NSAI Standards

Irish Standard
I.S. EN ISO 50001:2011

Energy management systems - Requirements with guidance for use

I.S. EN ISO 50001:2011

Incorporating amendments/corrigenda issued since publication:

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:	*This document is based on:*	*Published:*
EN 16001:2009	EN ISO 50001:2011 EN 16001:2009	28 October, 2011 1 July, 2009

This document was published
under the authority of the NSAI and comes into effect on:

15 November, 2011

ICS number:
27.010

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Údarás um Chaighdeáin Náisiúnta na hÉireann

I.S. EN ISO 50001:2011

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 50001

October 2011

ICS 27.010

Supersedes EN 16001:2009

English version

Energy management systems - Requirements with guidance for use (ISO 50001:2011)

Systèmes de management de l'énergie - Exigences et recommandations de mise en oeuvre (ISO 50001:2011)

Energiemanagementsysteme - Anforderungen mit Anleitung zur Anwendung (ISO 50001:2011)

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Ref. No. EN ISO 50001:2011 E

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Foreword

The text of ISO 50001:2011 has been prepared by Technical Committee ISO/TC 242 “Energy Management” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 50001:2011 by Technical Committee CEN/CLC/JWG 3 “Quality management and corresponding general aspects for medical devices” the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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I.S. EN ISO 50001:2011

INTERNATIONAL STANDARD

ISO 50001

First edition
2011-06-15

Energy management systems — Requirements with guidance for use

Systèmes de management de l'énergie — Exigences et recommandations de mise en œuvre

Reference number
ISO 50001:2011(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 50001 was prepared by Project Committee ISO/PC 242, *Energy Management*.

Introduction

The purpose of this International Standard is to enable organizations to establish the systems and processes necessary to improve energy performance, including energy efficiency, use and consumption. Implementation of this International Standard is intended to lead to reductions in greenhouse gas emissions and other related environmental impacts and energy cost through systematic management of energy. This International Standard is applicable to all types and sizes of organizations, irrespective of geographical, cultural or social conditions. Successful implementation depends on commitment from all levels and functions of the organization, and especially from top management.

This International Standard specifies energy management system (EnMS) requirements, upon which an organization can develop and implement an energy policy, and establish objectives, targets, and action plans which take into account legal requirements and information related to significant energy use. An EnMS enables an organization to achieve its policy commitments, take action as needed to improve its energy performance and demonstrate the conformity of the system to the requirements of this International Standard. This International Standard applies to the activities under the control of the organization, and application of this International Standard can be tailored to fit the specific requirements of the organization, including the complexity of the system, degree of documentation, and resources.

This International Standard is based on the Plan - Do - Check - Act (PDCA) continual improvement framework and incorporates energy management into everyday organizational practices, as illustrated in Figure 1.

NOTE In the context of energy management, the PDCA approach can be outlined as follows:

— Plan: conduct the energy review and establish the baseline, energy performance indicators (EnPIs), objectives, targets and action plans necessary to deliver results that will improve energy performance in accordance with the organization's energy policy;

— Do: implement the energy management action plans;

— Check: monitor and measure processes and the key characteristics of operations that determine energy performance against the energy policy and objectives, and report the results;

— Act: take actions to continually improve energy performance and the EnMS.

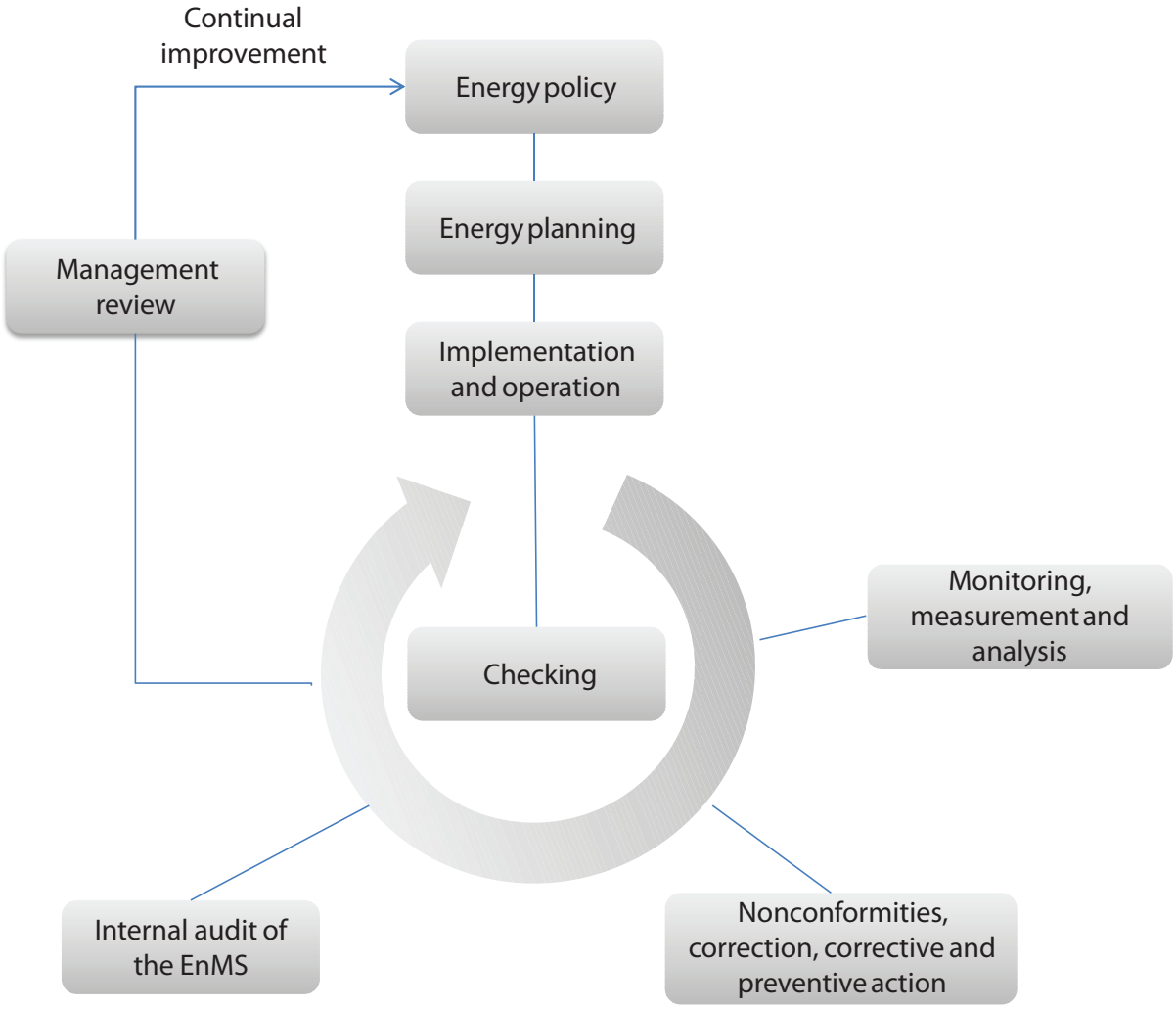

Figure 1 — Energy management system model for this International Standard

Worldwide application of this International Standard contributes to more efficient use of available energy sources, to enhanced competitiveness and to reducing greenhouse gas emissions and other related environmental impacts. This International Standard is applicable irrespective of the types of energy used.

This International Standard can be used for certification, registration and self-declaration of an organization's EnMS. It does not establish absolute requirements for energy performance beyond the commitments in the energy policy of the organization and its obligation to comply with applicable legal requirements and other requirements. Thus, two organizations carrying out similar operations, but having different energy performance, can both conform to its requirements.

This International Standard is based on the common elements of ISO management system standards, ensuring a high level of compatibility notably with ISO 9001 and ISO 14001.

NOTE Annex B shows the relationship between this International Standard and ISO 9001:2008, ISO 14001:2004 and ISO 22000:2005.

An organization can choose to integrate this International Standard with other management systems, including those related to quality, the environment and occupational health and safety.

Energy management systems — Requirements with guidance for use

1 Scope

This International Standard specifies requirements for establishing, implementing, maintaining and improving an energy management system, whose purpose is to enable an organization to follow a systematic approach in achieving continual improvement of energy performance, including energy efficiency, energy use and consumption.

This International Standard specifies requirements applicable to energy use and consumption, including measurement, documentation and reporting, design and procurement practices for equipment, systems, processes and personnel that contribute to energy performance.

This International Standard applies to all variables affecting energy performance that can be monitored and influenced by the organization. This International Standard does not prescribe specific performance criteria with respect to energy.

This International Standard has been designed to be used independently, but it can be aligned or integrated with other management systems.

This International Standard is applicable to any organization wishing to ensure that it conforms to its stated energy policy and wishing to demonstrate this to others, such conformity being confirmed either by means of self-evaluation and self-declaration of conformity, or by certification of the energy management system by an external organization.

This International Standard also provides, in Annex A, informative guidance on its use.

2 Normative references

No normative references are cited. This clause is included in order to retain clause numbering identical with other ISO management system standards.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
boundaries
physical or site limits and/or organizational limits as defined by the organization

EXAMPLE A process; a group of processes; a site; an entire organization; multiple sites under the control of an organization.

3.2
continual improvement
recurring process which results in enhancement of energy performance and the energy management system

NOTE 1 The process of establishing objectives and finding opportunities for improvement is a continual process.

NOTE 2 Continual improvement achieves improvements in overall energy performance, consistent with the organization's energy policy.

3.3
correction
action to eliminate a detected **nonconformity** (3.21)

NOTE Adapted from ISO 9000:2005, definition 3.6.6.

3.4
corrective action
action to eliminate the cause of a detected **nonconformity** (3.21)

NOTE 1 There can be more than one cause for a nonconformity.

NOTE 2 Corrective action is taken to prevent recurrence whereas preventive action is taken to prevent occurrence.

NOTE 3 Adapted from ISO 9000:2005, definition 3.6.5.

3.5
energy
electricity, fuels, steam, heat, compressed air, and other like media

NOTE 1 For the purposes of this International Standard, energy refers to the various forms of energy, including renewable, which can be purchased, stored, treated, used in equipment or in a process, or recovered.

NOTE 2 Energy can be defined as the capacity of a system to produce external activity or perform work.

3.6
energy baseline
quantitative reference(s) providing a basis for comparison of energy performance

NOTE 1 An energy baseline reflects a specified period of time.

NOTE 2 An energy baseline can be normalized using variables which affect energy use and/or consumption, e.g. production level, degree days (outdoor temperature), etc.

NOTE 3 The energy baseline is also used for calculation of energy savings, as a reference before and after implementation of energy performance improvement actions.

3.7
energy consumption
quantity of energy applied

3.8
energy efficiency
ratio or other quantitative relationship between an output of performance, service, goods or energy, and an input of energy

EXAMPLE Conversion efficiency; energy required/energy used; output/input; theoretical energy used to operate/energy used to operate.

NOTE Both input and output need to be clearly specified in quantity and quality, and be measurable.

3.9
energy management system
EnMS
set of interrelated or interacting elements to establish an energy policy and energy objectives, and processes and procedures to achieve those objectives

3.10
energy management team
person(s) responsible for effective implementation of the energy management system activities and for delivering energy performance improvements

NOTE The size and nature of the organization, and available resources, will determine the size of the team. The team may be one person, such as the management representative.

3.11
energy objective
specified outcome or achievement set to meet the organization's energy policy related to improved energy performance

3.12
energy performance
measurable results related to **energy efficiency** (3.8), **energy use** (3.18) and **energy consumption** (3.7)

NOTE 1 In the context of energy management systems, results can be measured against the organization's energy policy, objectives, targets and other energy performance requirements.

NOTE 2 Energy performance is one component of the performance of the energy management system.

3.13
energy performance indicator
EnPI
quantitative value or measure of energy performance, as defined by the organization

NOTE EnPIs could be expressed as a simple metric, ratio or a more complex model.

3.14
energy policy
statement by the organization of its overall intentions and direction of an organization related to its energy performance, as formally expressed by top management

NOTE The energy policy provides a framework for action and for the setting of energy objectives and energy targets.

3.15
energy review
determination of the organization's energy performance based on data and other information, leading to identification of opportunities for improvement

NOTE In other regional or national standards, concepts such as identification and review of energy aspects or energy profile are included in the concept of energy review.

3.16
energy services
activities and their results related to the provision and/or use of energy

3.17
energy target
detailed and quantifiable energy performance requirement, applicable to the organization or parts thereof, that arises from the energy objective and that needs to be set and met in order to achieve this objective

3.18
energy use
manner or kind of application of energy

EXAMPLE Ventilation; lighting; heating; cooling; transportation; processes; production lines.