



SLOVENSKI STANDARD
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Upravljanje z energijo in energijska učinkovitost - Slovar izrazov

Energy management and energy efficiency - Glossary of terms

Energiemanagement und Energieeffizienz - Glossar

Management de l'énergie et efficacité énergétique - Glossaire

Ta slovenski standard je istoveten z: CEN/CLC/TR 16103:2010

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English Version

Energy management and energy efficiency - Glossary of terms

Management de l'énergie et efficacité énergétique -
Glossaire

Energiemanagement und Energieeffizienz - Glossar

This Technical Report was approved by CEN on 6th October 2009 and CENELEC on 14th April 2010.

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Foreword

This document (CEN/CLC/TR 16103:2010) was approved by CEN/BT (Resolution BT C076/2009) and CENELEC/BT (Resolution D136/045).

In 2007, when CEN-CENELEC Task Force (TF) 189 and CEN-CENELEC Task Force (TF) 190 project teams were working on standards for energy management, they identified the need for a set of common terms and definitions. The same need had been identified by CEN-CENELEC Sector Forum Energy Management (SFEM) (see A.1).

Also, certain terms and definitions in European directives dealing with energy efficiency were subject to discussion and varied interpretation:

- Directive 2002/91 EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of building;
- Directive 2006/32 EC of the European Parliament and of the Council of 5 April 2006 on energy end use efficiency and energy services.

In recommendation 14/2007, SFEM appointed a group of experts to resolve this terminology issue by building a repository of terms on energy management and energy efficiency. Working Group on Terminology on Energy Management and Energy Efficiency ((SFEM WG TEMEE), see A.2 and A.3).

SFEM WG TEMEE started the work at the beginning of 2008. Liaison with the project teams in TF 189 and TF 190 ensured broad agreement on key terms used in EN 16001:2009 and EN 15900:2010.

In mid 2008, ISO/TMB/SAG E (ISO Strategic Advisory Group on Energy efficiency and renewable energy sources) and IEC/SMB/SG1 (IEC Strategic Group on Energy efficiency and renewable resources) had both also identified terminology as a key issue needing resolution. Consequently, a new work item proposal has been submitted to all ISO members and IEC national committees for voting during first quarter 2009.

SFEM WG TEMEE recommended delivery in the form of a Technical Report (TR). This was first circulated to CEN-CENELEC SFEM members and then sent for approval to both CEN and CENELEC technical boards (BT). This approach was approved by CEN-CENELEC SFEM in its recommendation 10/2008 (December 2008).

When preparing the document, the working group endeavoured to take into account the interest of the different stakeholders (experts working in energy management, standard writers, standard users, regulation authorities, industry, etc). When issues arose, priority was given to commonly used terms by energy efficiency implementers and consistency with other definitions. The terms and definitions included are only those where full consensus was reached.

This document is the final report of the initial stage, dealing just with key concepts and terms. Future work may expand the list of terms by including additional definitions where such need arises.

This Technical Report is not a standard and any standardization group has the authority to define its own terms. However, the definitions in this technical report have already added value to project teams writing energy management and energy efficiency standards.

Standards writers are strongly recommended to use these terms and definitions.

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1 Scope

This Technical Report defines key terms commonly used in energy management and energy efficiency.

2 Methodology

Terms and definitions were collected from selected documents and organized into concepts and groups. From this, concepts were agreed and definitions were written. Terms needed in standards under development by CEN-CENELEC TF 189 and CEN-CENELEC TF 190 were prioritised.

The following documents have been consulted, and followed when it was considered compatible with the objective of the working group:

- ISO 704:2000, *Terminology work — Principles and methods*;
- ISO 1087-1:2000, *Terminology work — Vocabulary – Part 1: Theory and application*;
- ISO 10241:1992, *International terminology standards — Preparation and layout*;
- ISO 860:2007, *Terminology work — Harmonization of concepts and terms*.

Support from DIN Terminology department was highly appreciated.

At this stage, only English has been used although a key working rule of the group was that each definition was accepted if no difficulty for translation was forecast.

NOTE ISO 10241:1992, 5.1.6.1 recommends that terminology work is carried out in all official languages simultaneously.

Two sets of selected terms have been defined:

- from EU directives, terms and their definitions with comments and recommendations;
- recommended list of commonly used terms with their definitions.

3 European Directives, terms and definitions

The following directives were reviewed:

- Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of building;
- Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end use efficiency and energy services.

Comments on the directive terms and definitions can be found in Annex C.

4 Terms and definitions elaborated by group of terms

Diagrams are aimed to highlight the links between concepts and terms using logical blocks

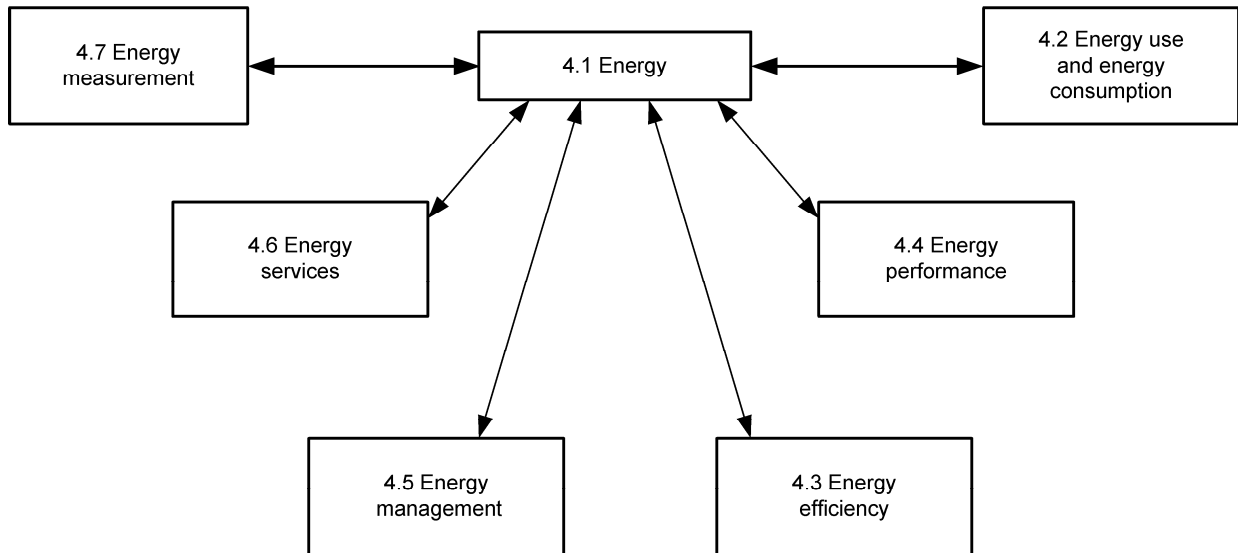


Figure 1 — General Diagram of the different group of terms

4.1 Energy

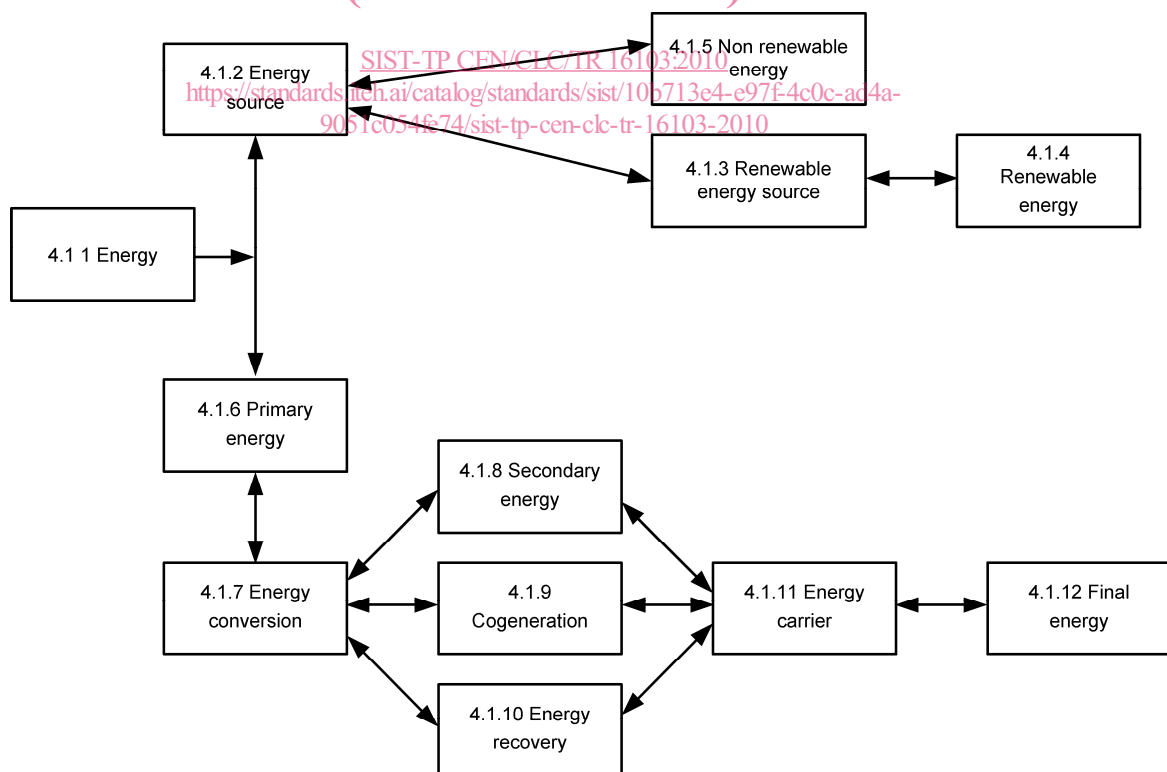


Figure 2 — Diagram for the "Energy" group of terms

4.1.1 energy

capacity of a system to produce external activity (Max Planck)

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NOTE 1 Commonly, the term “energy” is used for electricity, fuel, steam, heat, compressed air and other like media. Energy can take a wide variety of forms, for example: chemical energy, mechanical energy, thermal energy, electric energy, gravitational energy, nuclear energy, hydraulic energy, etc.

NOTE 2 The SI unit for energy is joule (J), and for electric energy also watt-hour (Wh).

[EN 16001:2009] with modifications

4.1.2**energy source**

source material or natural resource from which energy in a useful form can be extracted or recovered either directly or by means of energy conversion

[ISO 15615:1997] with modifications

4.1.3**renewable energy source**

energy source not depleted by extraction

EXAMPLE Examples of renewable energy sources commonly include wind, solar, geothermal, hydrothermal and ocean energy, hydropower, biomass, and biogases.

4.1.4**renewable energy**

energy from renewable energy sources

4.1.5**non-renewable energy**

energy from a source depleted by extraction

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EXAMPLE Fossil fuels, uranium.

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4.1.6**primary energy**

energy that has not been subjected to any conversion process

NOTE Primary energy includes non-renewable energy and renewable energy. The sum of primary energy from all energy sources may be called total primary energy.”

4.1.7**energy conversion**

transformation of the physical or chemical form of energy

NOTE The term “energy transformation” may be employed in this sense.

4.1.8**secondary energy**

energy resulting from energy conversion of primary energy

EXAMPLE Electricity, gasoline, process steam, compressed air.

4.1.9**cogeneration**

simultaneous energy conversion into electric and thermal energy

NOTE 1 In addition, mechanical energy may also be obtained.

NOTE 2 The term “combined heat and power” (CHP) is often used as a synonym, although CHP doesn't cover mechanical energy.

[Directive 2006/32]

4.1.10**energy recovery**

extraction of unused energy available after completion of a process

4.1.11**energy carrier**

substance or phenomenon used to produce mechanical work or heat or to operate chemical or physical processes

[ISO 15615:1997] and [ISO 13600:1997]

4.1.12**final energy**

energy as received by an energy-using system

NOTE Final energy may be either primary or secondary energy, or both.

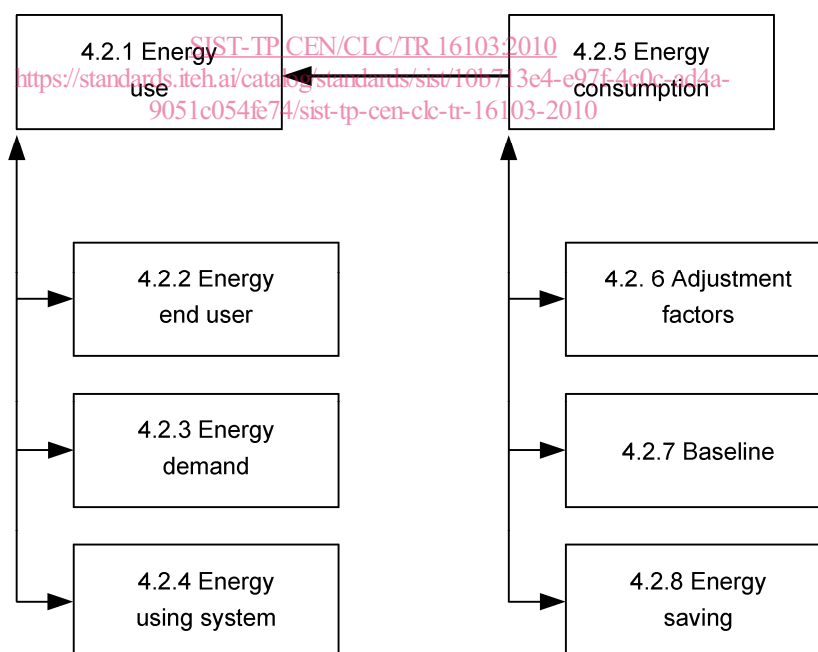
4.2 Energy use and energy consumption

Figure 3 — Diagram for the “Energy use and Energy consumption” group of terms

CEN/CLC/TR 16103:2010 (E)**4.2.1****energy use**

manner or kind of application of energy

EXAMPLE Lighting, ventilation, heating, processes, transport.

NOTE The quantity of the energy applied is expressed as energy consumption.

4.2.2**energy end user**

entity consuming final energy

NOTE The energy end user may differ from the customer who might purchase the energy but does not necessarily use it.

4.2.3**energy demand**

necessary supply capacity for the projected level of energy use

NOTE 1 When considering future trends, energy demand is often used in the sense of potential energy consumption.

NOTE 2 Energy demand is often used in the context of supply-demand interaction where demand is not given but dependent on external factors such as energy prices.

4.2.4**energy using system**

physically defined energy consuming item with boundaries, energy input and output

NOTE 1 An energy using system can be a plant, a process, part of a process, a building, a part of a building, a machine, equipment, a product, etc.

NOTE 2 Boundaries must be clearly delimited.

NOTE 3 Output can be energy, service, product.

4.2.5**energy consumption**

amount of energy used

NOTE 1 Although technically incorrect, energy consumption is a widely used term.

NOTE 2 The manner or kind of application of energy is expressed as energy use.

4.2.6**adjustment factor**

quantifiable parameter affecting energy consumption

EXAMPLE Weather conditions, behaviour related parameters (indoor temperature, light level) working hours, production throughput, etc.

4.2.7**energy baseline**

energy consumption calculated or measured over a period of time normalized by adjustment factors

NOTE Baseline may be used for calculation of energy saving, as a reference before energy efficiency improvement action.

4.2.8**energy saving**

reduction of energy consumption following implementation of energy efficiency improvement action(s)

NOTE 1 The reduction is obtained by comparison against the baseline taking into account all adjustment factors.

NOTE 2 Energy savings can be potential following an assessment or actual after implementing an action(s).

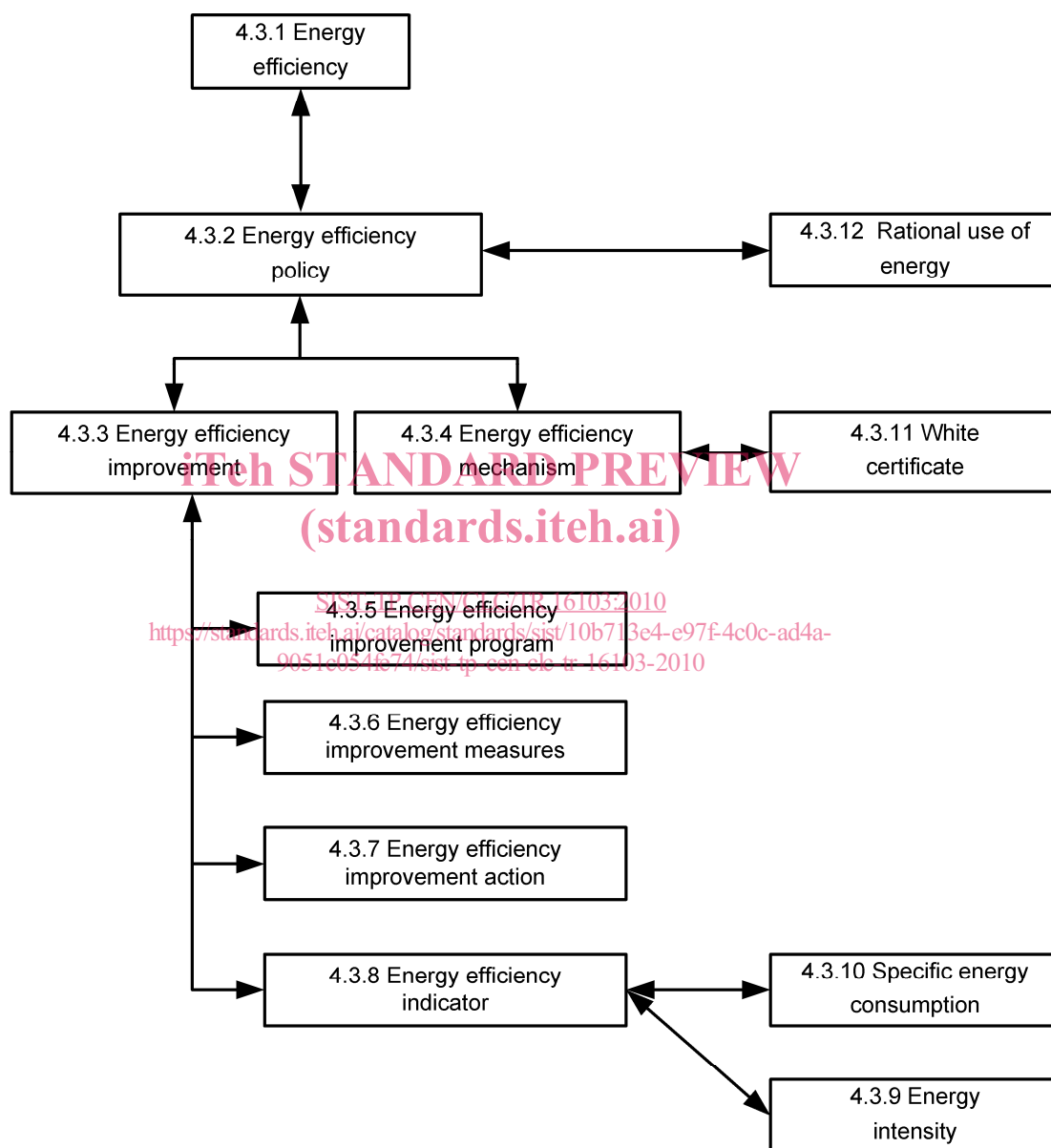
4.3 Energy efficiency

Figure 4 — Diagram for the “Energy efficiency” group of terms