
Energy audits — Requirements with guidance for use

*Audits énergétiques — Exigences et recommandations de mise en
œuvre*



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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).

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).

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

The committee responsible for this document is Technical Committee ISO/TC 242, *Energy management*.

Introduction

The purpose of this International Standard is to define the minimum set of requirements leading to the identification of opportunities for the improvement of energy performance.

An energy audit comprises a detailed analysis of the energy performance of an organization, equipment, system(s) or process(es). It is based on appropriate measurement and observation of energy use, energy efficiency and consumption. Energy audits are planned and conducted as part of the identification and prioritization of opportunities to improve energy performance, reduce energy waste and obtain related environmental benefits. Audit outputs include information on current use and performance and they provide ranked recommendations for improvement in terms of energy performance and financial benefits.

An energy audit can support an energy review and can facilitate monitoring, measurement and analysis as described in ISO 50001, or it can be used independently.

This International Standard allows for differences in approach and in terms of scope, boundary and audit objective and seeks to harmonize common aspects of energy auditing in order to enhance clarity and transparency.

The energy audit process is presented as a simple chronological sequence, but this does not preclude repeated iterations of certain steps.

The main body of this International Standard covers the general requirements and framework common to all energy audits that can be supplemented by equivalent national audit standards. For auditing of specific types of facilities, processes or equipment, refer to the relevant international, national and local standards and guidelines, some of which are referenced in the Bibliography.

In this International Standard, the following verbal forms are used:

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” indicates a permission;
- “can” indicates a possibility or a capacity.

Energy audits — Requirements with guidance for use

1 Scope

This International Standard specifies the process requirements for carrying out an energy audit in relation to energy performance. It is applicable to all types of establishments and organizations, and all forms of energy and energy use.

This International Standard specifies the principles of carrying out energy audits, requirements for the common processes during energy audits, and deliverables for energy audits.

This International Standard does not address the requirements for selection and evaluation of the competence of bodies providing energy audit services, and it does not cover the auditing of an organization's energy management system, as these are described in ISO 50003.

This International Standard also provides informative guidance on its use (see [Annex A](#)).

2 Normative references

There are no normative references.

3 Terms and definitions

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

3.1

audit objective

purpose of an *energy audit* ([3.3](#)) agreed between the *organization* ([3.13](#)) and the *energy auditor* ([3.5](#))

3.2

boundary

physical or site limits and/or organizational limits as defined by the *organization* ([3.13](#))

Note 1 to entry: The boundary of an energy management system can be different from the boundary of an *energy audit* ([3.3](#)).

Note 2 to entry: The energy audit can include one or more boundaries.

EXAMPLE The whole site and all energy using systems; the boiler plant; the vehicle fleet.

3.3

energy audit

systematic analysis of *energy use* ([3.12](#)) and *energy consumption* ([3.7](#)) within a defined *energy audit scope* ([3.4](#)), in order to identify, quantify and report on the opportunities for improved *energy performance* ([3.10](#))

Note 1 to entry: "Energy audit" is the normal expression in English. There are other expressions for the same concept, e.g. "diagnosi" in Italian and "diagnostic" in French.

3.4

energy audit scope

extent of *energy uses* ([3.12](#)) and related activities to be included in the *energy audit* ([3.3](#)), as defined by the *organization* ([3.13](#)) in consultation with the *energy auditor* ([3.5](#)), which can include several boundaries

EXAMPLE Organization, facility/facilities, equipment, system(s) and process(es).