

Behaviour change not climate change

While the emphasis in energy efficiency is often on technology, behavioural change is a vital factor in the equation

Jes Rutter

The urgent need for action to meet the 2030 targets of the Intergovernmental Panel on Climate Change and the more recent recommendations from the UK's Climate Change Committee has now been widely recognised. Reducing energy consumption and associated carbon emissions is one of the leading ways that organisations can contribute to this objective.

While attention currently focuses on equipment and technology because they can lead to significant energy savings, there is hard commercial evidence to show that changing behaviours to embed and maintain a good energy culture can easily make savings equal to or in excess of traditional engineered improvements (bit.ly/ESTAbeh). These opportunities to change behaviour are largely ignored, but could prove to be a significant part of the solution.

Behavioural change means saving energy by transforming practices to reduce or avoid consumption. This includes obvious measures such as turning off devices from

lights to air conditioning, setting conditions at the right level or time, and identifying simple low-cost energy improvement projects both for organisations as a whole and the individuals they comprise. But good energy behaviour goes far beyond this: it is about senior management decision-making, standards, policies, plans and, importantly, optimising the technology used.

Many organisations believe that they are already behaving responsibly by investing in a building management system (BMS), for example; but it would be wrong to assume that such a system is managing energy efficiently after being installed, and most are in fact wasting vast amounts.

Continual monitoring and review of the BMS is required – including control strategy, settings, schedules, weather compensation, sensor accuracy, the accuracy of user interfaces, system useability and day-to-day operation and maintenance – to ensure its ongoing overall efficiency. A health check and system optimisation

review can often identify the potential for substantial energy savings.

Both at commissioning and on an ongoing basis, technology needs to be optimised in terms of four key factors: wastage, efficiency, levels and time (WELT). These are not matters addressed effectively through technology alone. Organisations that optimise WELT will not only save significant energy but in turn improve individuals' energy efficiency behaviours in their homes and communities, as well as enabling other productivity improvements throughout those organisations.

We know that training can be an extremely effective way of engaging personnel to reduce energy use and costs in an organisation. When the culture, structure and processes of an organisation also change, engagement in, awareness of and commitment to savings achieved through training is reinforced and maintained.

A programme to embed a good energy culture may include the following steps:

- developing a best-practice energy policy
- engaging senior directors to ensure buy-in at the top level
- resultant communication and project plan
- reviewing and modifying energy management systems and procedures
- identifying training needs, including training the trainers to embed significant knowledge in house where possible
- including energy awareness as part of induction training
- creating a structure of energy roles and responsibilities among staff
- running a tailored energy training and behaviour change programme
- supporting recruitment of personnel with dedicated energy roles
- developing an energy action plan
- tracking the implementation of projects
- mentoring staff with energy-related roles to run the projects
- developing and implementing an energy communications programme.

Better behaved

Evidence from case studies of programmes in parts of organisations suggests that behavioural change can enable around 50 per cent of total potential energy savings; the other 50 per cent comes from technology, but typically represents 99 per cent of the resource input and policy attention from organisations and government. So a shift is required, and soon, to ensure that the savings available from behavioural change are realised.

At one global power systems manufacturer, for instance, a behavioural change programme significantly reduced energy consumption quickly after implementation. A longer-term evaluation demonstrated that additional savings of nine per cent had resulted from raising employee awareness as part of the programme. The reduction in energy consumption was measured using the International Performance Measurement and Verification Protocol (IPMVP), a globally recognised methodology.

Good behaviour is now embedded in the organisation, and consumption continued to fall in the year after the programme was implemented. The nine per cent savings from behavioural projects were the same

Changing behaviours to embed a good energy culture can make savings equal to or in excess of engineered improvements

as those from a new factory LED lighting scheme that the company had installed. However, the internal and external costs of the behavioural savings were £30,000, with a payback time of just three months, compared to the £480,000 spent on the lighting, which took almost four years to pay back.

This is a rare example of the success of such a programme all the same. One of the main barriers to the widespread adoption of holistic behavioural change programmes is the paucity of such case studies to encourage decision-makers to take action. It is for just this reason that the Energy Services Technology Association (ESTA) has launched the Energy Conscious Organisation (bit.ly/ESTABChWg).

The objective is to promote behavioural change as a significant contributor to energy savings and to make it an integral part of all organisations' energy strategies. ESTA's vision is that embedding such energy consciousness could get the UK at least halfway towards its clean growth target for energy efficiency by 2025.

The target could easily be exceeded by organisations adopting codes of practice to take a more structured approach. Until now, even the best case studies only covered at most 25 per cent of the potential areas of behavioural change, whereas all elements could be joined into one cohesive initiative. The potential is significant because this opportunity remains largely untapped.

Evidence also shows that payback from behavioural change projects starts quickly and builds as they continue, and that they require relatively little investment, even including the cost of internal resources. The only major issue is that, unlike technical projects, they do not reduce energy use

overnight. Instead, behavioural change typically takes 12–18 months to be fully adopted, at which point savings become measurable. It also needs ongoing resource investment to maintain and improve energy-saving opportunities and outcomes.

The Energy Conscious Organisation's target is to provide 100 proven case studies for medium to large energy consumers using IPMVP methodologies by June 2022, which it conservatively estimates will save £12.5m per year on an investment of £9.5m. The potential savings from more widespread implementation could therefore be significant.

Other financial benefits not defined here include reductions in the need for infrastructure – resulting in lower capital costs and embedded energy use – and the subsequent optimisation of consumption for individuals in their homes and other communities as described above.

While the Energy Conscious Organisation is pushing to raise awareness and provide a model for embedding and maintaining a good energy culture there is no reason to wait, and every advantage in acting now. ESTA's Independent Energy Consultants Group (bit.ly/ESTA-IECg) includes a number of organisations qualified and experienced in running behavioural change programmes that can be consulted on the right approach for your organisation. What more could you be doing now to slow climate change?

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