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BS EN 16001:2009 Energy Management System

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This Briefing Note was produced on behalf of Willmott Dixon by WD Re-Thinking Ltd

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Overview

Introduced in November 2009, BS EN 16001 is a 'road map' to help organisations improve energy efficiency, reduce greenhouse gas (GHG) emissions and drive down energy costs. It provides a framework of action around a "plan, do, check, act" format that fits with other existing standards on environment and quality.

BS EN 16001 specifies requirements for an energy management system in order to enable you to develop and implement a policy and objectives which take into account legal requirements and information about significant energy aspects. It is a useful document for all types and sizes of organisations and accommodates diverse geographical, cultural and social conditions. This standard applies to the activities under the control of an organisation.

Requirements with guidance for use sets out the requirements for an energy management system, including the development of an energy policy, identification of an organisation's past, present and future energy consumption, as well as the development of an energy monitoring (metering) plan. Analysis of actual versus expected energy consumption will allow businesses to put plans in place to help improve efficiency. Rather than prescribing exactly how operations should be run, BS EN 16001 provides the framework which will enable effective energy management.

Advantages of implementing BS EN 16001

- Reduce costs
- Improve business performance
- Engage management
- Comply with legislation
- Formalise energy policy and objectives
- Integrate management systems (i.e. ISO 14001, ISO 9001)
- Drive innovation

What does the standard require?

- Establish an appropriate energy policy
- Identify the energy aspects from an organisation's activities
- Identify applicable legal requirements and others to which an organisation subscribes
- Identify priorities and set appropriate energy objectives and targets
- Establish a relevant structure and programme(s) to implement the policy and achieve objectives and meet targets
- Facilitate planning, control, monitoring, preventative and corrective actions, auditing and review activities

Steps to setting up BS EN 16001 Energy Management System

1. Set up a management system
2. Develop and issue a policy
3. Plan
   - Identify and review energy aspects including energy factors; weather, occupation rate, production throughput
   - Identify and comply with legislation
   - Develop energy targets, objectives and programmes
4. Act/Implement
   - Allocate resources, responsibilities and authorities
   - Develop awareness, training and competence
   - Communicate
   - Document system and control documents
5. Check
   Monitor and measure
   - Evaluate compliance
   - Non conformity, corrective and preventative action
   - Records
   - Internally audit
6. Review
   - Inputs and outputs

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Common Obstacles

Managerial
Raising the profile of energy efficiency and getting a full management system.

Technological
Understanding the existing and available technologies.

Behavioural
Changing the habits of a lifetime.

Perceived complexity
Breaking it down into steps and providing resources.

Other Management Systems

ISO 14001 does cover the use of energy but due to the importance of energy, BS EN 16001 focuses wholly on energy management

BS EN 16001 differs from ISO 14001 by requiring:

- Energy aspect reviews – past and present consumption/estimated expected consumption
- Awareness, training and competence
- Monitoring and measurement – energy metering plan/relationships between consumption and energy factors
- Operational control – energy considerations in purchasing/design/change or restoration

Common elements with ISO 14001 and BS EN 16001 to allow for integration

- Identification of legal requirements
- Objectives, targets and programmes
- Control of documents and records

ISO standard for Energy Management System

The International Organisation for Standardisation (ISO) developed an international equivalent, ISO 50001 in 2011. The standard addresses the following:

- Energy use and consumption
- Measurement, documentation, and reporting of energy use and consumption
- Design and procurement practices for energy-using equipment, systems, and processes
- All variables affecting energy performance that can be monitored and influenced by the organisation

Why is Energy Management now so popular?

Some companies are affected by the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) which is a mandatory scheme that started in April 2010. In addition, the Energy Saving Opportunity Scheme (ESOS) is being introduced in December 2015.

Carbon Reduction Commitment

CRC was introduced because the UK has committed to reduce its greenhouse gas emissions by 80% by 2050 from a baseline of 1990. Companies affected by the CRC are those that consume over 6,000 MWh of half-hourly metered electricity i.e. broadly with electricity bills of over £500,000 in 2008.

The CRC requires organisations that meet or exceed this threshold to register with the Environment Agency, monitor their energy use, report their energy supplies annually and purchase carbon allowances to offset their emissions.

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ESOS

The Energy Saving Opportunity Scheme is a Government programme requiring all large businesses in the UK to undertake comprehensive assessments of energy use and energy efficiency opportunities at least once every four years, the deadline for the first compliance period is 5 December 2015, and then at least every four years from the date of the previous audit. The aim is to help drive the take-up of cost-effective energy efficiency measures by its participants, benefiting their competitiveness and contributing to the wider growth agenda.

It will affect businesses with more than 250 employees or an annual turnover of more than €50 million. The Public Sector is not required to participate. There may also be exemptions put in place for businesses that can demonstrate that they already have a robust approach to reducing energy use, for example if they have achieved the Carbon Trust Standard.

The Government recognises that ESOS will have synergies with a number of existing policies including the CRC, Climate Change Agreements, the EU Emissions Trading System and mandatory greenhouse gas reporting. Therefore, as a part of ESOS, organisations will be allowed to make use of the energy data they have collected under existing schemes in order to minimise the costs of compliance.

Please refer to the WD Technical Briefing Note 8 CRC for further information on the CRC and ESOS.

Carbon Trust Standard vs BS EN 16001

As with BS EN 16001, the Carbon Trust Standard for Carbon (there are other Carbon Trust Standards for water and waste) and is a voluntary certification based on the carbon footprint of an organisation.

To achieve the Carbon Trust Standard for Carbon an organisation needs to meet three criteria:

1. Provide an accurate footprint measurement including all required emission sources.
2. Demonstrate an absolute reduction of your footprint or equivalent relative efficiency improvement.
3. Demonstrate good carbon management to our standard including carbon governance, accounting, reduction methods and targets.

The route to achieve the Carbon Trust Standard comprises 3 stages:

1. Assessment - there are two options to choose from:

Certification only: If an organisation has a simple footprint, then they submit all the information and evidence to support the application and can complete their own assessment form.

Assisted certification: If an organisation needs some help in collating and presenting the data and completing the assessment form, then the Carbon Trust can provide some additional support. The assessor will spend more time working with the organisation to help in completing the assessment form as well as assessing compliance with the Standard.

In both services an independent assessor will assess the organisation's carbon reduction activities against the Standard. This assessment will include visiting the organisation, and verifying the evidence contained in the application

2. Moderation - If the assessor believes the organisation meets the Standard, the assessor will pass the application for moderation. Independent moderators will review each assessment to verify the conclusions.

3. Certification - On successful assessment, Carbon Trust Certification will certify the organisation, division or site and award the organisation with a certificate. The organisation will then be able to use the Carbon Trust Standard for Carbon logo to prove your performance in cutting carbon emissions.

Comparison between options

Scheme	Scope	Status	Certification Body
BS EN 16001	Energy Management only	British Standard and European Norm	Various including BSI, Lloyds, LRQA etc
Carbon Trust Standard	Carbon footprint reductions	Recognised Carbon Trust scheme	Carbon Trust Assessors

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References and further information

1. http://www.carbontrust.com/client-services/footprinting/footprint-certification
2. http://www.iso.org/iso/iso_50001_energy.pdf
3. http://www.iso.org/iso/home/standards/management-standards/iso50001.htm

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