ILNAS

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

ILNAS-EN 16247-3:2022

Energy audits - Part 3: Processes

Audits énergétiques - Partie 3 : Procédés

Energieaudits - Teil 3: Prozesse

08/2022

National Foreword

This European Standard EN 16247-3:2022 was adopted as Luxembourgish Standard ILNAS-EN 16247-3:2022.

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EUROPEAN STANDARD EN 16247-3

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English version

Energy audits - Part 3: Processes

Audits énergétiques - Partie 3 : Procédés

Energieaudits - Teil 3: Prozesse

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

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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European foreword

This document (EN 16247-3:2022) 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of an identical text or by endorsement, at the latest by February 2023, and conflicting national standards shall be withdrawn at the latest by February 2023.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 16247-3:2014.

Significant changes compared to the previous edition are:

a) terms and definition updated;

b) structure aligned with EN 16247-1;

c) sampling method allowed as energy audit process;

d) new Annex D with an example of methodology for multi-sites audit sampling in industrial companies.

This document is part of series EN 16247 “*Energy audits*”, which comprises the following:

— *Part 1: General requirements*;

— *Part 2: Buildings*;

— *Part 3: Processes*;

— *Part 4: Transport*;

— *Part 5: Competence of energy auditors.*

This Part provides additional material to Part 1 for the Process sector and is intended to be used in conjunction with Part 1.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

An energy audit can help an organization to identify opportunities to improve energy performance. It can be part of a site wide energy management system.

There are various sectors with important differences in processes and utilities. It should be emphasized that there are many types of processes in industry and commerce, with important differences in energy use and energy consumption. In general, energy is used:

— directly by a process, e.g. furnaces, direct fired dryers, etc.;

— indirectly by a process (e.g. heat exchange, distillation, extrusion, etc.) including the specific conditions of production (e.g. start-up, shut-down, product change over, cleaning, maintenance, laboratory and product transfer);

— utility processes (e.g. motor driven systems such as fans, pumps, motors, compressors, etc., steam, hot water), including on site power plants;

— other processes (e.g. sterilization in hospitals, fume cupboards, laboratories, etc.).

This document defines the attributes of an appropriate quality energy audit for processes in addition to EN 16247-1, which gives the general requirements for energy audits.

1 Scope

This document specifies the requirements, methodology and deliverables of an energy audit within a process. These consist of:

a) organizing and conducting an energy audit;

b) analysing the data from the energy audit;

c) reporting and documenting the energy audit findings.

This part of the standard applies to sites or parts of sites where a significant part of the energy use is due to processes. It is used in conjunction with and is supplementary to EN 16247-1*, Energy audits — Part 1: General requirements*. It provides additional requirements to EN 16247-1 and is applied simultaneously.

A process can include one or more production lines or services, offices, laboratories, research centres, packaging and warehouse sections with specific operational conditions and site transportation. An energy audit can include the whole site or part of a site.

If buildings are included in the scope of the energy audit, the energy auditor can choose to apply EN 16247-2, *Energy Audits — Part 2: Buildings*. If on-site transport on a site is included in the scope of the energy audit, the energy auditor can choose to apply EN 16247-4, *Energy audits — Part 4: Transport.*

NOTE The decision to apply Parts 2 and/or 4 is expected to be made during the preliminary contact, see 5.1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16247-1:2022, *Energy audits — Part 1: General requirements*

EN 16247-2:2022, *Energy audits — Part 2: Buildings*

EN 16247-4:2022, *Energy audits — Part 4: Transport*

EN 16247-5, *Energy audits — Part 5: Competence of energy auditors*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16247-1 and the following 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
production process
all the steps necessary to manufacture a product or to deliver a service

Note 1 to entry: Production process could include specific facilities for health, safety and environment pollution control.

3.2
utility
energy carrier necessary for the process and auxiliary

Note 1 to entry: A utility could be generated on-site, off-site, or purchased from a third party.

EXAMPLE Steam, hot water, compressed air, etc.

3.3
utility process
set of utility equipment and distribution

Note 1 to entry: If the utility is purchased from a third party, utility process is only the utility distribution.

Note 2 to entry: All processes, not linked to one specific process or service, and whose purpose is limited to the transformation, distribution or storage of energy.

3.4
site
processes within the boundary of the organization

Note 1 to entry: This may include pollution treatment processes and energy recovery, and waste product.

3.5
building
construction as a whole, including its envelope and all technical building systems, for which energy may be used to condition the indoor climate, to provide domestic hot water and illumination and other services related to the use of the building and the activities performed within the building

Note 1 to entry: The term can refer to the building as a whole or to parts thereof that have been designed or altered to be used separately.

Note 2 to entry: The building could include its site location and related external environment.

[SOURCE: EN 16247-2:2022, 3.1]

3.6
energy
electricity, fuels, steam, heat, compressed air, and other similar media

Note 1 to entry: For the purposes of this document, energy refers to the various type of energy, including renewable, which can be purchased, stored, treated, used in equipment or in a process, or recovered.

[SOURCE: EN ISO 50001:2018, 3.5]

3.7
energy performance improvement action
EPIA
action or measure or group of action or measures implemented or planned within an organization intended to achieve energy performance improvement through technological, managerial or operational, behavioural, economical, or other changes

[SOURCE: EN 16247-1:2022, 3.9]