



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

**ILNAS-EN 16247-1:2022**

## **Energy audits - Part 1: General requirements**

Audits énergétiques - Partie 1 : Exigences  
générales

Energieaudits - Teil 1: Allgemeine  
Anforderungen

**08/2022**



## National Foreword

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ILNAS-EN 16247-1:2022

EUROPEAN STANDARD **EN 16247-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2022

ICS 03.120.10; 27.015

Supersedes EN 16247-1:2012

English version

## Energy audits - Part 1: General requirements

Audits énergétiques - Partie 1 : Exigences générales

Energieaudits - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 3 July 2022.

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## European foreword

This document (EN 16247-1:2022) has been prepared by the Joint Technical Committee CEN-CENELEC/JTC 14 “Energy management and energy efficiency in the framework of energy transition”, 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of an identical text or by endorsement, at the latest by February 2023, and conflicting national standards shall be withdrawn at the latest by February 2023.

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

This document supersedes EN 16247-1:2012.

Significant changes compared to the previous edition are:

- a) Terms and definition updated to be compliant with ISO 50001;
- b) New Annex A Energy Audit Process Flow Diagram added;
- c) New Annex B Examples of energy Audit level added;
- d) New Annex C Sampling (Based on ISO 19011:2018 Guidelines for auditing management systems) added.

This Part covers the general requirements common to all energy audits. There are four further parts of the EN 16247 series, which provide additional material to Part 1 for four specific sectors.

The other parts of EN 16247 “*Energy audits*” are:

- *Part 2: Buildings;*
- *Part 3: Processes;*
- *Part 4: Transport;*
- *Part 5: Competence of energy auditors.*

This document has been prepared under a mandate given to CEN and CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN and CENELEC websites.

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## Introduction

An energy audit is an important step for an organization, whatever its size or type, wanting to improve its energy performance, reduce energy consumption and bring related environmental and other benefits.

This document defines the attributes of a high-quality energy audit. It states the requirements for energy audits and corresponding obligations within the energy auditing process. It recognizes that there are differences in approach to energy auditing in terms of scope, aims and thoroughness, but seeks to harmonize common aspects of energy auditing in order to bring more clarity and transparency to the market for energy auditing services. The energy audit process is presented as a simple chronological sequence; this does not preclude however repeated iterations of certain steps.

This document applies to commercial, industrial, residential and public-sector organizations. This document does not deal with the energy audit programme/scheme properties (such as programme administration, training of energy auditors, quality control issues, energy auditors' tools, etc.).

## 1 Scope

This document specifies the requirements, common methodology and deliverables for energy audits. It is applicable to all forms of establishments and organizations, all forms of energy and energy uses.

This document covers the general requirements common to all energy audits. Specific energy audit requirements complete the general requirements in separate parts dedicated to energy audits for buildings, industrial processes and transport.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **energy audit**

systematic inspection and analysis of energy use and energy consumption of a site, building, system or organization with the objective of identifying energy flows and the potential for energy efficiency improvements and reporting them

### 3.2

#### **energy auditor**

individual, group of people or body carrying out an energy audit

Note 1 to entry: A group or body can include subcontractors.

### 3.3

#### **audited object**

site, building, equipment, system, process, vehicle, service or *organization* (3.4) which is the subject of the *energy audit* (3.1)

### 3.4

#### **organization**

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Note 1 to entry: The concept of organization includes, but is not limited to, sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

[SOURCE: ISO 50001:2018, 3.1.1]

### 3.5

#### **energy consumption**

quantity of *energy* (3.16) applied

[SOURCE: ISO 50001:2018, 3.5.2]

**3.6****energy efficiency**

ratio or other quantitative relationship between an output of performance, service, goods, commodities, or *energy* (3.16), and an input of energy

EXAMPLE Conversion efficiency; energy required/energy consumed.

Note 1 to entry: Both input and output should be clearly specified in terms of quantity and quality and be measurable.

[SOURCE: ISO 50001:2018, 3.5.3]

**3.7****energy performance**

measurable result(s) related to *energy efficiency* (3.6), *energy use* (3.10) and *energy consumption* (3.5)

Note 1 to entry: Energy performance can be measured against the *organization's* (3.4) objectives, *energy targets* (3.20) and other energy performance requirements.

Note 2 to entry: Energy performance is one component of the *performance* of the *energy management system* (3.18).

[SOURCE: ISO 50001:2018, 3.4.3, modified]

**3.8****energy performance indicator****EnPI**

measure or unit of *energy performance* (3.7), as defined by the *organization* (3.4)

Note 1 to entry: EnPI(s) can be expressed by using a simple metric, ratio, or a model, depending on the nature of the activities being measured.

Note 2 to entry: See ISO 50006 for additional information on EnPI(s).

[SOURCE: ISO 50001:2018, 3.4.4]

**3.9****energy performance improvement action****EPIA**

action or measure or group of action or measures implemented or planned within an *organization* (3.4) intended to achieve *energy performance improvement* (3.21) through technological, managerial or operational, behavioural, economical, or other changes

[SOURCE: ISO 50015:2014, 3.5]

**3.10****energy use**

application of *energy* (3.16)

EXAMPLE Ventilation; lighting; heating; cooling; transportation; data storage; production process

Note 1 to entry: Energy use is sometimes referred to as “energy end-use”.

[SOURCE: ISO 50001:2018, 3.5.4]