

NEW ENERGY WORLD

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The energy conscious organisation

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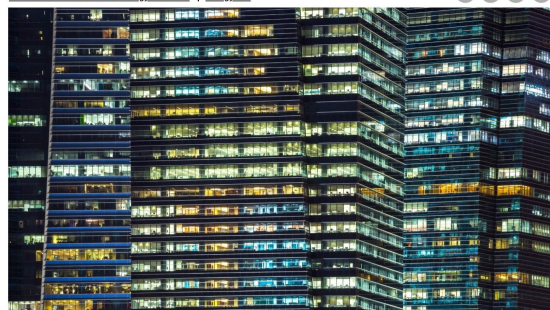


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Many organisations want to better understand how energy conscious they are and are seeking initiatives that allow them to evidence that their energy management approaches effectively involve their people. Jes Rutter, Managing Director for JRP Solutions, reports how the Energy Conscious Organisation (EnCO) initiative helps organisations to improve their energy efficiency.

What is the fastest and most cost-effective way of reducing energy consumption, energy costs and CO₂ emissions? The answer is through people in organisations. Reducing the impacts of climate change requires behavioural changes. We will not reach net zero without addressing the people factor.

The Energy Conscious Organisation (EnCO) global initiative aims to engage, empower and equip organisations and energy professionals to enable significant savings through people. It integrates employee engagement with technical opportunities to reduce energy consumption, costs and carbon emissions to accelerate the journey to net zero.

Who is behind EnCO?

Formed by the Energy Services and Technology Association (ESTA) with support from the Energy Institute (EI), the EnCO team has well over 100 years of combined energy management experience behind them and they want to share their expert knowledge with the rest of the world.

With the effects of climate change a very real threat and in the face of the huge uphill challenge that we face in getting to net zero, the team developed a framework for energy efficiency through behaviour change.

The result is EnCO – a framework for delivering energy savings using behaviour change principles at scale. It provides a low-cost, high-impact way to create lasting change and an energy efficient organisation.

EnCO Mission

EnCO has two core missions:

- Equipping industry energy professionals with the core skills to deliver behaviour change programmes that deliver savings.
- Engaging and empowering organisations with a framework for energy efficiency through people; saving costs and the planet.

Since July 2020, EnCO has worked with and trained many of the most experienced UK energy specialists, particularly Energy Savings Opportunity Scheme (ESOS) Lead Assessors and Chartered Energy Managers (the EI runs one of the **biggest registers** of qualified ESOS lead assessors). Some 164 are now Registered EnCO Consultants in behaviour change. This has been facilitated by creating the EnCO Matrix, EnCO website (that houses a number of case studies, continued professional development (CPD) learning modules and key resources) and the EnCO Academy, a community of practising consultants which meets quarterly.

There is now a major focus on supporting organisations to become EnCOs – and to award 'Registered EnCO Organisation' status to those with a proven track record in saving energy through people.

Why should an organisation become an EnCO?

In any net zero strategy, the first priority must be to reduce energy consumption. The fastest and lowest cost option of reducing consumption is to engage employees. The idea behind EnCO is that there is evidence of significant energy waste by most organisations across all sectors – often up to 50%. This means in many organisations energy efficiency savings of 25% can be achieved by technology solutions and a further 25% by people solutions.

However, 99% of the focus is on technical solutions and around 1% on behaviour. So, there is a large unbalanced application of resources to opportunity. Behavioural opportunities are simply not being recognised or applied.

One reason for the relatively low uptake on behavioural issues is that those providing technical and data solutions are unaware of the 'people potential' and/or are not equipped to provide solutions. This is recognised by the Department for Business, Energy and Industrial Strategy (BEIS) and the Environment Agency, which have said that few ESOS Energy Audit Reports included recommendations on employee engagement or behaviour change.

EnCO aims to galvanise the industry to employ behaviour change as one of the fastest and lowest cost options of reducing energy consumption at scale, as part of the first priority in any net zero strategy. To succeed, it believes that as an industry, we need to bring together 50–100 International Performance Measurement and Verification Protocol (IPMVP) proven case studies in behaviour change – to make it mainstream. The ultimate opportunity is to demonstrate that EnCOs are more sustainable, cost effective and collaborative in the way they approach energy management.

Rolls-Royce – Bristol Site

The Rolls-Royce Bristol site is the first UK organisation to be recognised as a Registered EnCO Organisation and the company is rightly proud of its employee engagement achievements in energy reduction over the last decade.

Its achievement demonstrates an easily replicable initiative in an industrial environment of raising employee awareness and on-site training. An 8.9% reduction in energy consumption was demonstrated after the first year of interventions.

The Rolls-Royce strategy included four key elements:

- Establishing an Energy Charter and Site Energy Policy led by senior management which set the vision and direction.
- A branded awareness-raising campaign describing the site's achievements but with new goals set, descriptions of typical opportunities with cost savings, and debunking energy myths. This was achieved with a series of innovative posters, banners and online information.
- A six-month long programme of training 'Energy Champions' from different representative areas from across the site. The training consisted of half-day sessions held every three to four weeks. This included practical advice on identifying energy savings in different areas and types of energy use such as lighting, controls, insulation, heating, cooling, HVAC (heating, venting and air conditioning) and compressed air.
- In-depth training sessions for relevant staff on how to identify and calculate energy savings, delivery of energy-saving spreadsheets, listing and prioritising opportunities with an emphasis on no cost and low-cost measures.

Using IPMVP techniques of measurement and verification the savings were confirmed to be 8.9% of annual energy consumption. For an investment of £30,000, the payback was only three months.

The programme has continued and momentum has been maintained with savings now at 14.5% – with further interventions to be made and plenty of savings still to be achieved.

Cheney School, Oxford

Cheney School is located in Oxford and has 1,500 pupils and 210 staff. It is the first school in the UK to achieve the coveted status of Registered EnCO Organisation.

The school began its journey in 2014 by installing three solar arrays with a rated electricity generating output of 90 kWp. This allowed a local not-for-profit organisation to sell the electricity generated to the school at a discount, to raise funds for energy efficiency and fuel poverty reduction projects within the local community.

When the school achieved 'Academy' status, the Finance Director took responsibility for procurement and the management of energy fell to a newly created post of Operations Director. Using half-hourly gas and electricity data, the school identified that:

- 27% of gas was consumed out-of-hours; taking into account pre-heating timings, this was thought to be high; and
- 37% of electricity was consumed between 22:00 and 06:00, when the school was unoccupied; this exceeded the normal baseload expectations of essential electricity use overnight.

The data was further analysed to compare gas consumption with external temperature. This allowed a baseline to be set, taking into account overnight and 'out-of-hours' baseload, against which consumption was monitored.

Energy waste was targeted and addressed by the following activities:

- Reviewing the building management system and controls for gas and electricity use.
- Focusing on operational behaviours of the significant energy users, including the operations, security and cleaning teams; the latter being a key driving force on achieving reductions.
- Allocation of responsibilities for key areas of energy use, including the adaptation of job descriptions and annual appraisals.
- Adjusting controls for evenings and weekends when the school let its premises to third parties.
- Responding to alerts when consumption exceeds expectations.
- Investing in sub-metering across the estate, funded by Year 1 savings.

The average annual electricity overnight baseload reduced by 19.5%, with overall savings for 'out-of-hours' periods totalling 29.7% compared to the baseline year.

By targeting 'out-of-hours' consumption systematically, the overall electricity consumption was reduced by 11% in Year 1, rising to a 16% reduction thereafter. Such 'out-of-hours' savings are easily replicable in most schools across the UK.

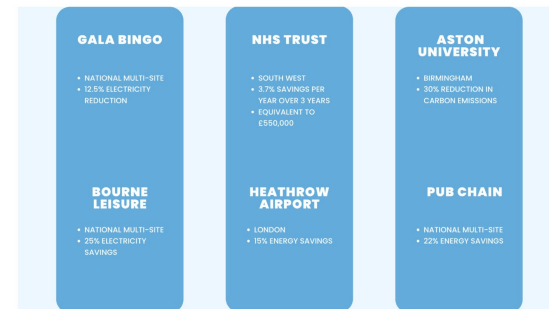


Fig 1: Some examples of EnCO case studies

Source: EnCO

Initiative first

EnCO is the first initiative of its type and is unique in its ambition. It is a comprehensive approach to achieve lasting savings through employee engagement. It takes a holistic and integrated approach by putting people at the centre of energy management. Its flexible process is based on key principles and is not prescriptive. Each behaviour change programme has to be tailored to an organisation, its culture, its people and specific opportunities. EnCO provides the framework, principles and tools for this to happen.

Any organisation can apply to become a Registered EnCO Organisation simply by evidencing that its approach to energy management effectively involves its people. Those who currently fear their next energy bill should visit our website to find out more about how you can apply the EnCO process and become an Energy Conscious Organisation – <https://www.energyconsciousorganisation.org.uk/organisations>

In the UK, we conservatively believe a 10% reduction of the total energy consumption is possible through behaviour change by 2030. If we get it right, the EnCO initiative has the potential to achieve a huge impact in many countries.



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