"Energy in Buildings and Industry and the Energy Institute are delighted to have teamed up to bring you this Continuing Professional Development initiative"

MARK THROWER MANAGING EDITOR

energy institute

Behaviour change for low-cost energy savings

James Brittain, director of the Discovery Mill and freelance energy consultant

More organisations are appreciating that behaviour change can be one of the quickest and lowest-cost ways of delivering energy savings and environmental performance improvement at scale.

However, many organisations still struggle with their change programmes and become disillusioned as energy savings don't result or because they quickly fall away over time.

Creating lasting change is usually not a simple process. There is no silver bullet that works for everyone. All organisations are different. They may have to use several different techniques to make it work.

As there are hundreds of different change models and techniques, this CPD article concentrates on drawing out some common principles using the ISO 50001 continual improvement framework of Plan, Do, Check, Act.

Learning objectives include:

- explain why behaviour change is important;
- identify common behaviours, concerns and probable consequences;
- plan for the catalyst for change; and
- consider techniques to deliver energy performance improvements.

Growing pressure

Pressure to improve energy performance is growing all the time. UK energy prices are double what they were a decade ago. The Carbon Trust estimates that most organisations can save 10 per cent off their energy bills through no or relatively low cost measures. These rely on changes in people's habits and behaviours to be successful.

The European Environment Agency has also presented evidence of the potential, suggesting 5-20 per cent savings are possible by engaging and involving people for better energy performance.

The Carbon Disclosure Project reports that behaviour change is one of the most cost-effective carbon measures undertaken by top energy intensive companies in terms of internal rate of return (>72 per cent) and return on investment (124 kgCO2/$ spent).

As the UK spends over £23bn a year on energy, this represents significant potential for UK plc to reduce our environmental impact, enhance our overall competiveness and safeguard employment.

Off the back of the new global commitment to limit climate change (Paris, December 2015), we have a lot to do in a short time. People solutions are able to deliver significant energy reductions at scale and are usually quick to implement as generally they don't rely on capital investment.

Not only are these measures often quick and low cost, but they also help to right-size, reduce the cost and enhance the ROI of subsequent investments in energy demand and supply technologies.

Behaviour change is a critical part of an integrated approach and, in line with the energy hierarchy, would normally be prioritised first.

Avoidable energy waste

Most energy managers realise there is often significant, avoidable energy waste inherent in nearly all facilities and operations; this seems inevitable at the moment.

More often than not, there is the technical potential to achieve good levels of efficiency but it is the behavioural factors that have been the limiting factor, from decision making to the actions of everyone who work throughout an organisation. There are many cases where technology is simply not delivering anticipated energy savings in practice.

Reasons are often down to the behaviours, perceptions and psychology of the people involved.

One helpful way to think about behavioural risks is the 7 Dragons of Inaction, set out by the psychologist, Robert Gifford. According to Gifford, these include the following:

- limited cognition: people tend

to only have the capacity to think about short-term objectives; "Energy efficiency is not something I can deal with";

• ideologies and beliefs: people set their views to justify why they shouldn't take action; "the boss won't like it."

• comparisons with other people: we naturally compare ourselves to others and justify why they should do more; "if other people aren't doing anything, why should I?";

• sunk costs: it's usually hard to buy into something that may conflict with previous efforts and investments; we've tried it before, it didn't work.";

• discredence': there's a natural mistrust or denial to new things; "I don't believe the new technology works";

• perceived risks: could be social, psychological, financial or physical; "it wouldn't be normal for me to be a green champion."'; and

• limited behaviours: some people offer tokenism; "we recycle a lot, isn't that enough?"

The underlying fear of change, for making mistakes or being wrong often means that many of us go for the safe decision, we over-provide or we rely on others and hope our buildings and systems are going to be energy efficient. This means that many services end up with elements that consume energy but do not add any value for the customer – this is what we call avoidable waste.

The natural instinct to resist can also mean there is no board level support, a lack of responsibility, no money and/or limited interest in optimising energy performance.

Improved strategies

To help manage these risks, our strategies need to be better at linking up the commercial, technical, operational and people aspects of the organisation and change.

The first step is to develop the strategic catalyst to energise change. It is essential that top management is on board and demonstrates its commitment by defining energy policies, appointing an energy management representative and by providing the financial and other resources needed.

Fundamental planning requirements are laid out by ISO 50001:

• analyse energy use and consumption, identify areas of significant energy use and the variables that affect these and prioritise opportunities for improving energy performance;

• establish energy baseline(s) and energy performance indicators so changes in performance can be monitored and measured with credibility; and

• put in place objectives, targets and plans across the organisation that will lead to continually improving performance.

Energy performance is defined by 50001 as 'measurable results related to energy efficiency, energy use and energy consumption'.

The focus is on why energy needs to be consumed, encouraging people to eliminate avoidable waste and rethinking services so energy is used more efficiently in line with customer requirements.

Change management gurus, like Dr John Kotter of Harvard Business School, tell us that typically seven out of ten change programmes fail or fall short of their objectives.

To avoid this, change models encourage us to understand the context of where you are, where you need to be, how you get there and how you stay there. This involves highlighting three aspects:

• readiness for change: reviewing available resources and knowledge required to deliver lasting change;

• barriers to change: business drivers, people's values and attitudes that may prevent change; and

• stability of change: risk factors that could push energy performance back to business as before.

Involving others at this stage is often a good way to start raising awareness. Create buy-in for the business case and co-develop plans, for example by using workshops, interviews and/or surveys, and by involving opinion leaders through activities like energy walk-rounds and demonstration interventions.

To get people excited, you often need a big idea and a compelling vision. How will you motivate people? What's going to make it fun? This is not necessarily going to be energy saving or environmental improvement in itself! To help prepare for this, we can tap into some of the classical motivational theories of Maslow, McGregor, Herzberg, etc.

Heirarchy of Needs

Maslow's Hierarchy of Needs, for example, can be useful to target co-benefits that help inspire people to get involved. Rigid interpretation of his model suggests that once a need is satisfied the person moves onto the next level. However, it is also true that most people's desires, at any time, can include elements of all the motivational drivers:

1) biological: health and fitness benefits, a more comfortable working environment;

2) safety: improved skill sets and performance, work security;

3) belongingness: being part of a community of practice, enhanced morale;

4) esteem: competition, achievement, recognition; and

5) self-actualisation drivers: challenge, new experiences, etc.

A strategy that taps into co-benefits, as well as promoting saving energy, carbon or cost, is often a good recipe for success as it creates a good Win/Win for the people involved.

Successful organisational change relies on individuals discovering change for themselves one person at a time.

ISO 50001 follows this premise:

• it requires everyone to be aware of the importance and benefits of improved energy performance and how their activities impact on energy use;

• for those who impact on significant energy use, significant energy users (SEUs) need to be competent in their knowledge and ability and received training as necessary; and

• organisations must provide a process whereby anyone can make comments or suggest improvements.

This applies to anyone working for or on behalf of the organisation. 50001 promotes their involvement using activities such as empowerment, recognition, training and rewards and participation.

Delivering action and change through a network of everyday champions is a tried and tested approach. Everyday champions would normally include SEUs, ambassadors (who aim to influence top management) and key connectors (who look to influence everyone else).

Energy management team

An energy management team is also a requirement of 50001. A strong team often includes a good mix of expertise, credibility, local staff and senior managers.

Everything communicates during change; even doing nothing tells colleagues what you expect them to do! It is important to communicate well to gain and build trust. Everyday champions have a key role in communicating the vision and leading by example.

energy institute
For details on how to obtain your **Energy Institute CPD Certificate, see entry form and details on page 28**

We know awareness type campaigns, by themselves, often have low impact. They need to be part of an integrated approach.

One useful model to help understand change at an individual level is Prosci's ADKAR model of five building blocks: its starts with Awareness; then comes the decision to get involved, Desire; after desire comes Knowledge and Ability to make change; and for change to be sustainable, Reinforcement is needed.

We need to communicate to achieve each of these to establish successful change.

The challenge is usually keeping communications simple, using everyday and consistent language and positioning across all the channels (digital, video, print, live events, etc.) and be mindful of technical language when it is necessary to use it.

Developing a common language is often required. For example, relating stories out of actions being taken and related successes, is often a more interesting way of communicating without falling into the traps of greenwash or too much jargon.

To kick start a change programme, it is good practice to focus in on a few objectives and inject some urgency into the process.

Pareto's 80/20 principle states that 80 per cent of the results will come from 20 per cent of the effort. We target quick and easy results to generate some green sparks, for example using tactical initiatives such as Green events, Energy treasure hunts, gamification and 100-day energy savings challenges with focused support, training and toolkits.

Just do it, 'JDI', is also a mantra used by techniques such as Kaizen, Lean or Six Sigma to help create the momentum needed.

Typically, for energy intensive organisations, 5-10 per cent of the workforce can be SEUs. A person is an SEU if either they have hands on control of significant energy use or have decision-making capability to impact significant energy use. This includes procurement and design colleagues as well as operational staff.

Nudge, prod or persuasion

Target behaviours are often about delivering customer service as efficiently as possible and taking pride in doing a good job. Nudge, prod or persuasion techniques are generally more effective than command and control approaches but success will depend on the circumstances.

Change is an incremental process; it takes time to change habits and we need to continually refine the approach as we go. To do this, monitoring and feedback from SEUs tells us about energy performance, motivations and actions. Using a mix of techniques (questionnaires, workshops, etc) often gives a good authentic picture of how we're doing.

Nudge theory

Nudge theory, for example, can be used to help review existing influences and target unhelpful ones. This is about analysing choices available and making the better ones more attractive to do. Nudge interventions are typically indirect, free choice, respectful, positive and about self-discovery.

ISO 50001 'checking' specifies:

- periodic review of variables, energy performance indicators (EnPIs) and assessment of the effectiveness of action plans, activities and models;
- ensuring measurement techniques are credible and accurate; and
- investigation and response to any significant deviations in energy performance.

Ultimately, continual improvement is demonstrated by measurement and verification at high level. If progress hasn't been made, then the approach needs rethinking.

To understand the impacts and benefits of changes in behaviour, this also usually needs to be done bottom-up against established energy baselines as well, for example by comparing service provision (e.g. heating, lighting) against use (e.g. occupancy). This is now becoming more practical as local wireless sensors become more cost effective.

Delivering energy savings is hard work. Even if there is high motivation, we know 'hard things' are often not prioritised. By making actions easier to do, there is more chance 'doing the right thing' becomes a habit and business as usual.

If people have access to progress reports and EnPIs that relate to them, e.g. through dashboards, trackers or apps, this helps them make quicker and better decisions, reinforces behaviours and maintains momentum. Checking looks to review the effectiveness of indicators and support processes to ensure they're helping to oil the whole process for the people involved.

It helps if activity is also integrated with other business requirements and systems. Approaches such as Six Sigma and Sociotechnical systems can help review how joined up it is with, for example, quality, technology, processes and other goals.

Everyone's a champion

To effectively embed an energy culture throughout an organisation, every single person eventually needs to become an everyday champion. This isn't going to happen overnight. Some people will be committed but it will take time for others to come on board. The system needs to cope with people looking to push boundaries in a managed way. Link different people together for better collaboration.

Corporate governance structures, rolling initiatives and rewards are often included in programmes to help make change stick. It is important to periodically recognise the efforts of everyday champions and celebrate success to help reinforce what's going on.

To continually develop and reinforce the system, ISO 50001 focuses on:

- periodic management reviews to make sure activities are suitable, adequate and effective; and
- updating the energy policy, EnPIs, objectives, targets and plans and allocation of resources, roles and responsibilities, as required.

Experience has shown that it's often better to act for gradual change rather than step change. Set realistic goals, learn from what you've done and then put in place a new set of goals for the next iteration of change. This philosophy is as much about energy leadership as energy management.

John Kotter, for example, is a proponent of a leadership approach to change. His eight-stage model is another useful guide when it comes to reviews: Is there a compelling clear vision? Do you feel a sense of urgency? Is there a strong steering team in place? How can we communication better? Is action being empowered? And delivering quick wins? What's next? Is success being reinforced?

Kotter talks about a lead and learn legacy of developing skill sets and performance. This philosophy relies on developing a culture of action-based continual learning, innovation and leadership with a clear line of sight on the bigger picture.

This article has highlighted some key principles for successful behaviour change:

- make it desirable;
- make it focused
- make it easy'
- make it continual, but, most importantly;
- make it yours'.

The right approach will depend on the organisation, current levels of energy performance and the culture. Ultimately, the aim is to become confident that systems and practices are delivering best value for customers with minimal avoidable energy consumption and waste.

Contrary to belief, behaviour change is not rocket science but it is hard work. You need your own blend of leadership and management that comes from a combination of good understanding, strategic thinking and a hands-on approach. You will know what works best for your organisation. Systems, like ISO 50001, can help you manage change in a systematic way.

References:

Energy management systems – Requirements with guidance for use, BS EN ISO 50001:2011

Achieving energy efficiency through behaviour change, what does it take? European Energy Association, EEA Technical Report 5/2013

Creating an awareness campaign, Carbon Trust Guide 56, updated 2013

Leading change, John Kotter, Harvard Business Review , first published 1996

For details on how to obtain your **Energy Institute CPD Certificate, see entry form and details on page 28**

CPD **SERIES 14 » MODULE 02 »** JUNE 2016

ENTRY FORM

BEHAVIOUR CHANGE

Please mark your answers on the sheet below by placing a cross in the box next to the correct answer. Only mark one box for each question. You may find it helpful to mark the answers in pencil first before filling in the final answers in ink. Once you have completed the answer sheet in ink, return it to the address below. Photocopies are acceptable.

QUESTIONS

1) According to the European Environment Agency, what is the potential energy saving of measures that target behaviour?

- ☐ 0-5%
- ☐ 5-20%
- ☐ 20-40%
- ☐ More than 40%

2) When would behaviour measures for energy savings normally be prioritised, in line with the Energy Hierarchy?

- ☐ Before investments in energy demand and energy supply technologies
- ☐ After investments in energy demand and energy supply technologies
- ☐ After investments in energy demand but before investments in supply-side technologies
- ☐ After investments in energy supply but before investment in demand-side technologies

3) By using Robert Gifford's 7 Dragons of Inaction, which one of these behaviours is the odd one out?

- ☐ "It's natural for me to design systems to be oversized"
- ☐ "The facilities department says we can't do it"
- ☐ "I rely on other experts or service providers to make decisions"
- ☐ "It would make me look stupid"

4) Who are the people we need to engage to energise change across an organisation?

- ☐ Top management
- ☐ Operations staff
- ☐ Everyday champions
- ☐ Everyone

5) What is the ISO 50001 definition of 'Energy Performance'

- ☐ 'quantity of energy applied'
- ☐ 'ratio of other quantitative relationship between an output of performance, service, goods or energy, and an input of energy
- ☐ 'measurable results related to energy efficiency, energy use and energy consumption'
- ☐ 'manner or kind of application of energy'

6) According to John Kotter, how many change programmes typically fail or fall short of their objectives?

- ☐ 10%
- ☐ 25%
- ☐ 50%
- ☐ 70%

7) According to Maslow's Hierarchy of Needs, which of these co-benefits would satisfy the highest level of Need?

- ☐ More comfortable working conditions, e.g. when energy efficient equipment is introduced into commercial kitchens
- ☐ Competition e.g. from tracking the number of energy saving ideas
- ☐ Improved fitness e.g. from riding a bicycle into work
- ☐ Better skills and performance e.g. from training everyday champions

8) What does 'SEU' stand for?

- ☐ Significant energy undertaking
- ☐ Small energy user
- ☐ Significant energy user
- ☐ Scalable energy undertaking

9) What is the acronym used by Prosci's behaviour change model?

- ☐ DAKAR
- ☐ ADKAR
- ☐ KARAD
- ☐ ADRKA

10) Which of the following is a fundamental requirement of ISO 50001 'Checking' process?

- ☐ Establish energy baseline(s) so changes in performance can be monitored and measured with credibility
- ☐ A process whereby anyone can make comments or suggest improvements
- ☐ Periodic review of energy performance indicators
- ☐ Periodic management reviews to make sure activities are suitable, adequate and effective

Please complete your details below in block capitals

Name ..... (Mr. Mrs, Ms) .....

Business .....

Business Address .....

.....

..... Post Code .....

email address .....

Tel No. .....

Completed answers should be mailed to:

The Education Department, Energy in Buildings & Industry, P.O. Box 825, GUILDFORD, GU4 8WQ

CPD **fundamentals**

THE CONTINUING PROFESSIONAL DEVELOPMENT PROGRAMME

How to obtain a CPD accreditation from the Energy Institute

Energy in Buildings and Industry and the **Energy Institute** are delighted to have teamed up to bring you this **Continuing Professional Development** initiative.

This is the second module in the fourteenth series and focuses on Behaviour Change. It is accompanied by a set of multiple-choice questions.

To qualify for a CPD certificate readers must submit at least eight of the ten sets of questions from this series of modules to EiBI for the Energy Institute to mark. Anyone achieving at least eight out of ten correct answers on eight separate articles qualifies for an Energy Institute CPD certificate. This can be obtained, on successful completion of the course and notification by the Energy Institute, **free of charge** for both Energy Institute members and non-members.

The articles, written by a qualified member of the Energy Institute, will appeal to those new to energy management and those with more experience of the subject.

Modules from the past 13 series can be obtained free of charge. Send your request to editor@eibi.co.uk. Alternatively, they can be downloaded from the EiBI website: www.energyzine.co.uk

SERIES 13

MAY 2015 - APR 2016

1 Heat Pumps
2 Industrial CHP
3 ESOS
4 Compressed Air
5 Refrigeration
6 Shading Systems
7 Transformer Technology
8 Solar Thermal Energy
9 Fuel Cells
10 District Heating

SERIES 14

MAY 2016 - APR 2017

1 Biomass
2 Behaviour Change
3 Energy Management Standards*
4 Air Conditioning*
5 Internet of Things*
6 Training for Energy Management*
7 Data Centre Management*
8 Metering & Monitoring*
9 Boilers & Burners*
10 Demand-Side Management*

** ONLY available to download from the website after publication date*

Level 2: Energy Management Professional (EMP)

Continue your professional development in energy management by undertaking a professiomnal qualification with the Energy Institute.

ABOUT THIS COURSE

Want further training? Gain all the knowledge and skills required of a professional energy manager and achieve a professional qualification with the Energy Institute's Level 2: Energy Management Professional 150 hr online course.

This course is new for 2016 and is currently available to pre-book. For further details and pricing please visit www.energyinst.org/level2 or contact education@energyinst.org.

energy institute