



SLOVENSKI STANDARD

SIST EN 16247-4:2014

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Energetske presoje - 4. del: Transport

Energy audits - Part 4: Transport

Energieaudits - Teil 4: Transport

Audits énergétiques - Partie 4: Transport

Ta slovenski standard je istoveten z: **EN 16247-4:2014**

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ICS:

03.120.10	Vodenje in zagotavljanje kakovosti	Quality management and quality assurance
03.220.01	Transport na splošno	Transport in general
27.010	Prenos energije in toplote na splošno	Energy and heat transfer engineering in general

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EUROPEAN STANDARD

EN 16247-4

NORME EUROPÉENNE

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Energy audits - Part 4: Transport

Audits énergétiques - Partie 4: Transport

Energieaudits - Teil 4: Transport

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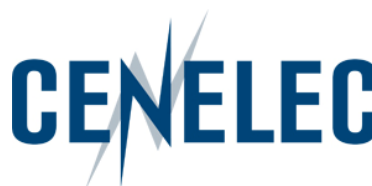
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Foreword

This document (EN 16247-4:2014) has been prepared by Technical Committee CEN/CLC/JWG 1 “Energy audits”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by November 2014 and conflicting national standards shall be withdrawn at the latest by November 2014.

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.

This Part provides additional material to Part 1 for the Transport sector and should be used in conjunction with Part 1.

This European Standard is part of the 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.

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

0 Introduction

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

This European Standard is intended for the energy auditing of mobile assets e.g. vehicles, railways, marine vessels, aircraft, as well as mobile plant.

Due to the mobility of the assets in transport, energy auditing in this area is especially challenging. For example, the meetings are harder to organize, the activities involved are harder to inspect.

The first part of this standard harmonizes the procedures for energy auditing in transport systems. On the other hand, there are certain aspects which are particular to every transport mode. For example, whereas the mobile assets in road transport are numerous, similar and replaced frequently, the assets for marine and air transport are large and long-lived.

In order to state the energy auditing features of every transport mode, there is a specific section for each of them at the end of this document.

Finally, the possibility of planning and selecting the mode of transport (and, sometimes, using different modes for a unique transport service) is also a specific aspect of the transport activity. Therefore, this standard will place special attention to this topic.

NOTE An energy audit is not a fiscal method, the term and the nature of an energy audit are defined in EN 16247-1 Energy Audits.

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1 Scope

This European Standard shall be 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 shall be applied simultaneously.

The procedures described here apply to the different modes of transport (road, rail, marine and aviation), as well as the different ranges (local to long distance) and what is transported (basically, goods and people).

This European Standard specifies the requirements, methodology and deliverables specific to energy audits in the transport sector, every situation in which a displacement is made, no matter who the operator is (a public or private company or whether the operator is exclusively dedicated to transport or not), is also addressed in this document.

This European Standard advises on both the optimization of energy within each mode of transport, as well as selecting the best mode of transport in each situation; the conclusions drawn by the energy audit can influence decisions on infrastructure and investment e.g. in teleconferencing or web meetings.

Energy audits of buildings and processes associated with transport can be conducted respectively with the EN 16247-2 Buildings and EN 16247-3 Processes e.g. pipelines, depots and escalators/travelators. This part of the standard does not include the infrastructure which supplies energy e.g. the electricity generation of energy for railways.

2 Normative references

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The following 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.

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

UIC/UNIFE TecRec 100 001 — *Specification and verification of energy consumption for railway rolling stock, 2010*

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 16247-1 and the following apply.

3.1

transport

activity that implies the movement of people or goods from one place to another

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3.2**vehicle**

object used to perform the transport, may include the container, trailer or carriage where energy is consumed

Note 1 to entry: This document will use this term, instead of the more general one (audited object), from part 1 of this standard.

3.3**energy**

includes fuels, inclusive of biofuels, electricity inclusive of regenerated/recovered energy from braking etc. Excludes feedstock energy sources such as Aqueous Urea Solution ('Adblue™' ISO 22241-1)

3.4**fleet**

group of vehicles

3.5**train set****consist**

railway terminology used to describe a "train" varies between countries, very often it means a single scheduled service. In the UK, the interchangeable terms "set" and "unit" are used to refer to a group of permanently or semi-permanently coupled vehicles, such as those of a diesel multiple unit. In the United Kingdom Section 83(1) of the Railways Act 1993 defines "train" as follows:

- a) two or more items of rolling stock coupled together, at least one of which is a locomotive;
- b) a locomotive not coupled to any other rolling stock.

In the United States, the term 'consist' is used to describe the group of rail vehicles which make up a train

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3.6**operator**

person that governs the vehicle operation with his/her own hands, e.g. driver, pilot, helmsman, etc.(not the organization being audited)

3.7**organization**

owner or operator of the fleet of vehicles subject to the audit

3.8**transport service**

service provided to a beneficiary for the transport of goods or of a person from a departure point to a destination point

3.9**segment**

group of vehicles performing the same type of transport; i.e. subset of a fleet having a certain common feature

Note 1 to entry: The criteria for segment definition depend on the kind of transport the audited organization performs and the kind of vehicles used. An example might be differentiating the vehicles performing local distribution as opposed to long distance shipment in two different segments.

3.10

operators' representative

group of workers in charge of communicating the interest of the operators to the management of the organization

3.11

load factor

ratio of the average load or passenger number to total vehicle capacity in tonnes, volume or seats/standing

4 Quality requirements

4.1 Qualifications

With reference to prEN 16247-5¹, the energy auditor shall have relevant knowledge of the different modes of transport and energy sources used in transport by the organization subject to the audit.

4.2 Energy audit process

4.2.1 General

Due to the complexity, mobility and time critical nature of transport operations, the site visit needs to be done within restrictions for both auditor and operator to allow both parties to complete their duties, thus this clause (4.2) states distinct requirements to those specified in EN 16247-1, 4.2.

4.2.2 Operations department cooperation

Transport operations are a complex, time-critical process and being able to audit it without affecting its final result is imperative.

The organization shall provide the auditor with appropriate access to relevant personnel, records, documentation or equipment.

The auditor shall agree with the operations department on the needs of both parties to complete their duties in a proper manner. Failing to do so upfront will put extra difficulties into the auditing process.

When a sampling method is used, the selected sample of vehicle(s) shall be representative of the fleet or that part of the fleet.

4.2.3 Personnel

In order to perform the audit in a proper manner, the auditor shall have direct access to people within the organization in charge of the following areas:

- a) Planning. Personnel responsible for logistics and route management;
- b) Operations. This department is in charge of organizing the transport operations and specifically of assigning them to operators and vehicles;
- c) Maintenance. These are the people responsible for assuring the availability and good performance of the vehicles, or granting access to service records if maintenance is outsourced;

¹prEN 16247-5 is currently not yet published and under development.