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DIRECTORATE-GENERAL FOR ENERGY

Directorate C - New and renewable sources of energy, Energy efficiency & Innovation
C.3 - Energy efficiency of products & Intelligent Energy – Europe

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MANDATE TO CEN, CENELEC AND ETSI FOR THE ELABORATION AND ADOPTION OF STANDARDS FOR A METHODOLOGY CALCULATING THE INTEGRATED ENERGY PERFORMANCE OF BUILDINGS AND PROMOTING THE ENERGY EFFICIENCY OF BUILDINGS, IN ACCORDANCE WITH THE TERMS SET IN THE RECAST OF THE DIRECTIVE ON THE ENERGY PERFORMANCE OF BUILDINGS (2010/31/EU)¹

1. MOTIVATION

Directive 2010/31/EU recasting the Directive 2002/91/EC on energy performance of buildings (EPBD) promotes the improvement of the energy performance of buildings within the European Union, taking into account all types of energy uses (heating, lighting, cooling, air conditioning, ventilation) and outdoor climatic and local conditions, as well as indoor climate requirements and cost effectiveness (Article 1).

The directive requires Member States to adopt measures and tools to achieve the prudent and rational use of energy resources. In order to achieve those goals, the EPBD requires increasing energy efficiency and the enhanced use of renewable energies in both new and existing buildings. One tool for this is the application by Member States of minimum requirements on the energy performance of new buildings and for existing buildings that are subject to major renovation, as well as for minimum performance requirements for the building envelope if energy-relevant parts are replaced or retrofitted. Other tools are energy certification of buildings, inspection of heating systems and boilers, and air-conditioning systems.

The use of European standards increases the accessibility, transparency and objectivity of the energy performance assessment in the Member States facilitating the comparison of best practices and supporting the internal market for construction products.

The first mandate to CEN to develop a set of CEN EPBD standards (M 343) resulted in the successful publication of all EPBD related CEN standards in 2007-2008.

This mandate comes to review the mandate M343 as the recast of the EPBD raises the need to revisit the standards and reformulate and add standards so that they become on the one hand unambiguous and compatible, and on the other hand a clear and explicit overview of the choices, boundary conditions and input data that need to be defined at

¹ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast), OJ L312, 18.6.2010

national or regional level. Such national or regional choices remain necessary, due to differences in climate, culture & building tradition, policy and legal frameworks. Consequently, the current set of CEN-EPBD standards have to be improved and expanded on the basis of the recast of the EPBD.

The use of European standards for calculating energy performance, as well as for energy performance certification and the inspection of heating systems and boilers, ventilation and air-conditioning systems will reduce costs compared to developing different standards at national level. The standards should be flexible enough to allow for necessary national and regional differentiation and facilitate Member States implementation and the setting of requirements by the Member States.

The CEN/CENELEC proposal, in response to this mandate, shall consist of a comprehensive package of technical reports and standards that are manageable and user-friendly for regulators, product technical specification drafters, drafters of European Technical Approval Guidelines/Common Understanding Assessment Procedures (ETAGs/CUAPs), producers, notified bodies and users.

2. DESCRIPTION OF MANDATED WORK

The basis for the standardisation work to be carried out by CEN, CENELEC and ETSI is found in the current set of EPBD related CEN standards, as well as other existing national, CEN/CENELEC and ISO standards.

The improved set of EPBD standards shall become a systematic, clear and comprehensive package for the benefit of professionals, Member States and relations with third countries.

In order to ensure user-friendliness a continuous but modular overall structure is needed, covering all standards related to the energy performance of buildings, providing the overall framework which will enable a step-by-step implementation by the EU Member States. CEN/CENELEC should provide the Commission with an overview of all current standards, indicating to what extent each of them will need to be revised and the timeframe in which the work can be accomplished. In addition an overview shall be provided on all new standards that need to be developed, including the associated workload and resources needed.

The mandated works will include guidance on the rationalisation of different options given in the standards, providing a balance between the accuracy and level of detail, on one hand, and the simplicity and availability of input data, on the other. Hidden complexities will also be taken into account, such as the impact of differences in the overall legal frameworks on the national choices and national input data. The basic principles and rules will also comprise rules and formats for the separation of harmonised procedures and choices and input at national or regional level.

In order to improve the existing standards and supplement them in line with the needs of the recast EPBD, the following tasks have to be completed:

- Standards shall be prepared, to allow the assessment of the energy efficiency of buildings. The existing harmonised European standards for EPBD shall be used as a basis and adjusted according to the needs of the recast EPBD Directive 2010/31/EU.
- Each standard (or group of standards) shall contain:

- a clear and comprehensive field of application (scope²) as well as;
 - a clear and comprehensive specification of the input data, also indicating the source of the data if this is the output calculated according to an other standard;
 - a clear and comprehensive specification of the output that is intended to provide the energy performance assessment results, the related data necessary for their proper interpretation and use, and all relevant information documenting the relevant boundary conditions and calculation or measurement steps;
 - CEN/CENELEC shall ensure consistency among EPBD standards.
- The **identification and prioritisation** of items for **revision** and **gaps** in the current set of standards, on the basis of the basic principles, in consultation with the Member States. CEN/CENELEC should present a proposed timeline indicating priority issues that will be revised also indicating the timeframe for the accomplishment of the rest of the tasks. The **improved and (if needed) new standards** will be prepared on the basis of this priority list;
 - Preparing an over-arching **standard** on the integrated energy performance of buildings, re-using the main elements of EN 15603 (Overall energy use and definition of energy rating) and core elements of other key standards, including common definitions, terms and symbols, offering a systematic, clear and comprehensive **continuous but modular structure**, enabling a step-by-step implementation by the Member States, taking also into account the nature of each procedure identifying the typical type of user.
 - Preparing and applying common **basic principles** on the required quality, accuracy, usability and consistency of each standard.
 - Preparing and applying a **common format** for each standard, including a systematic, hierarchic and procedural description of options, input/output variables and relations with other standards, including:
 - A clear **separation** of the procedures, options and data to be provided at national or regional level;
 - A common structure of easily accessible and comparable **national annexes** to each standard, containing the national or regional options, boundary conditions and input data;
 - An **informative technical report**, accompanying each standard, according to a common structure, comprising at least the results of internal validation tests (such as spreadsheet calculations for testing and demonstrating the procedures), examples and background information. If possible all informative parts which are currently part of the standards will be moved to these technical reports. This will significantly reduce the length of the

² Scope has the meaning of ‘field of application’ and its equivalents are in French ‘domaine d’application’ and in German ‘Anwendungsbereich’.

standards and strengthen their focus, thus facilitating the adoption (including translation) in national/regional regulations.

- Preparing and applying a systematic hierarchic **numbering** of the standards.
- Ensuring that all procedures are **software proof and unambiguous**;
- Ensuring that the standards will be concise and complete, that can be easily referenced in legislation;
- **Rationalisation of different options** given in the standards, each option aiming at specific applications with respect to availability of input data and impact on the energy performance.
- **Updating the standards to the needs of the recast EPBD**, which includes the following issues:
 - general checking on the appropriateness of the current set of standard in particular for existing building given the extension of scope in the recast;
 - More focus on models and input data which are suited to existing buildings;
 - More focus on passive cooling techniques and for the assessment of the energy performance of cooling systems;
 - Integration of the inspection standards on systems for heating, cooling and ventilation;
 - Where needed, expansion of the procedures to nearly zero energy buildings by way of renewable sources of energy, and procedures for energy producing buildings;
 - More consideration given to alternative systems;
 - Integrated approach for calculating minimum performance requirements for technical building systems and building envelope taking into account all energy uses.

The standardization work should lead to the following benefits:

- make the CEN standards more usable as direct reference in national legislation and give a high transparency of national choices;
- make it easier for Member States to be actively involved in the standardization process;
- promote international exchange of knowledge and shared research in the field of energy saving technology;
- support the increase circulation of products, services and real estate data;
- faster implementation of new solutions;
- high quality and efficient European tools leading to high performance buildings and a strong position on the market for energy saving technology.

3. EXECUTION OF REQUEST

The Commission requests CEN, CENELEC and ETSI:

1. to develop and present, 4 months after formal adoption of the mandate, a comprehensive list of already existing CEN, ISO or national standards (published or under development) and other relevant documents (e.g. technical reports) corresponding to the objectives of the present mandate, and 4 months later a detailed proposal for the Work Programme indicating clearly to what extent each of the current standards has to be redrafted, also indicating which new standards need to be drafted and by which date these tasks could be delivered .
2. to present, 8 months after reception of the mandate, an overview of the reformulating work as well as work required to develop new standards - with estimation of timetable for its development, as well as the probable publication of each standard by the relevant TCs.
3. to develop and adopt, according to the tasks described above, a set of basic principles and rules and a modular overall structure covering all standards related to the energy performance of buildings, in order to ensure that the standards pair a maximum of consistency and transparency with a maximum of applicability and participation by the Member States; whilst doing this it should be avoided a too complex structure.
4. to develop, based on the existing CEN EPBD standards, a set of new and revised standards on energy performance of buildings corresponding to the needs of the 2010/31/EU directive by 2014; each standard shall contain a short introductory section to ensure user-friendliness.
5. to ensure that the deadlines set in agreement with the Commission are met, the basic principles and rules and modular approach and, subsequently, the foreseen improvements of the current set of EPBD standards, are in line with the goals indicated and with expectations of the end users;
6. to cooperate with a Liaison Committee consisting of Member States (members of the EDMC³) for the purpose of verifying and monitoring progress with respect to the requirements set by the Member States in their national legislation; Member State will be consulted during the standardisation process when deciding on:
 - a) which standards to prepare or revise, and its objectives;
 - b) main principles and structure of each of the new standards;
 - c) final text of the standard.
7. to indicate to the Commission which standards will be covered by ISO, if co-operation is intended, in order to avoid duplication of work, as well as, how it would be guaranteed that an ISO lead on a certain issue would not delay the delivery of the tasks.

Maximum **transparency** of all input and results, including on-going work and draft standards, will be ensured through the use of regular reports, CIRCA and other websites, etc.

³ Energy Demand Management Committee

The work will make full use of relevant International, European and National standardisation activities.

The standards will take proper account of the work of the CEN/CENELEC Product TCs, and of other EU Directives, such as the Construction Products Directive (89/106/EEC), the Energy Labelling Directive 2010/30/EU, the Ecodesign Directive 2009/125/EC, Boiler Efficiency Directive(92/42/EC), the Energy End Use Efficiency and Energy Services Directive 2006/32/EC, the INSPIRE Directive (2007/2/EC), the Renewable Energy Directive 2009/28/EC and the Mandate M324.

4. ORGANIZATIONS TO BE ASSOCIATED

Relevant and necessary parties, including representatives of the building sector, such as ECOS , ANEC, ETUI, CENELEC, CEN-Energy Management, EUEB, competent national authorities, members of the European Commission and the national standardisation bodies shall be actively associated with the standardisation work through regular progress reports prepared by the Project Teams and, when appropriate, participation in the TCs.