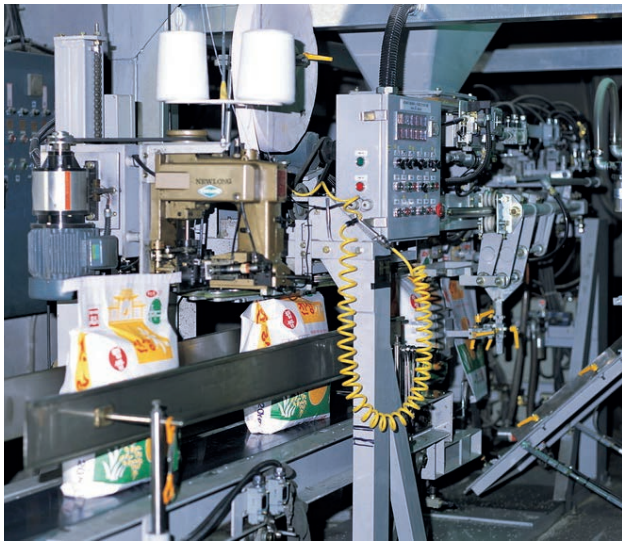
ENERGY MANAGEMENT



Navigating complexity – how energy managers can add value

Today's energy manager can often hold the title of safety, health and environment manager, engineering manager or environmental manager. But they all face the same challenges in effectively managing energy and reducing costs, writes *George Richards*.

In my role, I interact with organisations of many different shapes and sizes, primarily within the manufacturing sector and, as such, recognise the challenges facing those tasked with managing their organisation's energy.

In a recent meeting with the sustainability director of a major global manufacturer, I shared a PowerPoint slide listing some of the typical macro and micro challenges currently facing UK sites. He paused momentarily before stating that not some, but *all*, of the challenges listed were relevant to *all* of their sites – and this is a company with an annual energy expenditure in excess of £80mn.

Despite the fact that the cost of energy is likely to increase as the result of legislation, global demand and the UK's diminishing generating capacity, the same could be said of many organisations I meet with.

What constantly disappoints me is that our ability to help improve how energy is managed – even where a strong business case exists – is all too often frustrated and stalled.

Capital

I'm sure many of us are all too familiar with the phrase 'production is king'. It is as relevant today as it was when I first started my career in energy almost 40 years ago. In practice, it means that the core business activity takes absolute priority over any other consideration – unless it is a matter of legislative compliance, such as health and safety.

This prevailing attitude also works on the false premise that good energy management practice costs money and erodes already thin profit margins. This is blatantly untrue, as the positive impact of effective energy management on the bottom line has been proven time and again, and in many cases the return on investment exceeds that of other capital investments.

The lack of, or competition for, available capital is often cited as the main reason why energy projects are not implemented. But why compete for limited internal capital, particularly to invest in non-core business projects, when there are numerous alternative vehicles through which these investments can be made?

Individual investments can be funded via Energy Performance Contracts (EPCs) or third-party funding, whilst the responsibility for all utilities can be outsourced under a Utilities Management Agreement (UMA) with the performance risk outsourced to a specialist provider and energy savings guaranteed.

Culture

The culture of an organisation is influenced by a number of factors including its history; acquisitions and inherited cultures; the demographic of the workforce; location and its management team. In order to positively change an organisation's culture there needs to be a real belief in that change at the most senior level as this is where strategies are formulated, and examples are set.

That said, change has to happen at all levels throughout an organisation and needs to be reflected in communications, induction training, mission statements, management meetings, policies and day-to-day practices.

Energy has to be considered in all parts of an organisation – from procurement to operations, and from the office to the factory floor. Doing so makes energy everyone's responsibility and not just that of a single individual. In other words, a holistic view needs to be encouraged and adopted across a business.

The cumulative impact of individual actions and measures has a significant and, more importantly, a sustainable effect upon energy efficiency and cost reduction.

Increasingly, a company's sustainability culture, of which energy is a significant constituent part, is a key factor in both the retention and recruitment of staff and indeed in the securing and retention of customers and suppliers.

A well-developed and established organisational energy culture will also help to bridge the disconnect that is often present between group and sites, where group targets bear little relationship to what can realistically be achieved at site level – particularly where appropriate resources are not made available.

Organisational change

Organisational change, and the exit and influx of individual managers, can often frustrate progress with projects and the development and

Production is king within the manufacturing sector, but energy management still delivers bottom line benefits

implementation of effective energy management. However, once a good Energy Management System (EnMS) has been developed and implemented this will negate any negative impacts of organisational and personnel changes.

A good EnMS, such as one that complies with ISO 50001, will ensure a consistent approach to how energy is managed and provides a lasting legacy for the organisation by embedding it in its culture and working practices. Furthermore, it ensures that responsibility for managing energy no longer lies with a single individual, but the entire organisation.

Technology

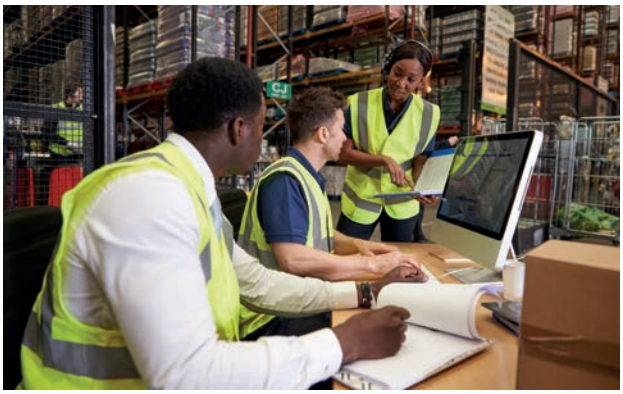
I am old enough to remember the 'dash for gas' in the 1990's and the glut of combined heat and power (CHP) projects that went with it, leaving a legacy of oversized and inefficient plants.

There were a number of reasons why this happened, including the energy market dynamics at the time, which encouraged oversized CHP plants to be installed as exported excess power realised a valuable revenue stream. However, the energy market has since changed significantly, and the economics of exporting power no longer add up.

Today, there is a shift back towards on-site power generation for different reasons, such as site resilience and reducing carbon dioxide emissions, but CHP plants are now being sized to meet the power demands of the site only. However, in my view, insufficient work is being done to understand the current and future electrical baseload of sites before specifying the size of the CHP plant being installed which, after all, is a long-term investment requiring a long-term view to be taken.

Many organisations are also turning to renewables, such as biomass, solar PV and wind – all of which are an increasingly important part of the energy mix. But it can be difficult to assess which technology is best suited to an organisation's needs, location and energy profile. Rapidly-developing battery technology adds another layer of complexity to the picture, as these technologies will influence potential investment in renewables in terms of type, location and scale.

The increasing numbers of electric vehicles adds yet another responsibility to the list for today's energy managers, who are often tasked with ensuring the supporting on-site infrastructure is in place.



Internal communications, induction training and day-to-day practice are all essential to organisational change

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Legislation

CCAs, ESOS, EU ETS and now SECR are some of the many pieces of legislation and regulation that today's energy manager has to deal with. Ensuring compliance can be very time consuming and complex and detracts from the day-to-day task of managing energy.

However, energy-related legislation is not going to go away, and it is important to try to find a way in which to help, not hinder, an energy manager's efforts. If we take ESOS as an example, many participating organisations view these regulations as unnecessary and have adopted a 'tick in the box' approach to compliance – failing to implement any of the identified improvement measures and projects.

Instead, I would suggest embracing ESOS and extract as much value from it as possible starting with the appointment of a fully qualified lead assessor with the relevant and demonstrable experience of your particular sector. In addition, identify those lead assessors who can add real value to the process and with whom you can envisage working in the future.

Finally, one of the key objectives of ESOS is to provide an opportunity to raise the profile of energy, and the opportunities it presents, to the board of a company. A director has to sign off the ESOS audit and can therefore use this as an opportunity to present the key findings and make a business case for implementation.

The use of tools, such as a cost benefit analysis, will help to clearly illustrate the cost of inaction versus the benefits of implementation and will take into account the rising cost of delivered energy over time, helping to encourage greater focus on energy management and efficiencies.

Resources

Almost without exception, energy managers have multiple roles and complain of conflicting priorities and a lack of resources, ie time and people.

Typically, and understandably, their available time is spent ensuring compliance with relevant legislation; checking that the business has a reliable and secure supply of required utilities, such as air conditioning, compressed air, heating or refrigeration; and, if time allows, providing energy reports to the senior management team.

In recognition of this common issue, and in direct response to one particular organisation struggling to recruit, we developed and now provide what is in effect a part time energy manager service, which can be used to help with any aspect of energy management.

The selective use of relevant equipment suppliers can also be a useful resource as can industry peers, trade associations and industry organisations including ESTA, EMA, Edie and the Energy Institute.

Overcoming challenges

For those organisations at the beginning of their energy journey, I would suggest taking the following steps to get to grips with energy management.

- Step One: Create a plan. This can be a simple one-page document outlining the key steps that will help improve how energy is managed and will drive down energy consumption and costs.
- Step Two: Understand how and where energy is being used across your site or organisation. That doesn't mean installing hundreds of meters at a huge cost, it simply means optimising what you already have and making it work for you.
- Step Three: Identify simple low-cost measures and projects that ideally can be funded via the Opex budget and have a good return on investment.
- Step Four: Measure results, report progress and celebrate success.

There is no choice but to reduce energy consumption for economic, operational and environmental reasons. While the job of an energy manager seems to be getting more complex all the time, careful planning and forecasting can pave the way for effective action across an organisation. ●

George Richards is Business Development Director at energy consultancy JRP Solutions, **jrpsolutions.com**