

Energy efficiency benchmarking methodology

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16231:2012 sisaldab Euroopa standardi EN 16231:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 16231:2012 consists of the English text of the European standard EN 16231:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.09.2012.	Date of Availability of the European standard is 05.09.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 03.080.99, 13.020.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

ICS 03.080.99; 13.020.20

English version

Energy efficiency benchmarking methodology

Méthodologie de benchmarking de l'efficacité énergétique

Energieeffizienz-Benchmarking-Methodik

This European Standard was approved by CEN on 27 July 2012.

CEN and CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN and CENELEC member.

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, 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 United Kingdom.



**CEN-CENELEC Management Centre:
Avenue Marnix 17, B-1000 Brussels**

Contents	Page
Foreword.....	3
Introduction.....	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Energy efficiency benchmarking methodology	9
4.1 Minimum requirements for energy efficiency benchmarking	9
4.2 Benchmarking steps	9
4.2.1 Purpose and planning	9
4.2.2 Data collection and verification	10
4.2.3 Analysis and results	11
4.2.4 Reporting	11
Annex A (informative) Example of a checklist for an energy efficiency benchmarking	12
Annex B (informative) Two examples of energy efficiency benchmarking data collection questionnaires	14
Annex C (informative) Checklist correction factors	18
Annex D (informative) Plausibility check of input data	19
Annex E (informative) Two examples of presentation of benchmarking output	20
Annex F (informative) Benchmarking as a management tool	22
Bibliography	23

Foreword

This document (EN 16231:2012) has been prepared by Technical Committee CEN/CENELEC JWG 3 “Energy Management and related services — General requirements and qualification procedures”, 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 March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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.

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, 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.

Introduction

The overall aim of this European standard is to provide organisations with a methodology for collecting and analysing energy data with the purpose of establishing and comparing energy efficiency between or within entities.

It may lead to reductions in total energy consumption by showing improvement opportunities and consequently possible reductions in costs and emissions of carbon dioxide. This standard addresses the general aspects of benchmarking. This does not include the definition and establishment of sector specific benchmarks.

Energy efficiency benchmarking may be motivated by different needs, among which are:

- awareness of energy performance levels of peers to trigger energy efficiency improvement actions;
- definition of energy performance objectives;
- knowledge and follow up of the energy performance of a group and the related (best) practices.

Energy efficiency benchmarking applies to specific energy consumption whereby other performance aspects like technologies and operating practices may be taken into account.

The benchmarked entity can be a facility, an activity, a process, a product, a service or an organisation.

Energy efficiency benchmarking is related to energy management, energy audits and energy efficiency calculation methods.

The benchmarking methodology model for this standard is shown with the main steps in Figure 1.



Figure 1 — Benchmarking methodology model

The basis of the approach can be briefly described as follows:

- purpose & planning (see 4.2.1): define the objectives for the benchmarking, including definition and select the approach and type of benchmarking, produce a project plan and assign resources;
- data collection & verification (see 4.2.2): agree on data collection method, collect and verify data and collate the findings to enable analysis;
- analysis & results (see 4.2.3): assess current performance levels, produce tables, charts and graphs to support analysis and seek explanations for the differences in performance;
- reporting (see 4.2.4): communicate results including lessons learned.

The following step is optional in accordance with management systems in the organisation (see Annex F):

- monitoring & actions: implement specific actions, monitor progress and implement specific actions including those from lessons learned.

This document is a preview generated by EVS

1 Scope

This European Standard specifies requirements and provides recommendations for energy efficiency benchmarking methodology. The purpose of energy efficiency benchmarking is to establish the relevant data and indicators on energy consumption, both technical and behavioural, qualitative and quantitative in comparing performance between or within entities.

Energy efficiency benchmarking can be either internal (within a specific organisation) or external (between organisations including competitors). This standard describes how to establish the boundaries of what is being benchmarked, including for example facilities, activities, processes, products, services and organisations.

This European Standard provides guidance on the criteria to be used in order to choose the appropriate level of detail for the data collection, processing and reviewing which suits the objective of the benchmarking.

This European Standard does not itself state specific performance requirements with respect to energy use. For all activities related to the continual improvement cycle (such as the Plan-Do-Check-Act methodology) reference shall be made to management systems in the organisation.

2 Normative references

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.

No normative references are cited.

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1

benchmark

reference or standard value for comparison derived from benchmarking

3.2

benchmarking

process of collecting, analysing and relating performance data of comparable activities with the purpose of evaluating and comparing performance between or within entities

Note 1 to entry: Different types of benchmarking exist, ranging from internal benchmarking to establishing the "best in industry/sector" performance. Internal benchmarking is looking for differences in energy efficiency within an organisation and highlighting best practices for dissemination to other parts of that organisation. External benchmarking may be used to establish a range of energy performance indicators for an installation/facility or a specific product/service in the same field or sector.

3.3

benchmarking boundary

limit to the process installation, facility, product, building or organisation being benchmarked

Note 1 to entry: The boundary may relate to a single process installation or facility, a finished product, a single building (including all the products or processes carried on inside that building), a division or operational unit of an organisation, or an entire organisation or group of organisations.

Note 2 to entry: The energy efficiency of an installation/facility or a specific product depends on the boundary of the process that is being benchmarked and how all energy flows, feedstock(s)/raw material(s) and (by)product(s) crossing the boundary of the process installation are to be taken into account.