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**Energy management systems —  
Requirements for bodies providing  
audit and certification of energy  
management systems**

*Systèmes de management de l'énergie — Exigences pour les  
organismes procédant à l'audit et à la certification de systèmes de  
management de l'énergie*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

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ISO 50003 was prepared by Technical Committee ISO/TC 242, *Energy management*, in collaboration with the ISO Committee on conformity assessment (CASCO).

## Introduction

This International Standard is intended to be used in conjunction with ISO/IEC 17021:2011. At the time of publication of this International Standard, ISO/IEC 17021:2011 is under revision and is to be cancelled by replaced by ISO/IEC 17021-1. For the purposes of this International Standard, ISO/IEC 17021:2011 and ISO/IEC 17021-1 are considered to be equivalent. Upon publication of ISO/IEC 17021-1, all references in this International Standard to ISO/IEC 17021:2011 will be considered to be references to ISO/IEC 17021-1.

In addition to the requirements of ISO/IEC 17021:2011, this International Standard specifies requirements reflecting the specific technical area of energy management systems (EnMS) that are needed to ensure the effectiveness of the audit and certification. In particular, this International Standard addresses the additional requirements necessary for the audit planning process, the initial certification audit, conducting the on-site audit, auditor competence, duration of EnMS audits, and multi-site sampling.

[Clause 4](#) describes the characteristics of EnMS auditing, [Clause 5](#) describes EnMS auditing process requirements and [Clause 6](#) describes competence requirements for personnel involved in the EnMS certification process. [Annexes A, B](#) and [C](#) provide additional information to complement ISO/IEC 17021:2011. This International Standard deals with energy management system audits for certification purposes, but it does not deal with energy audits whose purpose is to establish a systematic analysis of energy consumption and energy use and which are defined in ISO 50002.

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# Energy management systems — Requirements for bodies providing audit and certification of energy management systems

## 1 Scope

This International Standard specifies requirements for competence, consistency and impartiality in the auditing and certification of energy management systems (EnMS) for bodies providing these services. In order to ensure the effectiveness of EnMS auditing, this International Standard addresses the auditing process, competence requirements for personnel involved in the certification process for energy management systems, the duration of audits and multi-site sampling.

This International Standard is intended to be used in conjunction with ISO/IEC 17021:2011. The requirements of ISO/IEC 17021:2011 also apply to this International Standard.

## 2 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17021:2011<sup>1)</sup>, *Conformity assessment — Requirements for bodies providing audit and certification of management systems*

ISO 50001, *Energy management systems — Requirements with guidance for use*  
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## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 50001 and ISO/IEC 17021:2011 and the following apply.

### 3.1 audit evidence

records, statements of fact or other information which are relevant to the audit criteria and verifiable

Note 1 to entry: Audit evidence can be qualitative or quantitative.

### 3.2 central office

location or network of local offices or branches (sites) of a multi-site organization, at which EnMS activities are fully or partially planned, controlled or managed

Note 1 to entry: The central office is not necessarily the headquarters or a single location.

### 3.3 EnMS effective personnel

people who actively contribute to meeting the requirements of an EnMS

Note 1 to entry: EnMS effective personnel contribute to the requirements of the EnMS within the scope and boundaries for establishing, implementing or maintaining energy performance improvements.

1) To be revised by ISO/IEC 17021-1.

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Note 2 to entry: EnMS effective personnel impact energy performance or the effectiveness of the EnMS and may include contractors.

Note 3 to entry: [Annex A](#) contains more information on EnMS effective personnel.

### 3.4

#### **EnMS improvement**

improvement in effectiveness of the management system

### 3.5

#### **energy performance improvement**

improvement in measurable results related to energy efficiency, energy use, or energy consumption compared to the energy baseline

Note 1 to entry: Additional information can be found in [Annex C](#).

### 3.6

#### **major nonconformity**

<energy management system> nonconformity that affects the capability of the management system to achieve the intended results

Note 1 to entry: Classifying nonconformities as major could be as follows:

- audit evidence that energy performance improvement was not achieved;
- a significant doubt that effective process control is in place;
- a number of minor nonconformities associated with the same requirements or issue could demonstrate a systemic failure and thus constitute a major nonconformity.

### 3.7

#### **site**

location with boundaries within which energy source(s), energy use(s) and energy performance are under the control of the organization

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## 4 Characteristics of energy management system auditing

Energy management systems enable an organization to follow a systematic approach in achieving continual improvement of energy performance, including energy efficiency, energy use and energy consumption. This International Standard specifies additional requirements to those specified in ISO/IEC 17021:2011 for effective conformity assessment audits of an EnMS.

## 5 Auditing process requirements

### 5.1 General

All the requirements defined in ISO/IEC 17021:2011 and this International Standard shall be applied to the EnMS auditing process.

### 5.2 Confirming the scope of certification

The organization shall define the scope and boundaries of the EnMS; however, the certification body shall confirm the suitability of the scope and boundaries at each audit.

The scope of the certification shall define the boundaries of the EnMS including activities, facilities, processes and decisions related to the EnMS. The scope may be an entire organization with multi-site, a site within an organization, or a subset or subsets within a site such as a building, facility or process. When defining the boundaries, an organization shall not exclude energy sources.



### 5.3 Determining audit time

#### 5.3.1 Audit time

In determining the audit time, the certification body shall include the following factors:

- a) energy sources;
- b) significant energy uses;
- c) energy consumption;
- d) the number of EnMS effective personnel.

The audit time includes the on-site time at the organization's location, audit planning, document reviewing and audit reporting. The audit duration table provided in [Annex A](#) shall be used to determine audit duration. The calculation method of audit duration is described in [Annex A](#). In cases where the actual processes and organizational structure are such that reduction in audit duration can be justified, the certification body shall provide the rationale for the decision and ensure that it is recorded.

The audit duration may be reduced if the organization has integrated the EnMS with another certified management system. The adjustment in time due to another certified management system shall not exceed a 20 % reduction.

The audit man days are based on eight hours per day. Adjustments may be required based on local, regional, or national legal requirements.

#### 5.3.2 EnMS effective personnel

The number of EnMS effective personnel and complexity criteria, as defined in [Annex A](#), is used as the basis for the calculation of the audit duration. The certification body shall define and document a process for determining the number of EnMS effective personnel for the scope of the certification and for each audit in the audit programme. The process for determining the number of EnMS effective personnel shall ensure the persons who actively contribute to meeting the requirements of the EnMS are included. When regulation requires personnel for operations and maintenance of the EnMS activities to be identified, those personnel shall be part of the EnMS effective personnel.

### 5.4 Multi-site sampling

Certification of multi-sites based on sampling is allowed. The requirements of multi-site sampling as defined in [Annex B](#) shall be followed.

### 5.5 Conducting audits

When conducting the audit, the auditor shall collect and verify audit evidence related to energy performance which includes at a minimum:

- energy planning (all sections);
- operational control;
- monitoring measurement and analysis.

When classifying nonconformities for ISO 50001, the definition of major nonconformity for EnMS (see [3.6](#)) will be used by the auditor.

## 5.6 Audit report

An audit report shall include:

- a) scope and boundaries of the EnMS being audited;
- b) statement of achievement of continual improvement of the EnMS and energy performance improvement with audit evidence to support the statements.

## 5.7 Initial certification audit

### 5.7.1 Stage 1 audit

The Stage 1 audit shall include the following:

- a) confirmation of scope and boundaries of the EnMS for certification;
- b) review of a graphical or narrative description of the organizations facilities, equipment, systems and processes for the identified scope and boundaries;
- c) confirmation of the number of EnMS effective personnel, energy sources, significant energy uses and annual energy consumption, in order to confirm the audit duration;
- d) review of the documented results of the energy planning process;
- e) review of a list of the energy performance improvement opportunities identified as well as the related objectives, targets and action plans.

### 5.7.2 Stage 2 audit

During the Stage 2 audit, the certification body shall gather the necessary audit evidence to determine whether or not energy performance improvement has been demonstrated prior to making a certification decision. Confirmation of energy performance improvement is required for granting the initial certification. Examples on how an organization may demonstrate energy performance improvement are provided in [Annex C](#).

## 5.8 Surveillance audit

During the surveillance audits, the certification body shall review the necessary audit evidence to determine whether or not continual energy performance improvement has been demonstrated.

## 5.9 Recertification audit

During the recertification audit, the certification body shall review the necessary audit evidence to determine whether or not continual energy performance improvement has been demonstrated prior to making a recertification decision. The recertification audit shall also take into account any major change in facilities, equipment, systems or processes. Confirmation of continual energy performance improvement is required for granting the recertification.

**NOTE** Energy performance improvement can be affected by changes in facilities, equipment, systems or processes, business changes, or other conditions that result in a change or a need to change the energy baseline.

## 6 Competence requirements

### 6.1 General

The competence requirements for the auditor(s) and personnel involved in the EnMS certification process are defined in [6.2](#) and [6.3](#).

## 6.2 General competence

All personnel involved in the EnMS audit and certification activities shall have a level of competence that includes the generic competencies described in ISO/IEC 17021:2011 as well as the EnMS general knowledge described in Table 1 of this International Standard, where “X” indicates that the certification body shall define the criteria.

**Table 1 — Required EnMS general knowledge**

Knowledge	Certification functions		
	Conducting the application review to determine required audit team competence, to select the audit team members, and to determine the audit time	Reviewing audit reports and making certification decisions	Auditing
EnMS principles	X	X	X
Energy specific terminology	X	X	X
Basic energy principles	X	X	X
Energy related legal and other requirements	X	X	X
Energy performance indicators, energy baseline, relevant variables and static factors		X	X
Energy performance evaluation and related basic statistics		X	X
Common energy systems For example: steam systems, refrigeration systems, motor systems, process heat, etc.		X	X
Energy performance improvement actions (EPIA)		X	X
Energy performance improvement technology		X	X
General measurement and verification (M&V)		X	X
Measurement, monitoring and analysis of energy data		X	X

## 6.3 Technical competence

In addition to the general competence requirements specified in Table 1, the certification body shall define the competence criteria for the technical areas described in Table 2. The certification body shall define the technical area and competence criteria if the organization does not fit in one of the eight technical areas, defined in Table 2.