



**EUROPEAN COMMISSION**

DIRECTORATE-GENERAL FOR ENERGY AND TRANSPORT

DIRECTORATE D - New and Renewable Energy Sources, Energy Efficiency & Innovation  
**Energy Efficiency**

**Background Information Paper for the  
Public Consultation on the  
Recasting of the Energy Performance of Buildings Directive  
(EPBD) (2002/91/EC)**

**Note:**

**This background paper is being circulated for consultation to all parties concerned by the recasting of the EPBD.**

**The sole purpose of the consultation is to contribute to the debate, collect relevant information and help the Commission develop its thinking in this area.**

**This document does not necessarily reflect the views of the Commission of the European Communities, and should not be interpreted as a commitment by the Commission to any official initiative in this area.**

**Parties concerned are invited to submit their comments no later than  
20 June 2008 by means of the online questionnaire, available at:**

**[http://ec.europa.eu/energy/demand/consultations/buildings\\_dir\\_en.htm](http://ec.europa.eu/energy/demand/consultations/buildings_dir_en.htm)**

## 1. EU BUILDINGS SECTOR

Energy use in the buildings sector (residential and commercial) is responsible for about 40% of final energy consumption in the EU. The cost efficient energy savings potential is estimated at 28% by 2020, which in turn can reduce total EU final energy consumption by around 11%<sup>1</sup>.

According to the last IPCC report<sup>2</sup>, about 30% of the projected greenhouse gas emissions worldwide in the buildings sector can be avoided with net economic benefit by 2030. In addition, the measures in the buildings sector are those with the lowest abatement cost for greenhouse gas reduction<sup>3</sup>.

Therefore the buildings sector is key in addressing the challenges of increasing EU energy dependence and growing CO<sub>2</sub> emissions, but also provides additional employment and business opportunities and cost-effectively supports local development and thus the EU Lisbon objectives.

The share of buildings in EU wealth in terms of capital but also social, cultural and historic value and business opportunities is enormous. Once constructed nearly all buildings remain for decades, and therefore all measures undertaken by EPBD and its recasting will have a very long-term impact and thus need careful consideration.

## 2. THE BUILDINGS SECTOR AND EU POLICY OBJECTIVES

The buildings sector can offer significant reductions in energy consumption and therefore addressing the potential in this sector is essential for achieving the ambitious 20/20/20% targets for energy consumption and greenhouse gas emission reductions, and the increased share of renewables by 2020, as endorsed by the Heads of State and Governments during the spring 2007 European Council<sup>4</sup>.

Reaping the energy savings potential in the buildings sector will lead to achieving in a cost-effective manner:

- (i) increased independence from energy imports which will contribute to the EU security of supply objectives;
- (ii) contribute to EU economic growth and job creation;
- (iii) contribute to the reduction of greenhouse gas emissions and of the harmful impact of energy generation on the environment; and
- (iv) improved living conditions and comfort for citizens.

Therefore the sector is of prime importance for realizing strategic objectives of European Energy Policy, as outlined in the Commission Communication *An Energy Policy for Europe*<sup>5</sup>.

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<sup>1</sup> The data are for 2005. Due to the increase of fossil fuel prices the reduction may have been even greater.

<sup>2</sup> IPCC 2007

<sup>3</sup> McKinsey for Vattenfall 2007

<sup>4</sup> 7224/1/07, REV 1

<sup>5</sup> COM (2007) 1

### **3. MAIN PROVISIONS OF THE CURRENT EPBD**

A holistic and innovative approach towards the energy performance of buildings has been adopted through the Energy Performance of Buildings Directive 2002/91/EC (EPBD)<sup>6</sup>. The main objective of the EPBD is to promote improvement of the energy performance of buildings within the Community, taking into account outdoor climatic and other local conditions, as well as indoor climate requirements and cost-effectiveness.

The main provisions of the current EPBD are:

- Establishing a methodology for calculating the energy performance of a building, taking account of local climatic conditions, inter alia;
- Minimum standards for energy quality to be determined by Member States and applied to all new buildings and – mostly on a different level - to major refurbishments of existing large buildings (above 1000m<sup>2</sup>);
- Development of certification for buildings to make energy consumption levels visible to owners, tenants and users, and to raise awareness, whenever a building is constructed, sold or newly rented out;
- Inspection of boilers and air-conditioning systems above minimum sizes to reduce their energy consumption and greenhouse gas emissions.

The deadline for the implementation of the first two provisions was January 4, 2006 and for the last two - due to the challenges facing Member States as regards training and accreditation of experts to carry out the certifications and inspections - a further grace period of up to three years (i.e. until January 4, 2009) was allowed.

### **4. CURRENT IMPLEMENTATION OF THE EPBD**

The EPBD is complex in nature and requires substantial efforts by Member States and a large number of legislative measures to be adopted by them for its full transposition. A number of countries have transposed the Directive, but a large number are still lagging behind. As of April 2008, the Commission has initiated 17 infringement cases against Member States that have failed completely or partially to notify national implementing measures or properly to implement the EPBD. Of these, two countries have been referred to the Court of Justice, and against one there has been already a ruling in favour of the Commission.

Despite the slow progress on transposition and implementation of the EPBD in a considerable number of Member States, there are good examples of successful policy approaches to be found across the Union.

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<sup>6</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0091:EN:NOT>

## 5. WHY EPBD NEEDS RECASTING?

The EU buildings sector can play a key role in achieving EU policy objectives, while contributing to an improved level of comfort for citizens (as mentioned in Section 2).

**However, a large part of the cost-efficient energy efficiency measures available in the sector are not realised in practice.** The narrowing of the gap between the realisable potential of the buildings sector and its real utilisation is the Commission's main motivation for recasting the EPBD.

There are various factors that limit utilisation of this potential. Some come from the present wording and level of ambition in implementing the EPBD. Others stem from general challenges in the sector. **This section summarises the main comments and views gathered so far by the Commission services.**

The first group includes challenges arising from:

- (i) Vague formulation of some articles and insufficiently clear definitions;
- (ii) Thresholds within the EPBD in relation to existing buildings which undergo major renovation, considering 'alternative systems', display of certificates and to inspection requirements;
- (iii) The only partially realised potential of those of its requirements which can lead to improvement of energy efficiency in the buildings sector;
- (iv) Insufficient realisation of the potential in public buildings, which can serve as a leading example.

These issues might be tackled in the recasting.

The second group is related to challenges which are well-acknowledged but difficult to solve, such as the tenant-owner problem, lack of financing for energy efficiency improvements of buildings, and the fragmented and heterogeneous nature of both building stock and ownership, which require very different instruments. Although solutions for these problems are needed, they may not be possible through the recasting of the EPBD.

### 5.1. Simplification and clarification

#### 5.1.1. Choice of legal instrument

The choice of the legal procedure to be used for the revision will aim at simplification and clarification. The main difference between recasting and amendment is that in the recasting, the new text of the Directive will be a consolidation, in other words it will be a single new legal document, and not a second one that includes only the revised parts, as in the case of amendment. This will improve readability and will facilitate comprehension for implementing authorities as for affected stakeholders.

As the principles of the current EPBD will be kept, and the new EPBD will build on it, the recasting will be an opportunity to develop further EU and national policies and measures related to the energy efficiency in the buildings sector based on what has been

learnt by implementation of the current EPBD, and on the ambitions implied by the EU and national targets. Therefore, it is crucial that the current EPBD be properly implemented and on time. The forthcoming recasting should not be an excuse for delay in implementing of the current Directive.

### 5.1.2. Definitions and wording

Some of the definition and wording of the existing text are not clear enough, and create confusion and differences in implementation. A number of issues have been identified based on the implementation of the current EPBD. For example, there is room for improvement of several definitions (such as public buildings, air-conditioning systems) and for clarification of certain provisions (such as the provision of recommendations for the energy performance certificate, when the certificate is to be made available).

## 5.2. Thresholds within the existing EPBD

At present, the EPBD provisions call on Member States to set minimum energy performance requirements for all newly constructed buildings, and for those with a floor area of above 1000m<sup>2</sup> and which undergo a major renovation (Art. 6).

Because of the 1000m<sup>2</sup> threshold for existing buildings the EPBD now covers only about 30% of the EU buildings stock<sup>7</sup>. Taking into account that introducing energy efficiency measures when retrofitting costs on average between two and three times less than if when done separately, this in general means that with every renovation below 1000m<sup>2</sup> a unique opportunity for cost-efficient energy savings for the owner might be lost. However, in a number of Member States the 1000m<sup>2</sup> threshold has not been introduced, so that all buildings that undergo major renovation have to fulfil certain energy performance requirements.

Other thresholds that are included in the EPBD are those which require feasibility of alternative systems to be considered for new buildings above 1000m<sup>2</sup> (Art. 5) and the minimum effective rated output requirements for inspections of boilers (Art. 8) and of air-conditioning systems (Art. 9).

## 5.3. Need for strengthening of certain requirements

Based on observations from implementation of the current EPBD, and according to a number of studies, there is a potential for strengthening of several requirements of the EPBD.

### 5.3.1. Energy performance certificates

One of the main reasons for market imperfections as regards investment in energy efficiency on the rental market is the fact that the owner and tenant of a building, dwelling or office have different interests. As the tenant normally pays the energy bill the incentive for the owner to invest in energy efficiency is weak. The seller of a house is not interested to provide information that the property's energy performance is mediocre.

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<sup>7</sup> Ecofys for Eurima VII study 2007

The best way to make energy efficiency investments more attractive is to provide clear and reliable information to prospective tenants and buyers. It should be made clear to all actors involved that failure to act on cost-effective energy efficiency improvements recommended in the energy performance certificate is a waste of money. Therefore, the energy performance certificates required by the Directive (Art. 7) can be a powerful tool to inform citizens about energy saving options, including information on the economic impact, and to create a demand-driven market for energy efficient buildings and services regarding energy efficiency.

Some of the observations show that some certificates issued in Member States are not of satisfactory quality, or that there is not enough bottom-up to ensure that they are systematically made available during property transactions. In some countries, the recommendations with a finite payback time are mandatory either for some parts of the buildings sector or throughout.

### 5.3.2. Requirements on boilers and air-conditioning systems

As for the energy performance certificate, the requirements on inspection of boilers and air-conditioning systems or for equivalent publicity measures for boilers, can be an effective way for informing EU citizens about the opportunities for energy efficiency improvements, and for savings on their energy bill. However, based on experience some of the currently required inspections of boilers and air-conditioning systems have limited impact on energy performance improvement. One of the reasons for this is missing specifications, requirements and objectives for the inspections in the Directive itself.

### 5.3.3. Minimum energy performance requirements

Setting optimal cost-effective energy performance requirements is of crucial importance, as they have an impact over the whole building lifetime. Once buildings are constructed or renovated, changes become more expensive, and thus the opportunity for low cost improvements is much more limited.

At present, EU Member States are required to ensure that energy performance requirements be set (Art. 4), and methodology for their calculation developed (Art. 3). A limited number of Member States have announced commitments to introduce passive house or low energy house requirements in the future.

There are differences between the values for energy performance requirements for the different Member States and regions. However, cross-border comparison between the different values is difficult because of the different underlying calculation methodologies, definitions and reference values (as demonstrated in the ASIEPI project). Some studies demonstrate that certain existing requirements for the building shell are not cost-optimal. However, fixing performance requirements is very complex and challenging if it is to be done at the EU level.

A benchmarking system which can provide common ground for comparison of various requirements in the Member States might be a useful tool for improved transparency and a good opportunity for public authorities from different Member States to make comparisons and to share experience.

#### **5.4. Leading role of the public sector**

The public sector can and should have an exemplary role motivating other property owners to carry out energy efficiency improvements. At present, there is a requirement that buildings above 1000m<sup>2</sup> occupied by public authorities, and to institutions providing public service to a large number of persons, and therefore are frequently visited by these persons should have an energy performance certificate displayed in a clearly visible place. The role of the public sector could be further strengthened beyond this information stage.

#### **5.5. EU support measures**

The Commission is working on a number of other instruments to support implementation of the EPBD and of its revised version. These cannot be included in the recasting, but are activities to provide support for the process.

To accelerate implementation of the Directive, the European Commission is continuing to support the transformation process with several measures:

- Continuation of the Concerted Action – a forum where Member States' representatives can meet and exchange their experience with the implementation with as well as best practices;
- Initiating and financing an extensive package of 31 CEN standards for calculation and rating methodologies for the energy performance of buildings;
- The EPBD Buildings Platform<sup>8</sup> – an information service on the Directive for practitioners and consultants, experts in energy agencies, interest groups, and national policy makers on the state of play, lessons learnt and best practice examples;
- Intelligent Energy Europe Programme<sup>9</sup> – a number of projects are dedicated to aspects concerning the EPBD.

The main actions addressing the problem of insufficient financing are:

- Energy efficiency investments may now be eligible for state aid, under certain conditions;
- Member States are allowed to apply a reduced VAT rate to a specific list of labour-intensive services, incl. renovation of private dwellings (this expires on 31/12/2010 but extension under consideration);
- The Commission has proposed that Member States should use some of the revenues generated by the Emission Trading Scheme (ETS) auctions for energy efficiency purposes;
- The Commission is considering how EU Cohesion policy could better contribute to financing for energy efficiency measures throughout the EU;
- The Commission encourages financing organizations and Member States to improve coordination of energy efficiency financing activities and increased support for them.

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<sup>8</sup> <http://www.buildingsplatform.eu/cms/>

<sup>9</sup> [http://ec.europa.eu/energy/intelligent/index\\_en.html](http://ec.europa.eu/energy/intelligent/index_en.html)

## **6. POSSIBLE ISSUES FOR CONSIDERATION FOR THE RECASTING**

A brief, but not exhaustive overview, of some of the challenges arising out of implementation of the current EPBD and identified in a number of studies and by various stakeholders, were set out in the previous section. In general, the options considered can broadly be grouped into three main categories:

- Simplifying and clarifying the text to facilitate implementation;
- Thresholds which cover the appropriate proportion of buildings and installations;
- Strengthening certain requirements.

More specific questions related to these areas are included in the online questionnaire, available at: <http://ec.europa.eu/yourvoice/ipm/forms/dispatch?form=epbd&lang=en>