

Energy efficiency in ISO

the buildings example

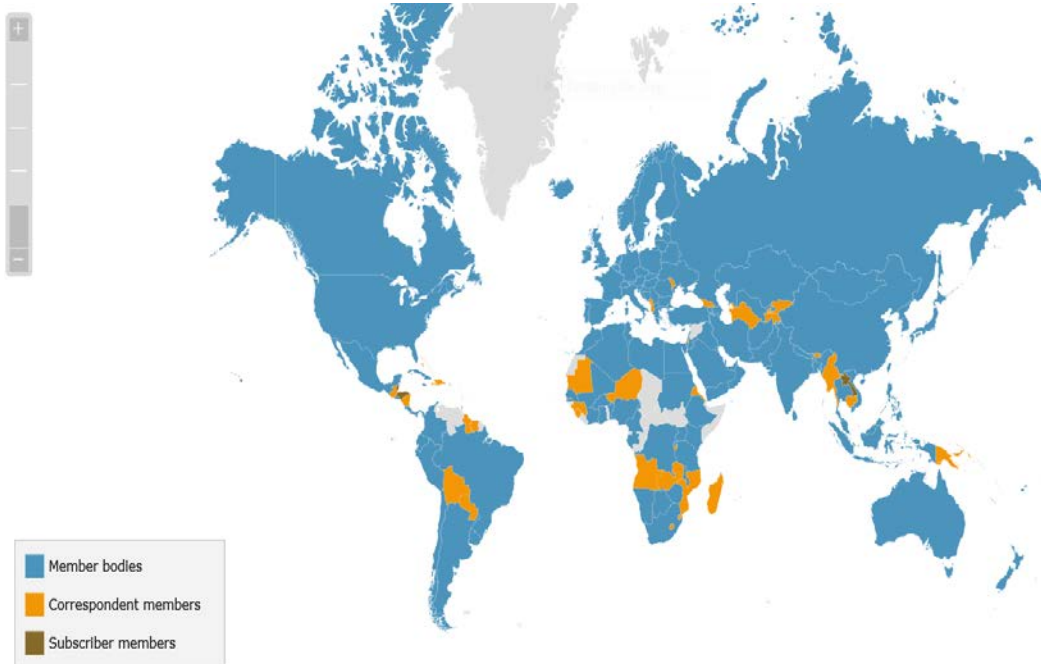


Anna Caterina Rossi
Technical Programme Manager
Genève, 20th April 2015



ISO in figures (April 2015)

International Organization for Standardization



- 163 members, 119 full members
- 235 technical committees
- more than 20500 standards in catalogue



Energy – The value added by International Standards

- Promote good energy practices
- Scientific cooperation and harmonization of public policies
- Improve consumers and users understanding and confidence
- Avoid technical barriers to trade related to energy policies
- Enable the creation of world markets for energy technologies



Using International standards in public policy

- Direct references to specific standards in the legal text
- Indirect references to the use of IEC and ISO standards
- Ensuring no delegation of legislative responsibility
- Maintenance procedures
- Conformity assessment
- Market surveillance

Your link <http://www.iso.org/iso/PUB100358.pdf>





ISO 50001:2011 Energy management systems - Requirements with guidance for use

Helps organizations to systematically plan and manage their energy use

Revision works are starting!

The screenshot shows the ISO website's page for ISO 50001:2011. The page features a navigation bar with links for Standards, About us, Standards Development, News, and Store. Below the navigation bar, there is a search bar and a breadcrumb trail: Standards > Management system standards > ISO 50001. The main heading is "ISO 50001 - Energy management". Below this, a paragraph explains that using energy efficiently helps organizations save money and conserve resources, and that ISO 50001 supports organizations in all sectors to use energy more efficiently through the development of an energy management system (EnMS). A video player is embedded on the page, showing a young boy sitting on a swing set, with a play button overlay. Below the video player, the text "ISO 50001:2011 - Energy Management System" is visible. On the right side of the page, there is a section for "ISO Store" with a shopping cart icon, listing "ISO 50001:2011 Energy management systems -- Requirements with guidance for use" and a link to "Visit the ISO Store to buy more standards". Below this, there is a section for "Useful publications" featuring a thumbnail for "Win the energy challenge with ISO 50001" and a brief description: "ISO 50001 establishes a framework for organizations to manage energy."

Energy in ISO

Over 20 ISO/TCs involved in aspects of energy efficiency and renewable energy sources



Energy efficiency in buildings

ISO



ISO/TC 163 *“Thermal performance and energy use in the built environment”*

&

ISO/TC 205 *“Building environment design”*



Joint Working Group *“Energy performance of buildings using holistic approach”*

CEN



Under the EPBD
CEN/TC 88 *“Thermal insulating materials and products”*

CEN/TC 89 *“Thermal performance of buildings and building components”*

CEN/PC 371 *“Energy Performance of Building project group”*



136 published standards on...

Test methods

(ISO 14857 Determination of air permeance of building materials)

Calculations

(series ISO 15927 Hygrothermal performance of buildings - Calculation and presentation of climatic data)

Thermal insulation products

(series ISO 12575 Thermal insulation products - Exterior insulating systems for foundations)

Building environment design

(series ISO 13612 Heating and cooling systems in buildings - Method for calculation of the system performance and system design for heat pump systems)

Holistic approach

(ISO 16346 Assessment of overall energy performance)



Have a look...

www.iso.org/obp

The screenshot shows the ISO Online Browsing Platform (OBP) interface. At the top, there is a navigation bar with the ISO logo on the left and links for 'Sign in', 'Language', 'Help', and 'Search' on the right. Below the navigation bar is a search bar with the text 'Search' and a magnifying glass icon. The search results show 'ISO/TR 16344:2012(en)'. The main content area features a heading 'Welcome to the Online Browsing Platform (OBP)' followed by a paragraph: 'Access the most up to date content in ISO standards, graphical symbols, codes or terms and definitions. Preview content before you buy, search within documents and easily navigate between standards.' Below this is a search filter section with radio buttons for 'All', 'Standards', 'Collections', 'Graphical symbols', 'Terms & Definitions', and 'Country codes'. The 'All' option is selected. There is a search input field with a dropdown menu set to 'English' and a magnifying glass icon. A 'More options [+]' link is located to the right of the search field. At the bottom of the search filter section, there is a link: 'Need help getting started? Check our **Quick start** guide here!'



Have a look – ISO/TR 16344

Search results

The screenshot shows the ISO Online Browsing Platform (OBP) search results for the query '16344'. The page displays 177 results, sorted by Relevance, with 10 results per page. The search results are listed in a table format, showing the title, introduction, and normative references for each standard. The results are as follows:

Standard	Introduction	Normative references
ISO/TR 16344:2012(en) <i>Energy performance of buildings — Common terms, definitions and symbols for the overall energy performance rating and certification</i>	Foreword ...shall not be held responsible for identifying any or all such patent rights. ISO/TR 16344 was prepared by Technical Committee ISO/TC 163, Thermal performance and energy use in... Introduction ...building energy performance rating and certification (see also Figure 1); — ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the overall...	...16346, Energy performance of buildings — Assessment of the overall energy performance ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the overall... See 4 more
ISO 16343:2013(en) <i>Energy performance of buildings — Methods for expressing energy performance and for energy certification of buildings</i>	Introduction ...building energy performance rating and certification (see also Figure 1); — ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the overall...	2 Normative references ...16346, Energy performance of buildings — Assessment of the overall energy performance ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the overall... See 4 more
ISO 16346:2013(en) <i>Energy performance of buildings — Assessment of overall energy performance</i>	Introduction ...building energy performance rating and certification (see also Figure 1); — ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the overall...	2 Normative references ...buildings ISO 16818, Building environment design — Energy efficiency — Terminology ISO/TR 16344, Energy performance of buildings — Common terms, definitions and symbols for the... See 3 more
ISO 12655:2013(en) <i>Energy performance of buildings — Presentation of measured energy use of buildings</i>	Introduction	



Have a look – deep inside

Until clause 3 for all publications

Whole text for terminology documents

ISO/TR 16344:2012(en) Energy performance of buildings — Common terms, definitions and symbols for the overall energy performance rating and certification

Table of contents

- Foreword
- Introduction
- 1 Scope
- 2 Terms and definitions**
 - 2.1 Terms
 - 2.1.1 air-conditioned floor area**
area equipped with air-conditioning equipment, measured at floor level from the interior surfaces of the walls
 - Note 1 to entry: See also "gross floor area".
 - 2.1.2 air-conditioning system**
combination of all components required to provide a form of air treatment in which maximum or minimum temperature is controlled, possibly in combination with the control of ventilation, humidity and air cleanliness
 - 2.1.3 auxiliary energy**
electrical energy used by technical building systems for heating, cooling, ventilation and/or hot domestic water to support energy transformation to satisfy energy needs
 - Note 1 to entry: This includes energy for fans, pumps, electronics, etc. Electrical energy input to a ventilation system for air transport and heat recovery is not considered as auxiliary energy, but as energy used for ventilation (see 2.1.156).
 - Note 2 to entry: In ISO 9488, the energy used for pumps and valves is called "parasitic energy".
 - 2.1.4 building**
construction as a whole, including its envelope and all technical building systems, for which energy is used to condition the indoor climate and to provide domestic hot water and illumination and other services related to the use of 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.
- 3 Symbols and abbreviations
 - 3.1 General
 - 3.2 Principal symbols
 - 3.3 Subscripts
 - 3.4 More details and examples
- Annex A Symbols and abbreviations -
 - A.1 General
 - A.2 Order of subscripts
 - A.3 Terms for subscripts
 - A.4 Further levels of subscripts
 - A.5 Examples and comments
- Annex B Translation of symbols and -
 - B.1 Symbols
 - B.2 Subscripts
- Bibliography

Figures

Tables

Energy efficiency of buildings: holistic approach

Energy performance comprises :

- Heating
- Cooling
- Lighting
- Ventilation
- Domestic hot water
- Appliances (in some cases)



The approach can be applied to evaluate the energy performance of badly insulated existing buildings, for example, compared to that of new, nearly zero-energy buildings, in order to assess compliance with minimum primary energy performance requirements in building regulations. A nearly zero-energy performance can only be achieved if all expertise and disciplines are effectively combined and coordinated.



Holistic approach: ISO...

ISO/TR 16344: common terminology and symbols

Common terms, definitions and symbols

ISO 16346: common rules on assessment boundary, calculation procedure for different energy uses interaction and aggregation

Assessment of overall energy performance

ISO 16343: numerical indicators to be used for building classification

Methods for expressing energy performance and for energy certification of buildings



ISO 12655: facilitating analytical comparisons by unifying the collected data of measured building energy use

Presentation of measured energy use of buildings

Family 52000

Under development:

- ISO 52000 general framework
- ISO 52001 terms and definitions
- ISO 52002 symbols
- ISO 52... overall requirements, energy balance, inspection procedures, calculation procedures, thermal characteristics, ventilation, ...

... thank you for your attention

For further questions:

- Energy efficiency and renewable energy sources:

Mrs. Kirsi Silander silander@iso.org



- Energy efficiency of buildings:

Ms. Anna Caterina Rossi rossi@iso.org

