



360 ENERGY INC - WHITE PAPER

ISO50001 ENERGY MANAGEMENT SYSTEMS

A new global standard – but what does it mean in practice?

By John Pooley

June 15 (2011) saw the long awaited publication of the international standard for energy management. Unusually for an ISO standard its publication was ahead of schedule. (In the spring of 2011 the project publication date was the fall of 2011). In this white paper we examine the background to the development of the standard; we look at what it can deliver, its impact and uptake and its relationship with other standards and systems. This is a high level review and does not look at the detail of implementing ISO50001.

ISO50001 is an international standard that can and will be applied anywhere in the world. In some jurisdictions it will replace existing standards. For example, in Europe it will replace EN16001 – this was published in 2009 and was drafted in such a way to be compatible with the expected ISO standard. Some observers consider that the EU ‘fast tracked’ 16001 in order to influence the format of 50001. In other jurisdictions it will be the new kid on the block and for the first time provide a formal, systemized set of ‘rules’ for energy management.

An important feature of ISO 50001 is its endorsement of an Energy Management System. A management system (under ISO) is a formalisation of practices; their documentation and adherence to a set of procedural guidelines. An ISO management system is driven by a policy statement - it also provides the framework for the allocation of management responsibility. The key management model behind an ISO management system is the Plan, Do, Check, Act (PDCA) continual improvement framework. A stated intention of ISO50001 is to “incorporate energy management into everyday organizational practices.” As such, this in line with 360 Energy’s philosophy that energy management needs to be a part of organizational DNA in order to be successful.

Why an ISO for energy management systems?

A number of jurisdictions had national standards (for example, IS 393 (2005) in Ireland) but these had limited traction until increasing focus was placed on climate change, carbon dioxide and emissions from energy use. One approach that could have been considered would have been an increased focus on energy through ISO14001 – in practice this is still an option open to organizations. However, there was an increasing body of opinion that a separate standard would be more effective and would also serve to better raise the profile of energy management. As a result an international working group developed the 50001 standard with a number of drafts circulated for comment. Interestingly, some organizations chose to become certified to the draft standard – some to show that they were early adopters, others as part of a developmental process.



ISO50001 has a strong family resemblance to 9000 (the quality series) and 14001 (environmental management systems). By this we mean that much of the language, structure and approach are the same. This does provide organisations that are already certified to 9000 or 14001 the opportunity to look at an integrated management system.

However, there is, we feel, a significant difference between 50001 and 9000 and 14001. The adoption of the quality standard, and to a lesser extent the environmental standard, has been driven by external pressures. For many companies, certification to 9000 is an essential requirement to becoming a supplier. Equally, in some jurisdictions, certification to 14001 can lead to lighter control from regulators – as well as enhancing a supplier's credentials when supplying environmentally concerned organizations. At this time, we do not see 50001 becoming a supply chain requirement. It is possible in some jurisdictions that it may provide evidence of compliance for some regulators. Where we do see uptake is initially amongst those that are already committed to energy reduction, savings and environmental improvement.

The 50001 standard provides the framework for a formal, procedure driven management system to support energy management activities. In common with 14001, 50001 allows the organization to set its own goals – and as long as continual improvement is demonstrated - these will be acceptable. This means that you can have two similar organizations both with 50001 but with very different objectives. One might save less than 1% of its energy use in a year, the other might save 25%. One may be mature in terms of energy management and therefore have limited savings potential, whilst the other may be new to energy management with a lot of 'easy wins'. So to use 50001 alone as a performance benchmark is fundamentally flawed. This issue has been addressed by a number of other approaches. In the US, the Superior Energy Performance program requires certification to 50001 and specific energy performance improvements. In the UK the Carbon Trust introduced the Carbon Trust Standard – requiring minimum reductions in carbon footprint – which implies energy savings. 360 Energy's Certification in Energy Excellence (CEE) program, which pre-dates Superior Energy Performance, requires a three year track record of performance improvement as well as an 'energy management system'. With the CEE program, the use of a management system, such as 14001 or 50001, provides 'credits' towards the overall scoring – but it is only a fraction of the overall scoring required.

In common with environmental certification it is often claimed that the implementation of a management standard has significant cost saving potential. This case is made in part to offset the cost of developing the management system and having it certified. If an organization is already doing the right things then arguably the immediate savings from implementing 50001 will be minimal. So should they bother? The real value of 50001 is that it has the ability to 'lock in place' good practice and help support it in the future. But herein lies a risk with systems such as 50001 – if good practice is not a) in place and/or b) not understood there is a danger that the system will deliver 'sub-optimal' performance - or put more simply it may serve to lock poor practice in place.

So what does save energy? The answer is effective energy management. What we want people to avoid is seeing the 50001 system and certification as the complete answer to energy management. Certification to 50001 will enhance existing good practice performance – but it is essential to fully



understand your organization's relationship with energy, and how to effectively manage energy – in all aspects (procurement, operational and projects) before looking to codify it.

What levels of savings can be expected through managing energy? If we look at an organization that has not been fully engaged with energy management, then typically savings could be in the region of 20%. However, this figure needs to be broken down further. Of that 20%, half (10%) will most likely require capital investment and a typical portfolio of projects will normally deliver this with paybacks in the region of 2 years. The remaining 10% will be accessed through a range of low or so called no cost measures. These include performance monitoring, workforce engagement, maintenance issues, re-commissioning, etc. Workforce engagement is typically thought to deliver 5% savings – but this is an area where the need is for both cultural change and a framework to support and sustain good practice. Simply having a management system will not bring about the 'cultural' change required for full engagement of either the workforce or of senior management.

Whilst a key objective of 50001 is to incorporate energy management into everyday practices, we do have a concern that the 50001 approach might not always lead to full organizational integration. This depends entirely on how the specific 50001 system is developed and implemented. Without foresight and care it is possible to use a system like 50001 to reinforce 'silo management' of energy (management in which programs and procedures are not integrated throughout the organization, but handled by department separately- this approach to managing energy has proven to be neither successful nor sustainable). It is for this reason that we are supportive of 'integrated management systems' that combine 9000, 14001, OHSAS18001 and 50001. This approach is much more likely to lead to thinking that places energy front and centre as part of how the organization operates. Having said this we are not looking for energy to be given any more significance than it should have; however, the problem is that many organizations fail to give energy the significance it deserves. There are very few organizations in the modern world that do not have an underlining dependence on energy to function effectively. Yet many regard the energy bill as a cost of doing business that is outside of their control. Much of this springs from energy users thinking that as the market sets prices for energy, they have no control. It is worth remembering that for many organizations simply checking utility bills can produce savings.

Should your organization be looking at ISO50001?

The simple answer is yes! But this does not mean that you should automatically adopt it. At a basic level, purchase of the standard – (\$120) is a worthwhile reference work for anyone engaged in energy management. Moving on 50001 provides a range of options - certification, registration and self-declaration of an organization's Energy Management System (EnMS). Opting for self-declaration will reduce the costs associated with certification, but it will not have either the external recognition or the benefit of an independent third party audit.

We have identified three types of organizations – those with in depth knowledge of both ISO management systems; those with good energy management knowledge and practices, but limited experience of ISO based management systems; and those with limited energy management and ISO



management experience. If your organisation is both experienced in ISO management systems AND energy management then you should consider certification as part of your overall approach to energy management. For organisations in this position certification should be straightforward - a typical time scale would be three months from gap analysis to certification. For organizations in this position, a key step is establishing whether or not your current certification body is geared up for ISO50001. Another important step is ensuring your approach to energy management is 'optimised' prior to drafting procedures.

If you have good energy management but no experience with ISO based management systems, the first step would be to gain a full understanding of the ISO process. Participation in a group learning process can be one cost effective way of doing this. If the organization has not been involved with ISO based management systems it is worthwhile questioning if certification to 50001 is the right path. Again – optimise energy management prior to drafting any procedures.

For the final group with no energy or ISO experience we recommend that the initial focus is on the development of energy management with 50001 staying in the background.

Conclusions

ISO 50001 is far from being a complete solution; it is a valuable tool, but is only one tool in an extensive toolbox. Will it save you energy and money? Only as part of an integrated energy management programme. ISO 50001 alone will not engage senior management and the workforce; it will not identify energy saving projects; it will not make the case for funding capital projects; it will not improve your energy procurement processes. It will not help you know how and when you use energy. ***The key to controlling energy costs is effective, sustained energy management that is fully integrated within the organization.*** ISO 50001 is just one tool that can be used in moving towards sustained energy reduction, and ultimately, sustained savings.

About 360 Energy Inc

360 Energy is one of North America's leading energy services firms providing comprehensive and effective energy management programs and energy saving initiatives through its head office in Burlington, Ontario.

With clients across the continent and in a variety of sectors, our team of seasoned professionals has the industry experience, market knowledge, and expert insight to customize our services to meet your needs. Recognizing that effective energy management is an on-going process, we constantly revisit and revise our approaches to ensure continuous improvement.



With superior customer service, attention to detail, and an unwavering commitment to improving bottom-line performance, 360 Energy consistently strives to exceed client expectations. We are dedicated to improving our customer's profitability and environmental performance.

For more information on ISO 50001, our Certification in Energy Excellence Program, or simply getting started along the journey to Energy Excellence, please contact us at 905 634 8877, or at info@360energy.net

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