Core Theme 1 special session: Update on current ISO work on energy savings calculations

Introduction
ISO works related to energy efficiency
Are they useful for the EED implementation?

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Objectives of the session

- To inform CA-EED experts on the on-going works at ISO in relation to EED implementation
- To exchange on contents of two examples of on going standards
- To attract EU experts in the negociation process on current energy efficiency standards
- To attract EU experts in the voting procedure of energy efficiency related ISO standards

What is an ISO standard?

1. International standard negotiated by national standardization body
2. New standard proposed by a country (NWIP) to ISO in relation to a determined topic (ex: energy saving calculation TC 257). Accepted if at least 5 countries are interested.
3. Could be Mandatory but more generally voluntary
4. No free access. Price related to the length of the standard
5. Classic structure
    1. *Scope*
    2. *Terminology (new terms included in the new standard)*
    3. *references (mainly to others ISO works*
    4. *Core text*
    5. *Some annexes can be add*
    6. *Some quantitative examples*
6. Long process of negotiation (3 years or more)

ISO Process The example of the 50047 on energy saving calculation for a country

1. NWIP accepted 1st April 2015 (15 countries)
2. Powerpoint presentation at Tehran (Sept 2015)
3. Sending a first working draft to WG members January 2016 for comments
4. Processing of comments and presentation of the results at TC 257 March (Birmingham) : 6 countries
5. Implementation of accepted comments for the committee draft (end of March 2016)
6. Launch of 2 months committee draft vote
7. Processing of comments and presentation of the results at TC 301 June 2016 (Stockholm) (8 countries)
8. DIS voting procedure (Until February 2017)

The involvement of CA EED experts on ISO works: the example of France

- EMEES and ODYSSEE european projects
- ESD negociation team on energy saving calculation
- Co-chairing of the European Standard CEN-CENELEC 16212
- Participant to ISO 17742 on energy saving calculation at level of country, regions and cities (Convenor P. Boonekamp, NL)
- Convenor of ISO standard 17743
- Convenor of ISO standard 50046 on « General quantification methods for predicted energy savings"
- Convenor of the ISO Standard 50049 on « Calculation methods for energy efficiency and energy consumption variations at country, region and city levels: relation to energy savings and other factors

Overview of the international standards about energy efficiency

Terminology
(CEN/CENELEC TR 16103 ; ISO-IEC 13273-1)

Energy Services
(EN 15900 ; ISO 50007)

Energy Audits
(EN 16247(Parts 1 to 5) ; ISO 50002)

Evaluation of Energy Savings
(EN 16242 ; ISO 17441, ISO 17742, ISO 17743, ISO 50047, ISO 50021, ISO 50044, ISO 50045, ISO 50046, ISO 50049)

Energy Management
(EN 16001 ; ISO 50001, ISO 50003, ISO 50004)

Monitoring of Energy Performance
(EN 16231 ; ISO 50006, ISO 50015, ISO 50008)

CEN/CENELEC Working Groups

Sector Forum Energy Management

http://www.cencenelec.eu/standards/Sectors/SustainableEnergy/Management/Pages/default.aspx

- ✓ CEN/CLC JWG1 - Energy Audits
- ✓ CEN/CLC JWG3 - Energy management and services - General requirement and qualification procedures (previously CEN/CLC/BT/TF 189)
- ✓ CEN/CLC JWG4 - Energy efficiency and saving calculation (previously CEN/CLC BT/TF 190)
- ✓ CEN/CLC JWG9 - Energy measurement plan for organisations

ISO Working Groups

Now **Technical Committee TC 301** (“Energy management and energy savings”)

(previously TC202 “Energy management” and TC257 “Evaluation of energy savings”)

http://www.iso.org/iso/iso_technical_committee?commid=6077221

- ✓ WG 1: Energy management
- ✓ WG 2: Energy performance metrics
- ✓ WG 3: Measurement and verification of organizational energy performance -- General principles and guidelines
- ✓ WG 4: Opportunities for improvement
- ✓ WG 5: Energy services
- ✓ WG 6: Data for energy management systems
- ✓ **WG 7: Methodological framework of calculation and reporting on energy savings**
- ✓ **WG 8**: **Energy savings in regions**

ISO Working Groups

Technical Committee TC 301 (“Energy management and energy savings”)

http://www.iso.org/iso/iso_technical_committee?commid=6077221

(continuation)

- ✓ WG 9: Energy savings of projects
- ✓ WG 10: Energy savings in organizations
- ✓ WG 11: Economics and financial evaluation
- ✓ WG 12: Energy savings evaluators
- ✓ WG 13: Evaluation of energy savings of thermal power plant

Standards about terminology

Ref.	Title	Status	Links with EED
TR 16103 (CEN/CENELEC)	Energy management and energy efficiency - Glossary of terms	Published in 2010 **Withdrawn** in Janurary 2016	**Art.2** (definitions)
ISO-IEC 13273-1	Energy efficiency and renewable energy sources -- Common international terminology -- Part 1: Energy efficiency	**Published** in March 2016	**Art.2** (definitions)

Standards about energy audits

Ref.	Title	Status	Links with EED
EN 16247	Energy audits Part 1: general requirements Part 2: Buildings Part 3: Processes Part 4: Transport Part 5: Competence of energy auditors	**All published** Part 1: 2012 Part 2: 2014 Part 3: 2014 Part 4: 2014 Part 5: 2015	**Art.8**: mandatory audits + promotion of audits for SME **Annex VI** : minimum criteria for audits **Art.16**: qualification/accreditation/certification of auditors **Art.5**(§7.b): energy audits in public buildings
ISO 50002	Energy audits -- Requirements with guidance for use	Published in 2014, but **not endorsed by CEN**	Not applicable for European regulations

Standards about energy management

Ref.	Title	Status	Links with EED
EN 16001	Energy management systems	Published in 2009, **withdrawn** in 2011	**Art.8**: alternative to mandatory audits + promotion of EMS for SME **Art.5**(§7.b): EMS in public buildings
ISO 50001	Energy management systems -- Requirements with guidance for use	Published in 2011 Currently **under revision**	
ISO 50003	Energy management systems -- Requirements for bodies providing audit and certification of energy management systems	Published in 2014	**Art.16**: qualification/accreditation/certification
ISO 50004	Energy management systems -- Guidance for the implementation, maintenance and improvement of an energy management system	Published in 2014	**Art.8**: alternative to mandatory audits + promotion of EMS for SME **Art.5**(§7.b): EMS in public buildings

Standards about energy services

Ref.	Title	Status	Links with EED
EN 15900	Energy efficiency services - Definitions and requirements	Published in 2010	Art.2 (definitions) Art.16 (qualification, accreditation and certification schemes) + promotion of energy services
ISO 50007	Activities relating to energy services -- Guidelines for the assessment and improvement of the service to users	Under preparation (publication planned in **2017**)	Art.16 (qualification, accreditation and certification schemes) + promotion of energy services

Standards about monitoring of energy performance

Ref.	Title	Status	Links with EED
EN 16231	Energy efficiency benchmarking methodology	Published in 2012	**Indirect** links (implementation of EMS ; monitoring of achievements for art.5 and art.7)
ISO 50006	Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance	Published in 2014	
ISO 50015	Energy management systems -- Measurement and verification of energy performance of organizations -- General principles and guidance	Published in 2014	
ISO 50008	Commercial building energy data management for energy performance -- Guidance for a systemic data exchange approach	Under preparation (publication by end of 2018)	**Indirect** links (implementation of art.5 about public buildings, and art. 9/10/11 about metering and billing)

Standards about evaluation of energy savings

Ref.	Title	Status	Links with EED
ISO 17743	Energy savings -- Definition of a methodological framework applicable to calculation and reporting on energy savings	Published in 2016	**Art.24**: reporting of expected and/or achieved energy savings **Annex V**: common principles for calculating energy savings for art.7 **Annex XIV**: minimum information to be reported
EN 16212	Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods	Published in 2012	
ISO 17742	Energy efficiency and savings calculation for countries, regions and cities	Published in 2015	
ISO 50049	Calculation methods for energy efficiency and energy consumption variations at country, region and city levels: relation to energy savings and other factors	Under preparation (publication in 2018)	

➔ Standards that can be used for the assessment and reporting of energy savings at national level (for example for NEEAPs and annual reports)

Standards about evaluation of energy savings

Ref.	Title	Status	Links with EED
ISO 17741	General technical rules for measurement, calculation and verification of energy savings of projects	Published in 2016	**Annex V**: common principles for calculating energy savings for art.7
ISO 50047	Energy savings - Determination of energy savings in organizations	To be published soon	**Art.8:** energy audits and EMS **Art.5**: energy savings in public buildings

➔ Standards mostly focused on Measurement & Verification (ex-post energy savings)

Ref.	Title	Status	Links with EED
ISO 50046	General quantification methods for predicted energy savings	Under preparation (publication in 2018)	**Art.8:** energy audits **Annex V**: common principles for calculating energy savings for art.7

➔ Standards that can be used for “deemed savings” (among other purposes)

Standards about evaluation of energy savings

➔ More specific topics / complementary topics

Ref.	Title	Status	Links with EED
ISO 50021	General guidelines for selecting energy savings evaluators	Under preparation (publication in 2018)	Art.16 (qualification, accreditation and certification schemes) ??
ISO 50044	Energy Savings Evaluation -- Economics and financial evaluation of energy saving projects	Under preparation (publication in 2018)	Indirect links (promoting energy efficiency projects)
ISO 50045	Technical guidelines for evaluation of energy savings of thermal power plants	Under preparation (publication in 2018)	Art.15: energy efficiency in energy transformation/ generation