to demand-side energy management”, taking into account not only assets within a building, but also the “people factor”, and how technology can influence and educate building occupiers.

Software such as [Energy Showcasing Dashboards](#), which present real-time energy consumption data back to staff on public display screens, can significantly help to improve staff awareness of energy consumption. They show instantly how occupiers impact on a building’s energy consumption and cost, and then educate occupiers on how they can make changes and actively participate in energy reduction activities. Viewed later, that feedback also educates staff about how their actions helped save energy.

Bringing in constant controls and monitoring will ensure that any deviation in the behaviour patterns of staff doesn’t impact on energy costs and consumption, as any potential negative behaviour will be identified immediately by the monitoring, then counteracted by the controls.

In a [1977 study](#), psychologists Clive Seligman and John M Darley found real-time energy displays reduced energy use among homeowners by more than 10 per cent. Their experiment gave 29 households a way of visualising their electricity usage, and balanced this against a control group. In 1992, [Ontario Hydro](#) in Canada used a continuous display electricity use monitor called a “Residential Electricity Cost Speedometer” and showed that homes with the system installed reduced their electricity consumption by almost 13 per cent.

These results answered questions around the motivation and commitment of users to energy reduction – ideas which had earlier been posited by Abraham Maslow in his 1943 [Hierarchy of Needs](#). In it, the psychologist discussed how low-level needs like food, water and heat must be met before others can even be considered.

Linking employees’ need for a comfortable work environment with energy reduction measures through results-driven feedback, therefore, could provide meaningful savings – and show psychology and energy management are intrinsically linked.

Ends