

ENERGY MANAGEMENT IN THE UK

A report on the findings of BSI's July 2009
Energy Management Research Survey – October 2009

1. Introduction

The complexity and far reaching consequences of climate change, coupled with today's volatile business landscape, has created a shift in thinking in both the public and business sectors. There is a growing business case to take energy issues seriously, especially as organisations are finding themselves in a risky climate with regards to volatile fuel prices and the impetus towards a low carbon economy. The economic crisis has forced organisations to take a critical look at their costs and try to optimise their processes and usage patterns. Historically energy prices have been relatively low, but recent successive price hikes have pushed energy costs up to the point where for many it becomes commercially important to pay attention to controlling these costs.

2. Energy management

Energy management is key to helping organisations improve energy efficiency, reduce greenhouse gas (GHG) emissions and drive down energy costs. Energy management is defined as the techniques, processes and activity which drive more efficient energy use. Energy management allows for a reduction in costs, carbon emissions and risk, ensuring the efficient use of energy consumption.

In parallel, national and international regulation in this area is growing. For instance, in April 2010 the UK Carbon Reduction Commitment Energy Efficiency Scheme becomes mandatory for users whose electricity consumption through half hourly meters is greater than 6,000MWh/yr – equivalent to an annual electricity bill of c. £500k. As global concern over climate change grows, legislation (as well as consumer focus) on Greenhouse Gas emissions is likely to increase. As a result of these factors, energy management is moving higher up the business agenda.

3. Purpose of the research

To coincide with the publication of the European energy management systems standard EN 16001, BSI commissioned a major piece of international research on energy management in key countries. BSI wanted to understand how widespread and developed energy management practice is; who is engaging in it and why; and to what levels of maturity.

4. Global overview

The survey was conducted in the UK, Germany, India, China, Japan, the USA and Brazil and yielded a global total of 2,102 respondents. Findings showed no marked divergence between countries in their perception of the importance of energy management, or in current practice nor in the key driver for implementing energy management, which is cost saving.

The global figures are broken down in more detail in the Appendix to this report.

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UK SURVEY

5. Methodology

In the UK, the research was conducted in two phases. In Phase One, organisations were invited to complete an online questionnaire. In total, the UK survey generated 796 responses.

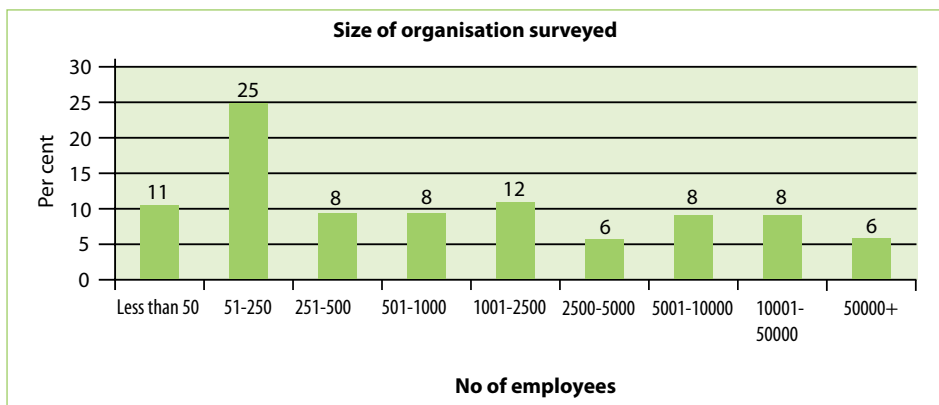
In Phase Two, 50 participants from Phase One – who had indicated they would be happy to be contacted – were interviewed in depth. Respondents were asked about the reasons for their organisation's interest in energy management, barriers and enablers to effective energy management, the appeal of different types of support, and their experiences of energy management processes, practices and third party service providers.

This report summarises key findings from the two phases of the research.

6. Participants

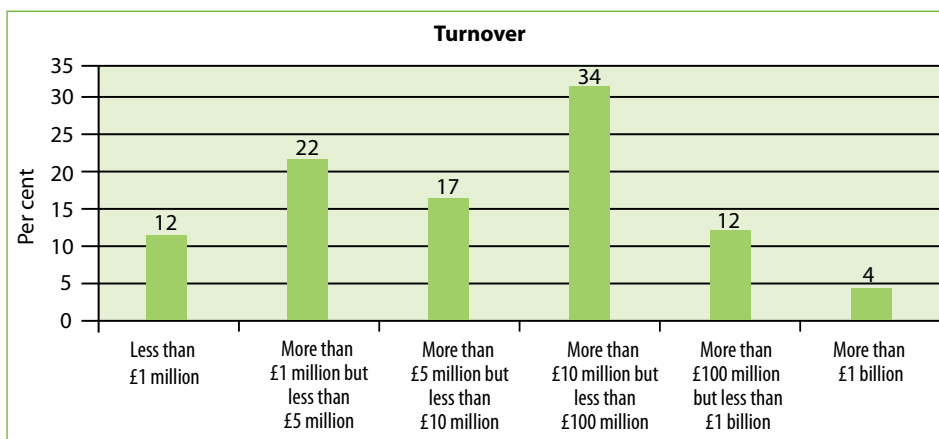
Number of employees

Of the UK participants who responded, the largest proportion, (25%), work in organisations with 51-250 employees. However 41% work in organisations with more than 1,000 employees against 11% in organisations with less than 50. 12% work in organisations with between 1,001 and 2,500 employees, with 6% working in organisations with over 50,000 staff.



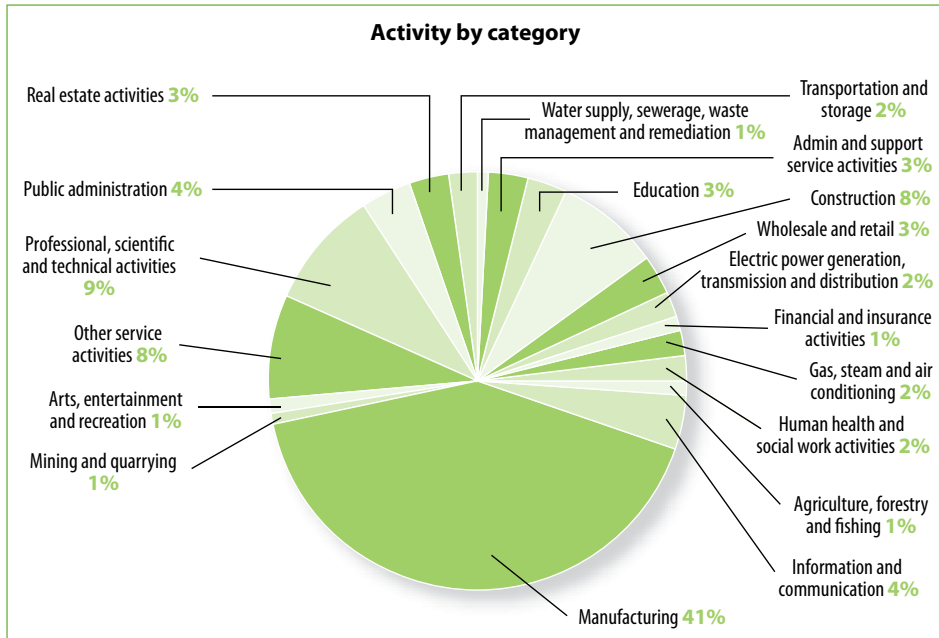
Turnover

The majority of respondents work in organisations with a turnover between £10m and £100m (32%), with the second largest group (22%) posting a turnover between £1m and £5m. 17% posted between £5m and £10m, and 12% work in organisations with a turnover of less than £1m. Likewise, 12% work where turnover is more than £100m but less than £1bn. 4% of the surveyed organisations have a turnover in excess of £1bn.



Activity

In terms of activity – given 20 categories to choose from – the largest proportion by far (41%) work in the broader category of ‘manufacturing’ within the private sector. The category ‘professional, scientific and technical activities’ accounted for 9% of the total with no other category exceeding this proportion. Eight per cent work in ‘construction’.



FINDINGS

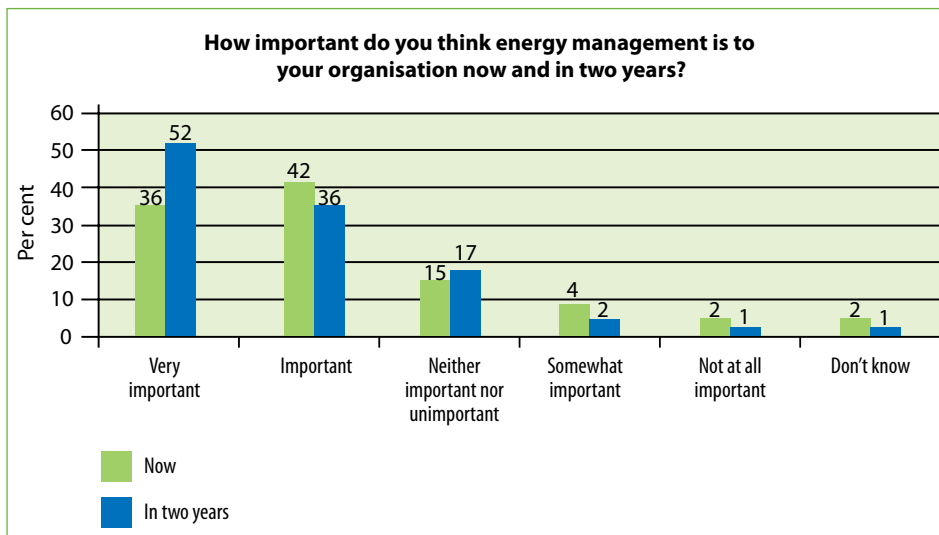
7. Attitudes to energy management in the UK

Importance

To determine the level of interest in energy management, respondents were asked about the importance of energy management to their organisation now, and how important they felt energy management would be in two years times.

The survey showed that 78% of respondents felt that energy management was important or very important to their organisations, and indicated that it would continue to rise in importance over the next two years.

“It is very important now! It has been for the past year or so really, with so many things coming our way. What with increases in prices and now CRC it is extremely important and we have a director input now.”



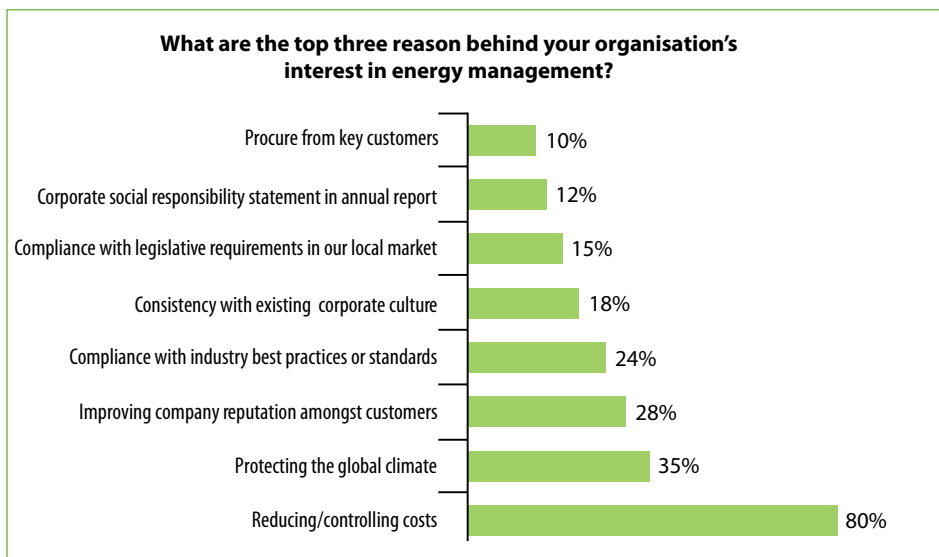
“Energy management is business critical for cost reasons but also because of the organisation, of who we are. There are political and economic drivers.”

Reasons for interest

The growing importance of energy management was attributed to a range of factors: the most frequently cited being cost (80%). When asked about the changing cost of energy per unit of production over the past year, 39% reported an increase in energy costs; nearly half that number saw a decrease (20%) with 18% reporting costs had stayed the same. More than one fifth of respondents (22%) said they didn’t know how costs had changed

The next most common reason is protecting the global climate, cited by 35% of respondents to the online survey. However, on probing this response in the interviews, most people think that increased interest in energy management is due to the topic’s PR value than to a real concern for global climate protection.

The positive by-products that result from efficient energy management are seen as useful selling points in the market, but not as a strong lever to obtain buy-in internally. Finally, a significant minority cites Carbon Reduction Commitment legislation in the UK as a key driver.



“It’s a business, so we need to look at our outgoing costs. Through simple changes we can make pretty big savings but we’re only a small company.”

Commitment to invest in energy management

Most companies (73%) had energy costs totalling less than 25% of total costs and around one third reported that energy costs are less than 5%. A significant proportion of companies in the interviews reported that they are focusing on energy savings as they believe that this is an area which they can control and which, if successful, can help offset less attractive cost cutting measures brought on by the current tough economic climate.

The research found that the more energy intensive organisations identified a higher justification for expenditure on energy management.

Conversely, in the current economic climate, many see energy management as a non-core issue with a lower priority than others. It was felt hard to justify the costs of implementing energy management reduction measures; though this may relate to an inability to estimate how much cost can be saved.

8. Who is responsible for energy management?

Despite the interest in energy management, 20% reported that they had no-one responsible for energy management in their organisation, and 5% could not say if they did or not.

Companies with a person or team looking after energy are more likely to have someone on their Board responsible for energy management. And the survey showed that for 64% of the companies who rated energy management as important or very important, it is now a Board level issue.

Where a dedicated person or team exists, energy management is more likely to be very important (69%) to the organisation compared to around 40% for the sample as a whole.

Few companies have a dedicated resource. Only 5% of respondents work in companies with full-time energy management personnel. Most commonly energy management is performed by SHE, Environmental, Quality, Facilities and General Managers. For most, their energy related role is relatively new and has been added to their job as a new responsibility because energy management is perceived as being contingent with the pre-existing role.

While not necessarily comprising the decision making unit, interview respondents were responsible for bringing ideas to the table and planning efficiencies. Their senior managers relied on them to suggest ways of reducing costs and improving efficiency, and to highlight any PR angles associated with energy related initiatives. Most of the interviewees were responsible for and felt well-able to put together business cases which clearly demonstrated savings, capital investments, paybacks and sales angles.

9. Energy management in practice – current compliance with best practice

Activity

The survey asked respondents about the activities they undertook in relation to energy management. BSI was particularly interested in the extent to which current practice reflects industry best practice, as defined in the new European energy management systems standard, EN 16001.

Most (84%) of the survey respondents and almost everyone who was interviewed reported monitoring energy consumption in some form, although this was with varying degrees of sophistication. Some use internal data to identify high usage areas, and others compare utility bills with their own readings.

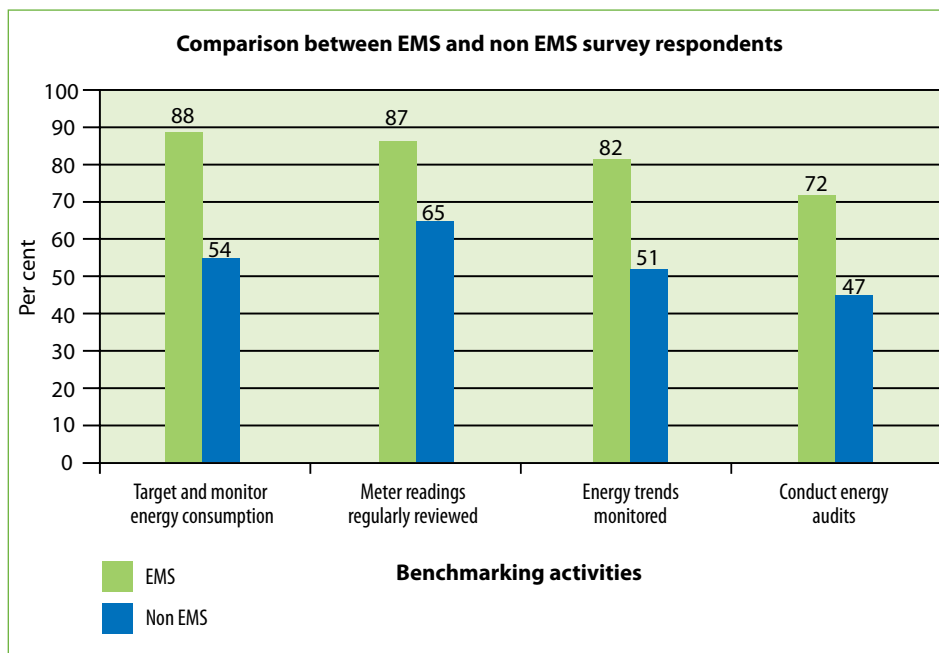
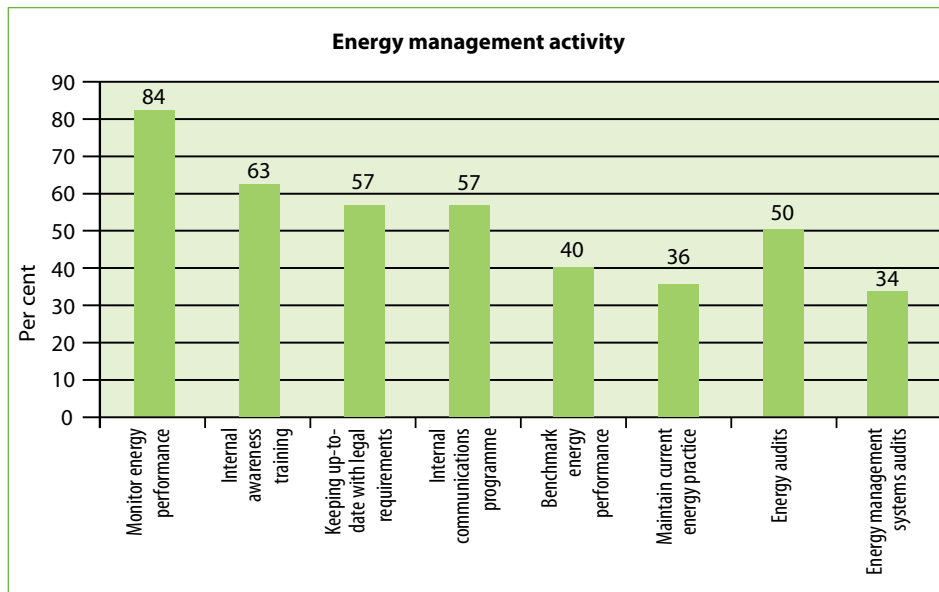
Few of the interviewed respondents, however, can quantify performance in any terms other than expenditure and very few can quantify performance at the operational level – for example by machine or production line. There appeared to be little common understanding of targeting and monitoring, and energy factors such as, for instance, external ambient temperature are seldom part of energy use calculations.

Other key tasks which rated highly include awareness building within the organisation (63%); keeping up to date with legal requirements (57%); and internal communication programmes (57%).

Internal communications often focused on the potential savings from simple actions, although a significant proportion of the interviewed respondents admitted limited success with attempts at changing behaviours, despite some conscientious efforts (screen saver reminders to switch off PCs, competitions with prizes for the most effective energy saving suggestion etc).

However, the survey showed that several best practice energy management requirements were less prevalent. Only around a third of respondents felt they did any kind of energy management systems (EnMS) audit (34%) and only around the same proportion felt they maintain a current energy policy (36%).

Similarly, the majority of organisations (60%) reported that they did not benchmark, but only tracked internal performance and were unable to say if their energy usage was in line with their sector. In the interviews some respondents said it was difficult to find comparable data.



The table above illustrates the different responses between the survey respondents who already have an environment management system and those who do not. The findings show that organisations with an EMS score higher on benchmarking activities than those without.

Quality of energy management practice

To gain a deeper insight into the quality of current practice, the survey asked respondents to compare their current energy management practice against a list of key best practice requirements:

- an energy management policy
- an energy management plan
- a policy to encourage energy efficiency across the supply chain
- a communications programme for staff
- a communications programme for external stakeholders

This showed that 42% of firms reported that they currently had an energy management policy in place, while among those who don't yet there is significant interest: just over one third (34%) are thinking of implementing one within the next two years. Only 15% of respondents do not contemplate implementing an energy management policy within 24 months.

As to encouraging energy efficiency across the supply chain, less than one fifth do this currently (18%), but more than a third (35%) contemplate doing so within the next two years.

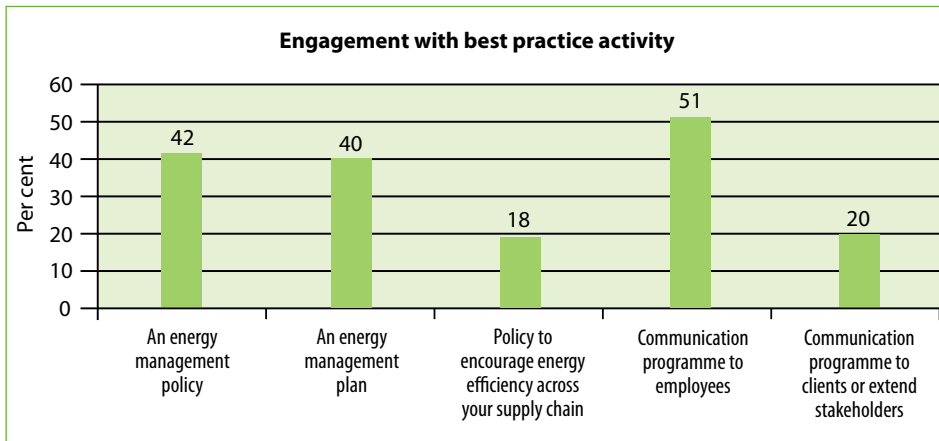
Similarly, in terms of communication programmes, around half are communicating with staff (51%) already, with nearly a third intending to start (29%) within two years. Only around a fifth (21%) are currently communicating with external stakeholders, but again around one third (32%) look to start in the next two years.

These figures indicate that there is a significant level of interest in implementing more sophisticated energy management practice.

Among the interviewees, there was a sense that 'low hanging fruit' in terms of energy management had already been tackled, but that deeper organisational cultural change and behaviours now needed to be addressed, along with greater senior management commitment. Some of the respondents saw use of a standard as a way to formalise the process and thereby embed a change in culture – not least among senior management.

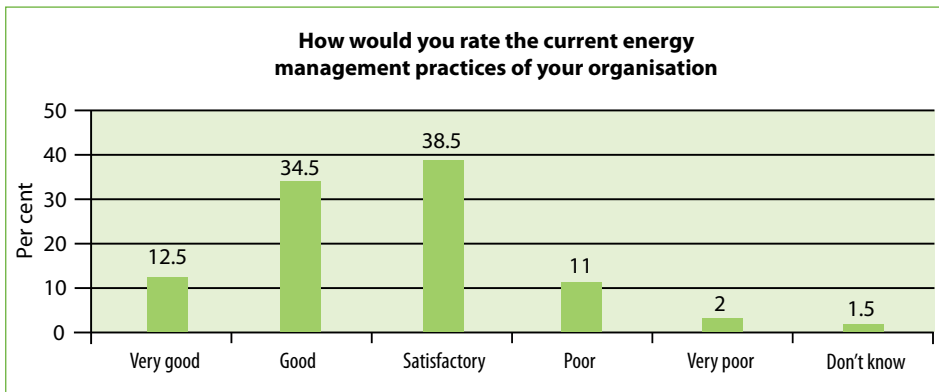
"It's very important for us as our customers demand it. They have to meet targets set by the government so they put pressure on us and you know we're putting pressure on further down the supply chain."

"If you're already running a tight ship getting down is much harder. You're into cultural, change management things...that's where I think the standard could come in because that embeds the energy policy, it embeds the benchmarks or the energy accountable centres within a company and you use those to embed changes across the workforce."



Finally, respondents were also asked how they rated the current energy management practices of their organisation, revealing that a high majority felt their practices were satisfactory or better (85%).

However, as noted above, many of the respondents are operating in isolation and have not had any formal training on best practices.



10. Attitudes to standards

In conclusion, the survey looked at attitudes to standards. In the interviews, the majority sentiment was that, with reservations about cost, certification to standards was nevertheless worth pursuing. For some organisations, certification is a way of differentiating themselves from the competition, for others it is necessary to win market credibility.

“The textbook answer is that it’s for our business but the reality is the market place demands that level of credibility.”

demonstrated cost savings. Meanwhile 78% are likely to adopt an EnMS if mandatory targets are introduced. The need to comply with legislative requirements and pressure from key customers were the next most cited triggers for adoption.

Triggers for the introduction of an energy management system

The survey also asked why respondents would adopt a formal Energy Management System (EnMS). The results showed that this is dependent on a number of parameters – with 86% saying adoption would be quite or highly likely if it

Summary of key findings and conclusion

The survey clearly identified that energy management is seen as important by the huge majority of respondents and that they believe its importance is set to grow. The results indicate a broad interest in energy management across many industry sectors (even the apparently dominant manufacturing sector can be broken out into many subsectors). Furthermore, energy

management practice is underway in the UK in many ways. However, there is still not much penetration of formal training and the energy management role is not yet well recognised or resourced, with a diverse range of job titles owning the function.

Similarly, around two thirds of respondents do not conduct regular EnMS audits, nor maintain a current energy policy – both of which compromise the delivery of continuous improvement in energy management. And roughly the same proportion does not benchmark energy use which isolates practitioners from realising potential savings.

The report’s findings also indicate that while energy management activity is widespread, the penetration of good practice is not deep. Most organisations monitor energy use, but few conduct the sophisticated monitoring and analysis of usage which is a requirement of the standard and which leads to clear actions which save energy. This suggests a performance gap in best practice. Energy might represent a small proportion of overall costs but it is one which can be controlled and has quick wins.

Finally, in respect of senior management commitment and behavioural change, respondents struggle to embed energy management in the organisation. An energy management system would embed energy management best practice into the organisational culture and ultimately improve performance by providing a formalised structure which helps identify further opportunities for efficiency and cost cutting.

Better energy management can lead to improved energy efficiency leading to reduced costs, improved business performance, reduced greenhouse gas emissions, enhanced reputation, greater ability to meet current and future energy efficiency legislative targets, improved reputation, secure energy supply and ultimately drive innovation.

There are many technology based solutions available on the market to help organisations reduce energy consumption. A systematic approach can help an organisation gather robust data on which to base sound investment and business decisions, through the identification and analysis of significant energy issues, by monitoring energy consumption. The analysis showed that organisations with an EnMS scored better on benchmarking activities than those without an EnMS. A formalised energy management system helps organisations spot trends, identify opportunities for improvement and generally better manage their energy performance.

The benefits mentioned above can be achieved through the implementation of an energy management framework in the form of the European EnMS standard EN 16001. The standard was developed by the European Centre for Standardisation (CEN) to build upon the success of existing national standards and specifications in some member countries (such as Denmark, Sweden, Ireland, Netherlands and Germany) with the input of the National Standards Bodies in all 28 CEN countries. British industry’s input was channelled into the final version through BSI British Standards. The resulting standard named BS EN 16001:2009 was published in the UK this July.

To obtain a copy of the standard from BSI British Standards visit www.bsigroup.com

To find out about the range of services from BSI Group; from guidance to help organisations learn more about energy management, training to implement and audit BS EN 16001 to certification and verification of energy reductions please visit www.bsigroup.com/en16001

Appendix: The Global Picture

BSI's international energy management survey was conducted in the UK, China, Japan, Germany, Brazil, the USA and India. In all 2,102 online surveys were completed.

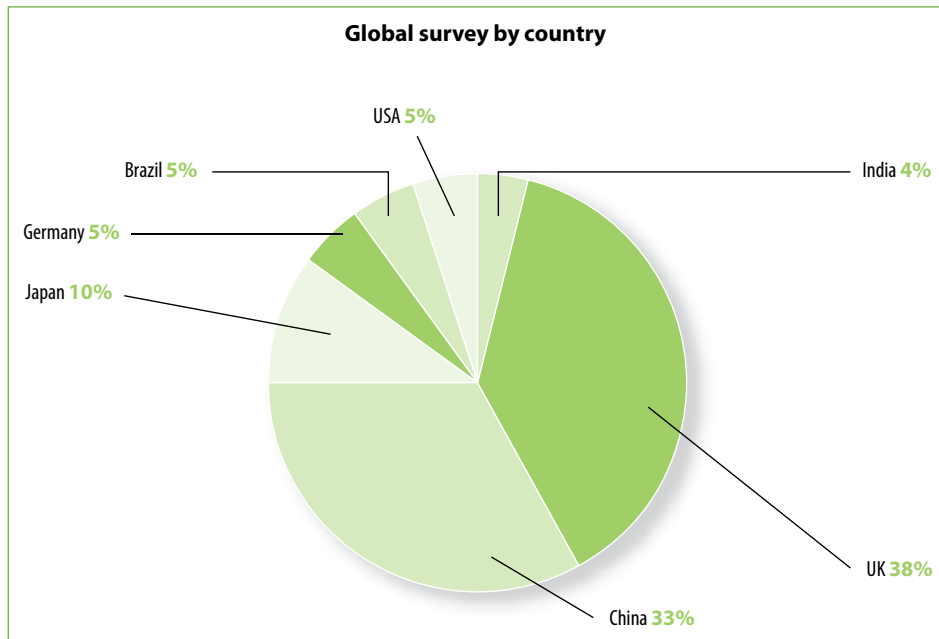
Key findings of the global survey show that 69% of respondents felt that energy management was important or very important to their organisation. Moreover, 38% of respondents work in organisations where a person on their board is responsible for energy management. Nearly a third of global respondents (32%) felt that the cost of energy for them had increased in the last year, while slightly over one in five (22%) experienced a decrease in energy cost.

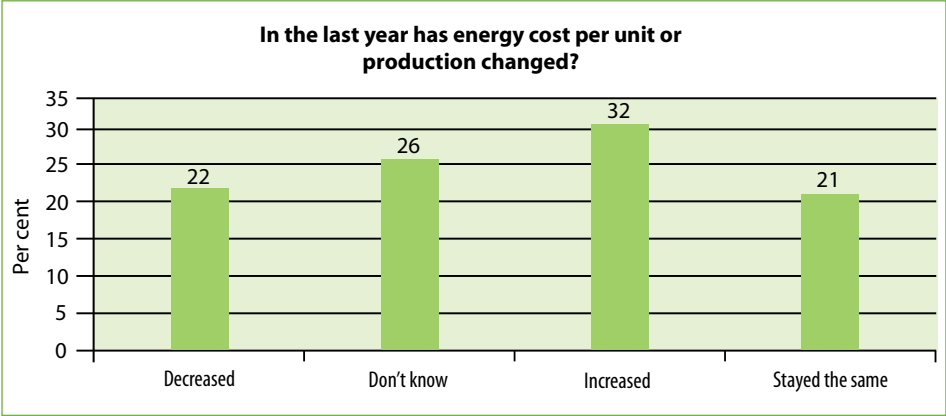
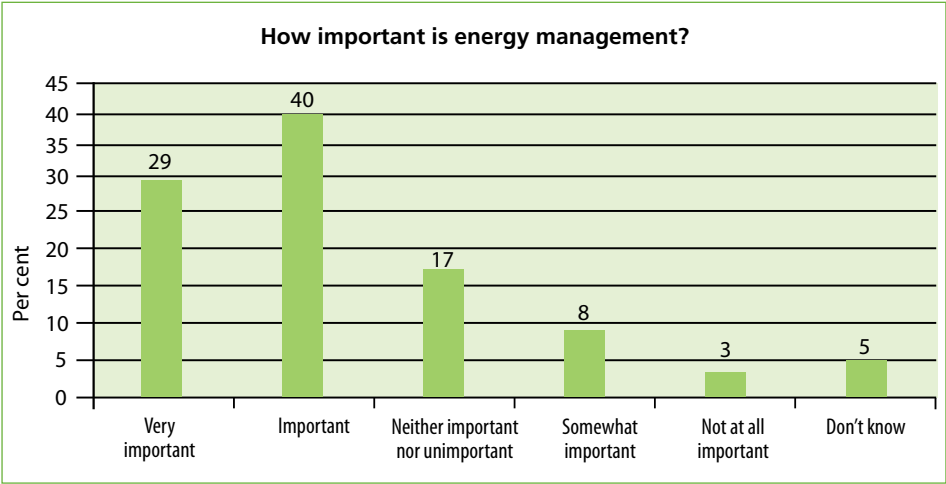
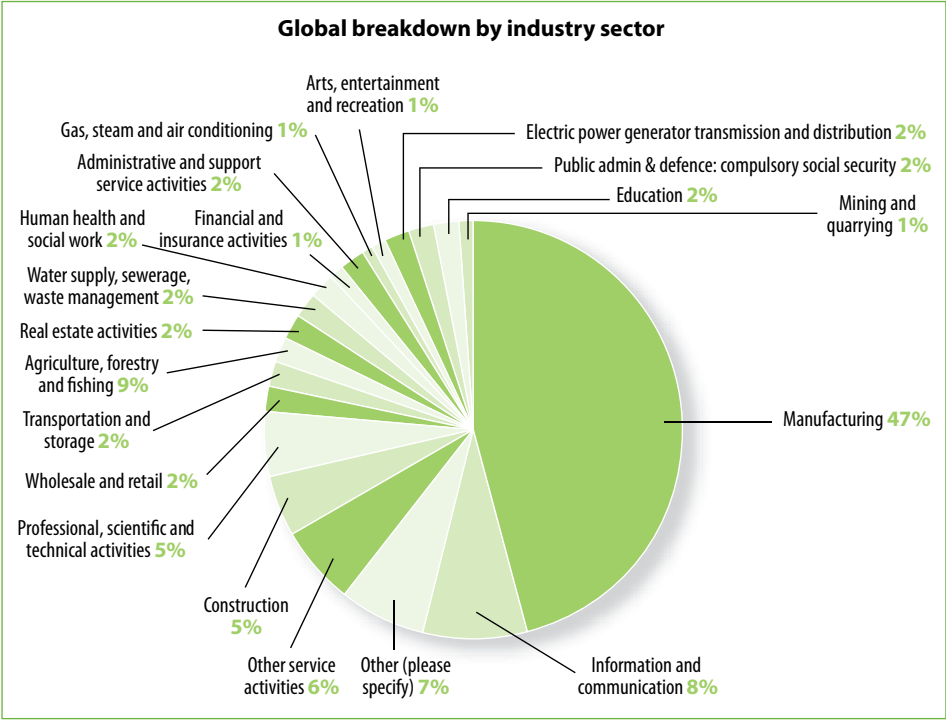
A total of 81% of respondents felt their energy management practice was satisfactory or better against 14% who felt it was poor or very poor. The majority of surveyed organisations have teams or individuals responsible for energy management (58%). However in the majority of cases, energy management is only part of the role of a single individual.

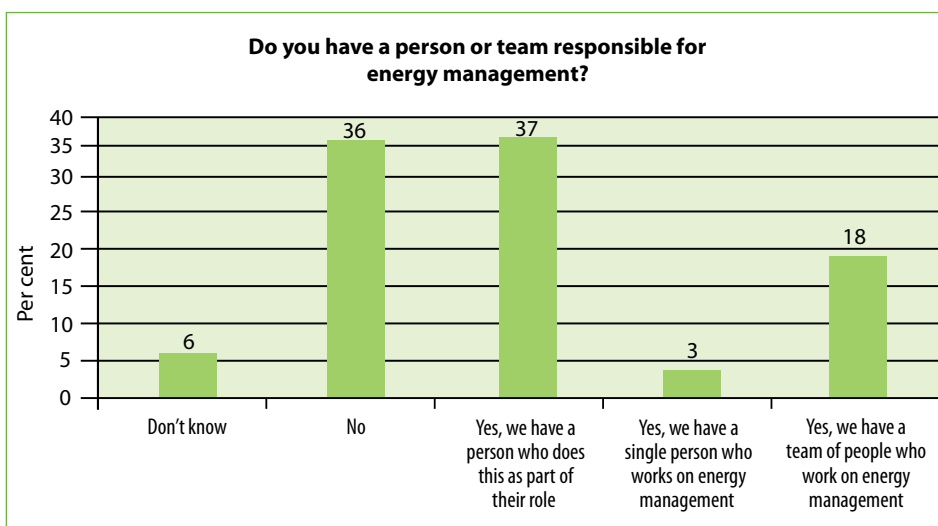
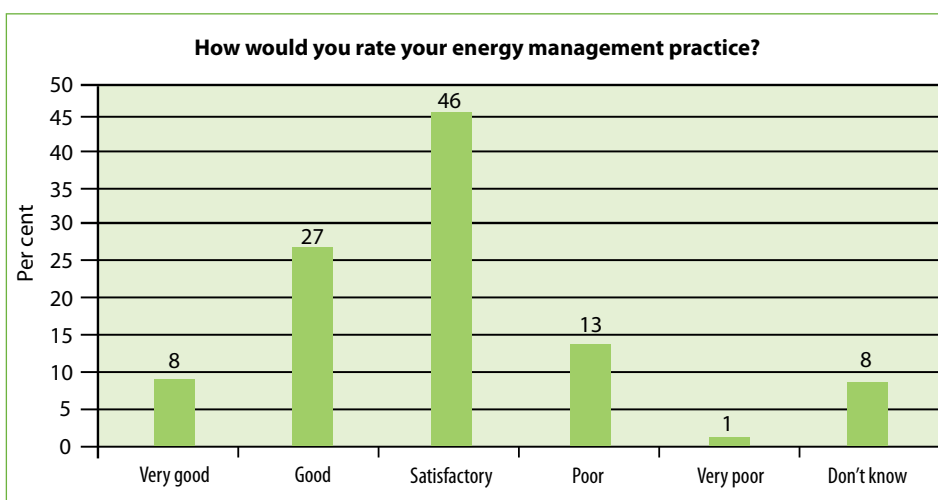
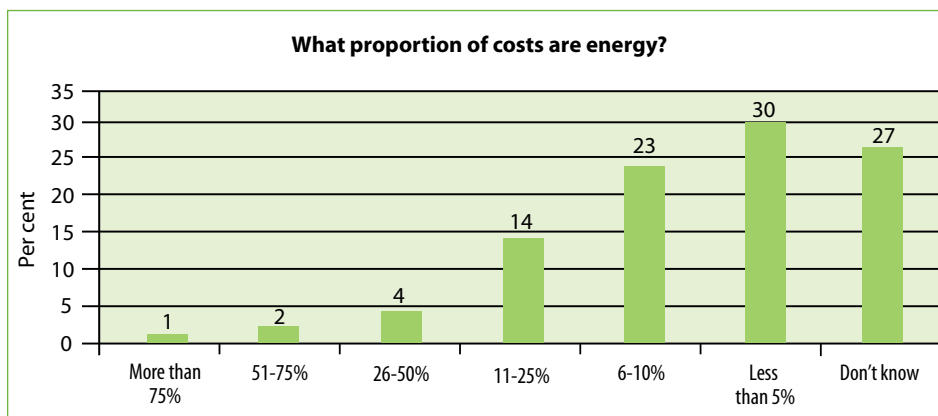
The global survey also showed the prime driver of interest in controlling or reducing energy use is cost (76%), with concern over protecting the climate a distant second at 33%.

The most common energy management procedure currently in place is communicating to employees (42%). Around a third state they have energy management policies and plans. Fewer than one in five respondents either communicate to external stakeholders on energy management or encourage energy efficiency across the supply chain.

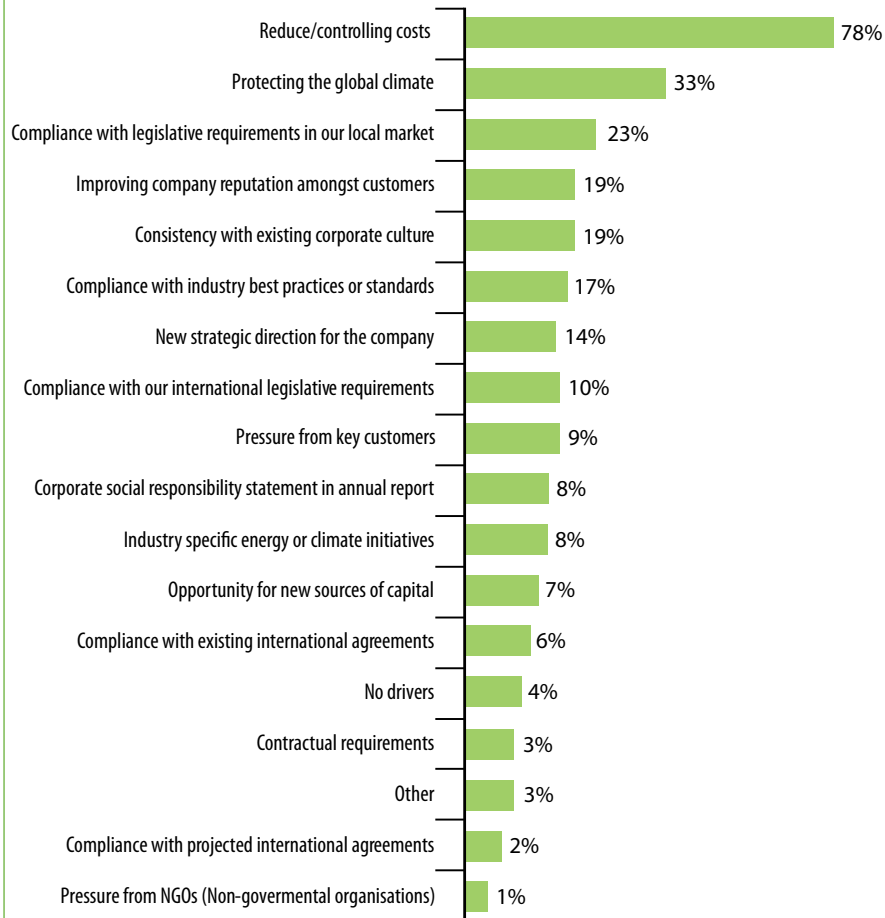
These findings are broken down in more details in the graphs which follow.



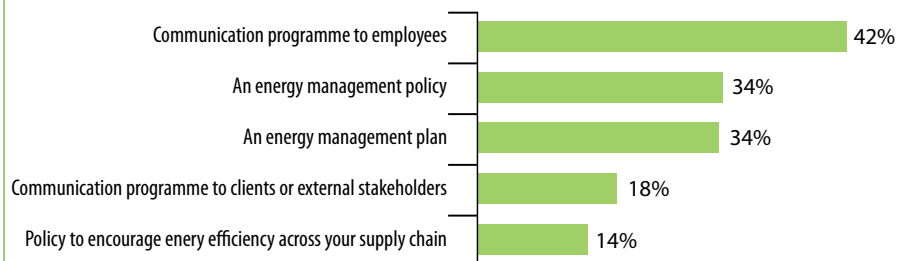




Top three reasons behind interest in energy management?



Which energy management procedures are currently in place?



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