

PROJECT DOCUMENT

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Report

**EPBD Concerted Action-2 and CENSE workshop
December 1, 2008 in Prague
*Experiences from implementation of CEN standards by
Member States***

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IEE-CENSE

*Leading the CEN Standards on Energy performance of buildings to practice
Towards effective support of the EPBD implementation and acceleration
in the EU Member States*

Supported by

Intelligent Energy  Europe

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NOTE: Annex B is provided as a separate pdf file.

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Moreover, the results and conclusions are only preliminary and may change in the course of the project based on further feedback from the contributors, additional collected information and/or increased insight.

1 Executive summary

1.1 The EPBD Concerted Action

A joint initiative of the EU Member States and the European Commission, the Concerted Action EPBD was launched in 2005. It involves those representatives of national ministries or their affiliated institutions charged with preparing the technical, legal and administrative framework for the Energy Performance of Buildings Directive (2002/91/EC) in each country. The key aim is to enhance the sharing of information and experiences from national adoption and implementation of this important European legislation.

1.2 The CENSE project

The objective of the IEE CENSE project (2007-2010) is to accelerate the adoption and improved effectiveness of EPBD related building energy performance standards from CEN in the EU Member States.

The IEE CENSE project initiates a number of international/regional workshops:

- to present their work plan and the interim results on information on the CEN standards
- to get feedback from the Member States or other target groups on possible obstacles to use of the standards and on good practice examples
- to identify together the ways for an increased convergence

1.3 Aim and programme of the workshop

This double session consisted of four parts, each with introduction by a partner in CENSE and two country presentations:

- Overall consistency (Jaap Hogeling, Dick van Dijk + UK + Fr)
- Lighting (Hans Erhorn + Nw + Be)
- Heating and domestic hot water (Johann Zirngibl + Dk + D)
- Ventilation and cooling (Gerhard Zweifel + Hun + Lux)

1.4 Main discussion and results

First results of the CENSE project are available, such as Information Papers and FAQ on each standard, first report from feedback from Member States, etc. (www.iee-cense.eu)

The country presentations underlined that the CEN standards play an important role in the national procedures, but also confirmed the obstacles for an „unconditional” use of these standards.

The application of CEN standards in national/regional building regulations depends on both procedural matters and on the content of the standards.

The country presentations provided concrete examples which are very helpful for CENSE to focus its activities.

1.5 Conclusions and recommendations

The **goal of the dialogue** between CENSE and the Member States is to facilitate the MS in the development and implementation of efficient and transparent calculation procedures on the energy performance of buildings.

The removal of barriers for further European harmonization of calculation procedures will lead to a more effective use of knowledge and experience in Europe, to promotion of the free market of energy saving products in Europe and to increased transparency in international comparison of energy savings status and potential.

The **country presentations** provided very useful examples of general and specific obstacles

A number of **specific suggestions and remarks** were recorded which are related to

- CEN and/or ISO internal procedures and rules. Of course, we can only transfer these comments to CEN and ISO.
- the technical content of the CEN and/or ISO standards. These will be further considered within CENSE, in dialogue with the target groups, and may lead to recommendations with regard to common principles, structure and content of the CEN standards.

The following **priorities** were identified:

- Promote the use of the common CEN calculation structure in Member States according to EN 15603
 - Including the identification of possible barriers
- Analyse and discuss whether it is feasible and helpful to distinguish parts of the CEN standards that are best suited for 'plug-and-play' and parts that require more national choices or input.
 - This could lead to recommendations for technical editing of the CEN standards
- Collect and synthesize concrete suggestions for improvements, per standard

Future directions:

The conclusions above provide concrete leads for the activities in CENSE.

In the coming period, IEE-CENSE will keep the initiative to continue the dialogue with the Member States.

The following instruments for this continued dialogue are envisaged:

- Information part of the IEE-CENSE website: supporting information (Information Papers, reports, FAQ, ...)
- Interactive part of the IEE-CENSE website (contact form, helpdesk [in preparation])
- Virtual community at new Portal of Buildings Platform website [in preparation], with input from IEE-CENSE
- IEE-CENSE questionnaires
- Workshops initiated or supported by IEE-CENSE
- Via personal contacts between IEE-CENSE partners and representatives from Member States and other target groups (in C.A., in CEN, etc.)

Also with regard to future directions it is important to note that the intended **recast of the EPBD** may have a significant impact on the calculation procedures. An Information Paper on this subject is about to be published by the Buildings Platform.

2 The EPBD Concerted Action and the CENSE project

2.1 The EPBD Concerted Action

A joint initiative of the EU Member States and the European Commission, the Concerted Action EPBD was launched in 2005. It involves those representatives of national ministries or their affiliated institutions charged with preparing the technical, legal and administrative framework for the Energy Performance of Buildings Directive (2002/91/EC) in each country. The key aim is to enhance the sharing of information and experiences from national adoption and implementation of this important European legislation. The original Concerted Action EPBD came to a close in June 2007, but a second phase running until 2010 was launched later in the same year. It is organised around meetings between national teams, regularly bringing together over 100 participants from 29 countries. It is accompanied by other measures to enhance communication, including a web platform and national update reports.

The Concerted Action EPBD is funded under Intelligent Energy-Europe within the EU's Competitiveness and Innovation Programme.

More information can be found at the website (www.epbd-ca.org)

2.2 The CENSE project

The aim of the CENSE project (2007-2010) is to support the EU Member States (MS) and other target groups in achieving better awareness and more effective use of the European (CEN) standards that are related to the EPBD.

The main activities in the project are:

- 1) to communicate the role, status and content of these standards as widely as possible, and to provide guidance on their implementation;
- 2) to collect comments and examples of good practice from the MS, so as to remove obstacles to implementation, and to collect and secure results from relevant SAVE and FP6 projects;
- 3) to prepare recommendations to CEN.

As part of the second type of activities, the IEE CENSE project initiates a number of international/regional workshops.

More information on the project can be found in the Information Paper P86, The CENSE project. Leading the CEN Standards on Energy performance of buildings to practice. A project (2007-2010) under the Intelligent Energy Europe programme, one of a series of Information Papers that can be downloaded from the website (www.iee-cense.eu).

3 Aim and programme of the workshop

3.1 Main topic and objectives

Objectives of the Core Theme Procedures and Requirements

Core Theme 4 is related to Articles 3 to 6 in the EPBD. This will include the actual chosen procedures in the MS and the way requirements have been set up. The main objective in Core Theme 4 is to provide a convenient forum for discussing practical implementation of the new standards in regulations and certification procedures in MS, particularly for identification of common approaches to simplification and alternatives which pose common difficulties that are best solved together by the MS in frank discussions.

Although it will be difficult to find a common solution that will fit all MS, the range of solutions can be narrowed down to a few selected possibilities, allowing a first level of convergence within the EU.

Objectives of the session Experiences from implementation of CEN standards by Member States – IEE CENSE

In January 2004 the European Commission gave the mandate 343 to CEN, CENELEC and ETSI for the elaboration and adoption of standards for a methodology calculating the integrated energy performance of buildings and estimating the environmental impact, in accordance with the terms set forth in Directive 2002/91/EC (EPBD). Access to such a calculation methodology in the form of European standards will make it possible to harmonise the various measures for improving the energy efficiency in buildings between the Member States. It will increase the accessibility, transparency and objectivity of the energy performance assessment. The IEE CENSE project was invited to the meeting in Prague:

- To present their work plan and the so far available results on developing and promoting and CEN standards.
- To get feedback from the Member States about the use or non-use of the standards.
- To identify together the ways for a first level of convergence for common solutions.

Confidentiality

The presentations and discussions within the Concerted Actions-2 initiative are of strictly confidential nature, enabling the country representatives to freely exchange opinions and experiences.

Consequently, the same confidentiality also applies to this workshop and has to be respected in this public report.

Therefore, this report does not contain the individual country presentations. However, the individual country presentations are available for internal use within CENSE and they will be or are taken into account as part of the analysis and synthesis of the feed back from the target groups.

For the same reason, the discussions and conclusions that are related to a specific country are anonymized.

3.2 Programme of the workshop

The workshop was divided into two sessions, each consisting of two parts. Each part started with an introduction by a partner in CENSE followed by two country presentations:

- Overall consistency (Jaap Hogeling, Dick van Dijk + UK + Fr)
- Lighting (Hans Erhorn + Nw + Be)
- Heating and domestic hot water (Johann Zirngibl + Dk + D)
- Ventilation and cooling (Gerhard Zweifel + Hun + Lux)

The full programme is given in **annex A**.

4 Content of the workshop

4.1 Presentations

The following presentations were given:

Opening

Hans Erhorn – Fraunhofer-IBP, Germany, *Aim of the session*

Introduction to the background of the IEE CENSE project, followed by explanation of the aim and the plan of this double session. The session covers exemplary fields of application of the CEN-EPBD standards and related national implementations.

Dick van Dijk – TNO, Netherlands, *Introduction to the IEE-CENSE-project*

Introduction of the objectives, activities and benefits of the CENSE project (2007-2010), followed by examples of first results. The main aim of the project is to provide guidance on the implementation of the CEN-EPBD standards, to collect feedback from the target groups (barriers and good practice examples) and to prepare recommendations to CEN.

Current status:

- Providing guidance: several Information Papers are available.
- Feedback: results from a first questionnaire are available, focusing on the use of the CEN standards in general. Detailed questionnaires on the use and usability of specific (clusters of) standards are in preparation as well as regional and topical workshops.
- Recommendations: too early.

Workshop on Overall Consistency of the CEN EPBD standards

Introduction:

Jaap Hogeling – ISSO, Netherlands, *The use of the CEN standards to support the EPBD in the EU Member States*

As part of the CENSE project a questionnaire was sent to 23 Member States on the practical use of the CEN standards, now or expected in the near future. For each cluster of standards there are different options:

- The CEN standards are either not, partly or fully used in the national standards in the Member State; if “fully”: it can be with or without “national annex” and: translated or not translated (using EN, DE or FR version).
- In turn, national standards are either not, partly or fully used (referenced) in the national law and/or building regulations in the Member State. If the national standards are not used in the national or regional law or building regulations they are not directly related to the implementation of the EPBD and consequently of no interest for the CENSE project.
- Alternatively, the content of the CEN standards is partly or fully directly used in the national law and/or building regulations in the Member State.

It appears that in many Member States a practical solution is adopted at the moment: the content of the CEN standards is partially used in national standards or directly in the national law or building regulations.

Question: what are the main hesitations to use the standards?

Answer: mainly procedural barriers, but also problems with specific content; moreover, many standards offer different options, to choose at national level and need national input data and national boundary conditions. These are topics for further investigation in CENSE.

Dick van Dijk – TNO, Netherlands, *How to integrate the CEN-EPBD standards in national building regulations? The use of EN 15603 to adopt the same structure as starting point for coordination of Member States regulations*

Starting point for convergence towards harmonized methods is the key standard: EN 15603 (Energy Performance of Buildings – Overall Energy Use and definition of Energy Ratings), which offers the general structure. Such as the breakdown into energy needs and system losses and breakdown of system losses into recoverable and non-recoverable; emission, distribution and generation and auxiliary energy use. The first step will be to try to convince the Member States to use the same common structure. The second step will be, per individual module: gradually replace the national method by the CEN method (with or without “national annex”), where possible.

The main feedback question from CENSE can be formulated as follows:

What would be the major change(-s) needed in a particular CEN standard EN xxx (or group of standards), to be able to use this CEN standard in the national/regional building regulations?

Question: Do you expect different answers for different standards?

Answer: Yes.

Questions: Are inspection standards also covered in the questionnaire?

Answer: Yes, but the main focus is on the calculation standards.

Jaap Hogeling: the heating inspection standard seems to be too detailed, the A/C inspection standard seems to be general.

Question: Could building inspection be a topic for a future CEN standard?

Answer: This could be a future issue for the project, but on the other hand, the current topics require already a lot of effort.

National presentations by United Kingdom and France

Discussion/summary:

See also the general discussion and conclusions in the next sections of this report.

Summary presented by Hans Erhorn: CEN offers the “toolbox”, countries like to have a general framework, but want to use it in the best way to fit the country needs. Consequently, this should be the prime aim of the standards.

Dick van Dijk adds: It may be worthwhile to consider as recommendation to CEN a common structure of each CEN standard, separating general issues that can be used by all countries and details that are more suited to be left to the MS.

One of the comments from the audience is that the CEN standards to support the EPBD are special compared to other known CEN standards, because they offer different possibilities, contain many annexes and (in most cases) actually need national annexes for national choices and input data.

Workshop on Lighting standard

Introduction:

Hans Erhorn – Fraunhofer-IBP, Germany, *EN 15193: Energy performance of buildings – Energy lighting requirements*

The background for choosing this standard as example is the big energy saving potential that is hidden in lighting and in the promotion of efficient use of daylight.

The presentation focuses on the scope of the standard, explanation of the alternative routes in EN 15193 (quick or more comprehensive calculation method, metering) and specific issues.

In a second part of the introduction, the set up and results of the CENSE questionnaire on this standard are presented.

National presentations Norway and Belgium

Discussion/summary:

See also the general discussion and conclusions in the next sections of this report.

Some specific comments/conclusions:

- Different levels of detail have been requested by users
- Better model needed for estimation in the design phase, the benchmark values are too high

Workshop on standards for Heating Systems and DHW

Introduction:

Johann Zirngibl – CSTB, France, *CEN standards for Space heating and DHW under mandat from the Energy Building Performance Directive (EPBD)*

The presentation explains the background and importance of this series of standards and the position in the overall set of CEN-EPBD standards.

The structure and content of the standards are presented and the first results of the CENSE questionnaire on the usability of these standards in the Member States.

Question: What exactly is the aim of today, which kind of feedback do you want to have?

Answer: We would like to obtain feedback on how to improve the European methods, including experiences from the countries to transfer to CEN.

Comment: It should be discussed why we can't compare boilers in different countries. Is it a dramatic situation or not?

Answer: this comment is e.g. coming from producers: "I can not show that my product is better than the standard product"; or: "The energy saving with my product is different in different countries".

Question: Is the aim to come to one mandatory European method?

Answer: a) the CEN standards are there to support the MS, not vice versa; b) "one method" can still be adapted to national specifications (and lead to different results) because national input and national boundary data are used.

National presentations by Denmark and Germany.

Discussion/summary:

See also the general discussion and conclusions in the next sections of this report.

Some specific comments/conclusions:

- o The national examples confirm that in many countries the CEN standards are used in a practical way, but that there are several reasons not to implement them at the moment "as such" at the national level.
- o Pay attention to specific (known) inconsistencies in the package of CEN standards.

- Heating system components are commercialized throughout Europe. The products, like boilers and heat emitters, are more and more evaluated in a holistic approach as recommended in the EPBD.
- Therefore harmonized methods are needed to guarantee a free open market, fair comparison of products and transparency.
- In the CEN standards the data flow is organized from the product to the overall energy use. The experience from many European countries has been taken into account. Simplified and/or detailed methods are now available. Only the calculation methods are standardized. The parameters for the calculation can be adapted to each national situation.

Workshop on standards for Ventilation and Cooling

Introduction:

Gerhard Zweifel – HSLU, Switzerland, *Introduction on CEN standards for ventilation and cooling*

This presentation gives an overview of the CEN ventilation and cooling standards. The cooling standard, EN 15243 is presented in more detail: scope, calculation methods, typology of systems and their main technical features, verification procedures, plus the various informative annexes. In a second part of the presentation, the set up and first results of the CENSE questionnaire on EN 15243 is introduced.

One or two more generations of standard developments are probably needed to have a closer harmonization on this complex and diverse subject. This standard mainly provides a generic framework, because there is such a wide variation in cooling systems (matrix...): too many to be covered by one method.

Comment: Concerning the wide variety of cooling systems: a lot of information is available at national levels. But, consequently, a full description of the national method requires a long report....

Comment: The policy makers ask for a simple calculation; on the other hand they also ask that the method reflects real energy savings and allows for the appreciation of innovative solutions, which makes it not so simple.

National presentations from Hungary and Luxemburg

Discussion/summary:

See the general discussion and conclusions in the next sections of this report.

4.2 Profile of participants

The workshop participation consisted of 44 participants from 28 different European countries, consisting of 12 policy makers and 32 advisers to policy makers

The CENSE project team was represented by Dick van Dijk, Jaap Hogeling, Hans Erhorn, Johann Zirngibl and Gerhard Zweifel.

5 Main discussion and results

First results of the CENSE project are available:

- Information Papers and FAQ on each standard (partly completed at the moment, see CENSE website)
- First results from feedback from Member States (report can be downloaded from CENSE website)



The importance of the CEN standards is clear

- More effective use of knowledge and experience in Europe
- Promote free market of energy saving products in Europe
- Higher transparency in international comparison of energy savings status and potential
- Etc.

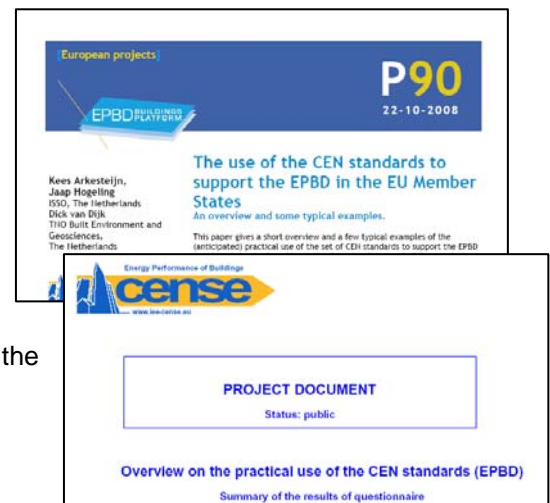
However, the application of CEN standards in national/regional building regulations depends

- On procedural matters (timing, way to ensure compliance, ...)
- On content (too simple?, too detailed?, too generic?, too specific?, too many options?, too unclear?, ...)

An enquiry organised by CENSE on the practical use of the CEN standards in each member State, now or foreseen within a few years from now, led to the following observation:

- Almost 40% of the MS (intend to) copy fully or reference completely all the CEN-EPBD standards in their national standards; but this does not necessarily imply that these national standards are used (referenced) in the national laws or building regulations.
- Almost 25% of the MS (intend to) use the national standards (based on CEN-EPBD) in their laws or building regulations

More information: Information paper P90 and Summary of the results of the questionnaire on the website: www.iee-cense.eu



The country presentations underlined that the CEN standards play an important role in the national procedures, but also confirmed the obstacles for an „unconditional” use of these standards.

The successive sessions, each focussing on a specific cluster of standards, also clearly revealed that the different clusters of the standards are not always based on the same principles. The principle ranging from generic calculation and classification rules (example: standard on cooling systems), leaving a lot of freedom for national application, to clusters of standards with more specific procedures, either in the „normative” part of the standard, thus mandatory, or in the „informative” part.

Whatever the principles, national choices are to be made in most cases, with regard to specific choices in the methodologies, boundary conditions and input data.

Of course, there is also a differentiation in the urgency in adopting specific calculation procedures, depending on the national situation. E.g. in some countries cooling may have a lower priority than heating, due to the climatic situation, in other countries thermal bridges have lower priority, due to limited possibilities for checking or due to lack of design guidelines, etc.

These kind of differentiations also leads to a differentiation of the types of barriers for the use of the CEN standards and the type of or urgency for comments.

The comments made in the country presentations were used to draft the conclusions from the workshop (see next section of this report).

The specific shortcomings reported in the country presentations have been noted by the CENSE partners present at the workshop, as part of the collection of feedback on the specific standards.

6 Conclusions and recommendations

The objective of the IEE CENSE project (2007-2010) is to accelerate the adoption and improved effectiveness of EPBD related building energy performance standards in the EU Member States.

The IEE CENSE project was invited:

- to present their work plan and the interim results on information on CEN standards
- to get feedback from the MS on possible barriers to use of the standards and on good practice examples
- to identify together the ways for a first level of convergence

The goal of the dialogue between CENSE and the Member States is to facilitate the MS in the development and implementation of efficient and transparent calculation procedures on the energy performance of buildings.

The removal of barriers for further European harmonization of calculation procedures will lead to a more effective use of knowledge and experience in Europe, to promotion of the free market of energy saving products in Europe and to increased transparency in international comparison of energy savings status and potential.

The country presentations provided very useful examples:

- Different types of CEN standards are implemented/used in different ways, which implies:
 - No “one size fits all” set of comments and recommendations for all CEN standards
 - No “plug-and-play” in the implementation of many CEN standards

Some **concrete suggestions and remarks:**

- To avoid ambiguities and for a more efficient use of the standards: recommend to CEN that there are no open ends in the procedures: for each variable it should be made clear whether the input is expected from another (which?!) equation, from another (which?!) standard or to be provided nationally.
- It would also help the transparency of the calculation procedures if all standards had a similar structure, distinguishing general procedures, specific detailed procedures (e.g. allowing for national options) and (e.g. partly national) input and boundary conditions.
- Better links are needed from product standards to the EPBD standards.
- CEN procedures may form a barrier for swift national responses to movements or opportunities in the market.
- Some MS: building code writers are not involved in CEN standards writing.
- MS are most interested in a harmonized framework (methodology) that allow national differentiation.
- Standards should be distinguished from complementary guidebooks.
- Copyright of the CEN standards is a barrier for use.

- There is a need for more transparency in the planning of the future steps of CEN and ISO.
- Problems for changing the method because the methods are linked to the ratings (certificates)
- Too many options allowed in the CEN standards
- In the future the standards will be mainly applied by computer software. Standards writers should have this in mind.

These specific suggestions and remarks are related to either or both:

- CEN and/or ISO internal procedures and rules. Of course, we can only transfer these comments to CEN and ISO.
- the technical content of the CEN and/or ISO standards. These will be further considered within CENSE, in dialogue with the target groups, and may lead to recommendations with regard to common principles, structure and content of the CEN standards.

The following **priorities** were identified:

- Promote the use of the common CEN calculation structure in Member States according to EN 15603
 - Including the identification of possible barriers
- Analyse and discuss whether it is feasible and helpful to distinguish parts of the CEN standards that are best suited for 'plug-and-play' and parts that require more national choices or input.
 - This could lead to recommendations for technical editing of the CEN standards
- Collect and synthesize concrete suggestions for improvements, per standard

Future directions:

The conclusions above provide concrete leads for the activities in CENSE.

In the coming period, IEE-CENSE will keep the initiative to continue the dialogue with the Member States.

The following instruments for this continued dialogue are envisaged:

- Information part of the IEE-CENSE website: supporting information (Information Papers, reports, FAQ, ...)
- Interactive part of the IEE-CENSE website (contact form, helpdesk [in preparation])
- Virtual community at new Portal of Buildings Platform website [in preparation], with input from IEE-CENSE
- IEE-CENSE questionnaires
- Workshops initiated or supported by IEE-CENSE
- Via personal contacts between IEE-CENSE partners and representatives from Member States and other target groups (in C.A., in CEN, etc.)

Also with regard to future directions it is important to note that the intended recast of the EPBD may have a significant impact on the calculation procedures. An Information Paper on this subject (P149) will be published by the Buildings Platform (publication expected in March 2009).

Annex A - Workshop Programme

Duration	Topic
Session 1 (before lunch)	
10 min	Opening: Aim of the session Introduction of IEE-CENSE-project Aim, work programme, status
40 min	Workshop on Overall Consistency of the CEN EPBD standards -Introduction: Overall consistency and modular structure, results enquiry "use of standards", detailed-simplified methods, national annexes, common symbols and definitions, results of CENSE questionnaire (10 min) -Open discussion of strengths/weaknesses of the standards, problems of implementation, possible approaches/improvements for the future incl. country presentations (25 min) -Conclusion: Summary of results, best approaches to take, possible ways to take into account the standards on national level (5 min)
40 min	Workshop on Lighting standard -Introduction: CEN-standard EN 15193 and results of CENSE questionnaire (10 min) -Open discussion of strengths/weaknesses of standard, problems of implementation, possible approaches/improvements for the future incl. country presentations (25 min) -Conclusion: Summary of results, best approaches to take, possible ways to take into account the standards on national level (5 min)
Session 2 (after lunch)	
40 min	Workshop on standards for Heating Systems and DHW -Introduction: Topics treated by the Heating standards, installation based structure, common outputs for each part, continuity from the product to the system, flexibility, reliability, fair competition, results of CENSE questionnaires (10 min) -Open discussion of strengths/weaknesses of the standards, problems of implementation, possible approaches/improvements for the future incl. country presentations (25 min) - Conclusion: Summary of results, best approaches to take, possible ways to take into account the standards on national level (5 min)
40 min	Workshop on standards for Ventilation and Cooling -Introduction: Content of the ventilation standards, content and different philosophy of the cooling standard, normative parts: general requirements, system variety, validation, informative annexes, results of CENSE questionnaires (10 min) -Open discussion of strengths/weaknesses of the standards, problems of implementation, possible approaches/improvements for the future incl. country presentations (25 min) -Conclusion: Summary of results, best approaches to take, possible ways to take into account the standards on national level (5 min)
10 min	Closing: Main conclusions

Annex B – Presentations (Introductions only)

The introductions by CENSE partners are available **as separate pdf file**.

Individual country presentations are not included for reasons of confidentiality, see section 3.1.