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## Energy performance certification procedures, present status

Energy performance certificates will be available when buildings are sold or rented and will be displayed in public buildings. It is expected that this will have a major impact on the increased awareness of building owners and users regarding the energy performance of buildings. It will probably play a key role in the improvement of existing buildings that is a major challenge in reducing building CO<sub>2</sub> emissions. This information paper aims at clarifying the concepts behind the certification procedures.

### 1 > The EPBD requirements

Article 7 of the EPBD sets the requirements regarding the energy performance certificate.

*1. Member States shall ensure that, when buildings are constructed, sold or rented out, an energy performance certificate is made available to the owner or by the owner to the prospective buyer or tenant, as the case might be. The validity of the certificate shall not exceed 10 years.*

*Certification for apartments or units designed for separate use in blocks may be based:*

- on a common certification of the whole building for blocks with a common heating system, or*
- on the assessment of another representative apartment in the same block.*

*Member States may exclude the categories referred to in Article 4(3) from the application of this paragraph.*

*2. The energy performance certificate for buildings shall include reference values such as current legal standards and benchmarks in order to make it possible for consumers to compare and assess the energy performance of the building. The certificate shall be accompanied by recommendations for the cost-effective improvement of the energy performance. The objective of the certificates shall be limited to the provision of information and any effects of these certificates in terms of legal proceedings or otherwise shall be decided in accordance with national rules.*

*3. Member States shall take measures to ensure that for buildings with a total useful floor area over 1 000 m<sup>2</sup> occupied by public authorities and by institutions providing public services to a large number of persons and*

therefore frequently visited by these persons an energy certificate, not older than 10 years, is placed in a prominent place clearly visible to the public.

The range of recommended and current indoor temperatures and, when appropriate, other relevant climatic factors may also be clearly displayed.

## 2 > Some difficult questions

The text of the EPBD related to certification can be easily understood. Nevertheless two questions of interpretation are often raised, tentative answers are given here.

### Who can certify a building?

Article 10 of the EPBD states that

*Member States shall ensure that the certification of buildings, the drafting of the accompanying recommendations are carried out in an independent manner by qualified and/or accredited experts, whether operating as sole traders or employed by public or private enterprise bodies.*

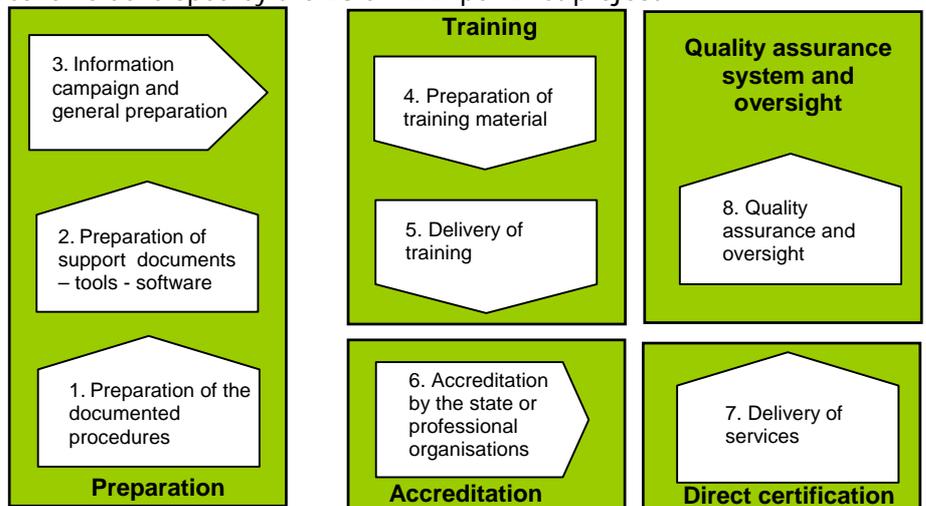
What is an independent manner has to be clarified by Member States. It seems logical to assume that the same company who is responsible for the design or construction of a new building could issue the certificate as long as the inspection is carried out in an 'independent manner'. Member States will need to identify means to guarantee the independence of these certificates and could do so by carrying out checks or audits. Special care must be taken with regards to smaller companies or individuals. For example it may be in their interest to issue the best possible certificate available and this could damage the credibility of certification to the public.

### Shall I display a certificate in buildings like hotels, retail outlets, museums, private banks?

An energy certificate shall be displayed in buildings providing public services. This could include e.g. museums or swimming pools but could exclude e.g. hotels, retail outlets, private banks. Nevertheless the final decision has to be made by Member States.

## 3 > The actions needed to achieve implementation of certification procedures

An efficient implementation of certification procedures requires a global approach. An example of such approach is described in the following scheme developed by the EU SAVE Enper Exist project.



Am I an independent expert ?



Is this a public building ?

Global vision of the actions needed.



A CEN draft standard is available.

The CEN draft standard clarifies some of the words used regarding the energy performance certificate:

- > **energy certification:** procedures enabling to produce an energy certificate.
- > **energy certificate :** a certificate recognised by a member state or a legal person designated by it, which includes the energy performance of a building.
- > **energy class:** an easy to understand metric (e.g. A to G) for scaling the energy efficiency of a building.
- > **reference value:** a standard legal or calculated value against which an energy indicator is compared.
- > **energy rating:** evaluation of the energy performance of a building based on the weighted sum of the calculated or measured use of energywares.
- > **calculated energy rating:** rating based on calculations of the energy used by a building for heating, cooling, ventilation, hot water and lighting.
- > **measured energy rating:** rating based on measured amounts of delivered and exported energy.

The necessity to implement these so diverse actions requires a lot of time. The scheme may help to understand the time needed to reach an efficient implementation.

#### 4 > CEN clarifies the different possible approaches

In order to facilitate the implementation of the EPBD, the European Commission has mandated CEN to produce a set of standards (see also EPBD Buildings Platform Information Paper IP 02). PrEN 15217 “Energy performance of buildings — Methods for expressing energy performance and for energy certification of buildings” is the standard that clarifies the different possible approaches for certification. The choice of the relevant options must be done by each Member State.

##### Clarifying the words used

This standard clarifies some of the words used regarding the energy performance certificate. It is important to note that the words “certificate” and “certification” are used here with a different meaning than in EN ISO 17000. So the meaning of the word “certification” for the application of the EPBD is different than for the application of the Construction Product Directive.

##### Measured versus calculated performance

The certificate can be based either on measured or on calculated rating. Both indicators have their pro’s and con’s.

A calculated rating highlights the intrinsic potential of the building while a measured rating enables taking into account the impact of building management.

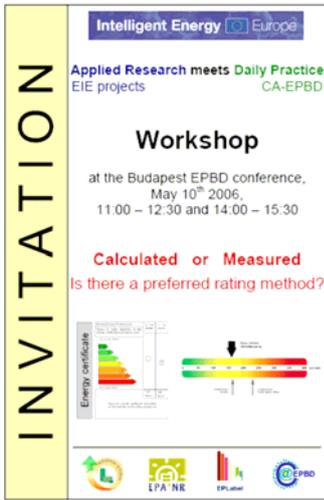
In the selection of the relevant indicators, the following points should be taken into account:

- > For new buildings, the measured energy indicator is not available; hence a calculated rating based on design data is the only practical means of assigning a indicator.
- > A measured energy indicator will no longer be valid after a change of building occupant or of the pattern of use of the building.
- > In existing public buildings where there is no change in ownership, the measured energy indicator can be a measure of the quality of the management and can be used to motivate building operators and users
- > Defining a standard calculated energy indicator includes the collection of data on the building (insulation, heating system, etc.), which will be useful for giving advice on the improvement of energy performance;
- > For managers of buildings, a measured energy indicator can be easily obtained from data often stored in their information systems (energy bills, areas, etc.);
- > Measured energy indicators and standard calculated energy indicators do not necessarily include the same energy uses

##### Different indicators can be used on a certificate

The certificate shall contain an easy to understand global indicator of the energy consumption. Different forms of energy can be delivered to a building e.g. gas, electricity, wood... The indicator will be a weighted sum of these delivered energies. Depending of the weight chosen, the indicator can represent either:

- > Primary energy
- > CO<sub>2</sub> emissions
- > Total energy cost
- > A weighted sum of the Net delivered energy weighted by any other parameter defined by national energy policy.



## Reference values

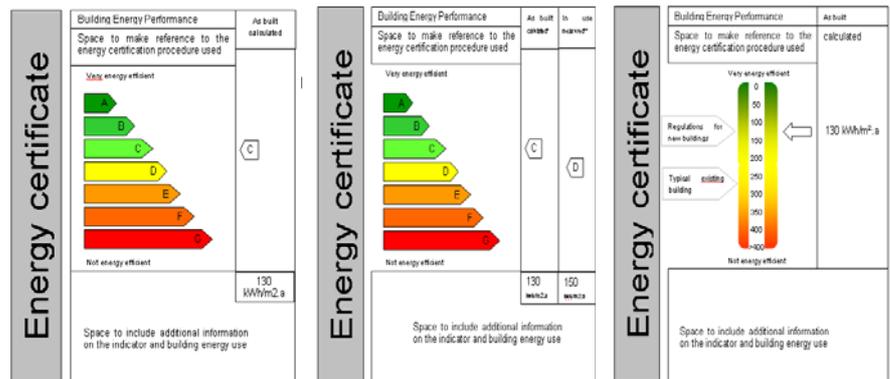
Two reference values are defined by the standard:

- > Energy performance regulation reference. This corresponds to the value typical of the requirements of energy performance regulations for new buildings;
- > Building stock reference. This corresponds to the energy performance reached by approximately 50 % of the national or regional building stock.

## Certificate shape

The shape of the certificate is very important to enable an easy understanding by non specialists. The CEN standards offer three examples of certificate layout which can be used as a basis by Member States. The first example includes a calculated rating and energy classes. The second includes a calculated and a measured rating. The third one includes a continuous scale instead of energy classes.

European workshops enable discussion about the different rating methods, for more info see: [www.enper-exist.com/pdf/news/Newsletter\\_ENPER-EXIST\\_7.pdf](http://www.enper-exist.com/pdf/news/Newsletter_ENPER-EXIST_7.pdf)



Three examples of Energy Certificate described in the draft Standards.

European Projects related to certification

Preparation of documented procedures

[www.epbd-ca.org](http://www.epbd-ca.org)  
[www.enper-exist.com](http://www.enper-exist.com)

Preparation of support documents -tools -software

[www.eplabel.org](http://www.eplabel.org)  
[www.epa-nr.org](http://www.epa-nr.org)

Information campaign

[www.display-campaign.org](http://www.display-campaign.org)  
[www.senternovem.nl/impact](http://www.senternovem.nl/impact)  
<http://stable.motiva.fi>

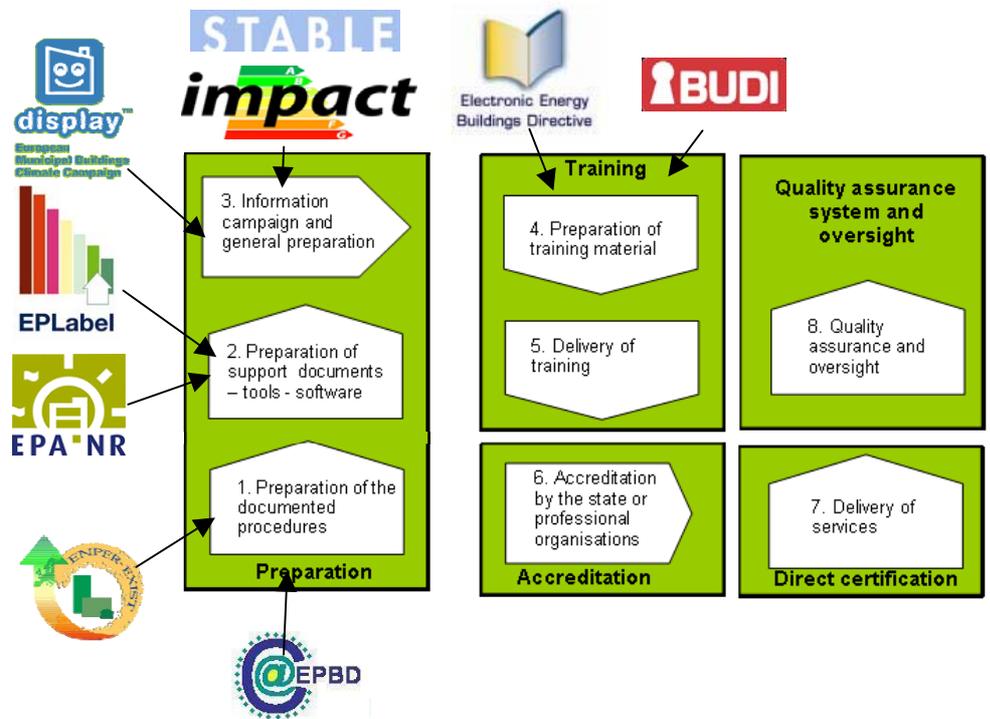
Training

[www.buildingdirective.org](http://www.buildingdirective.org)  
[www.eebd.org](http://www.eebd.org)

## 5 > Intelligent Energy for Europe related projects

Several projects supported by the Intelligent Energy for Europe programme are developing tools which can support the implementation of the certification. A general vision of these projects can be found in EPBD Buildings Platform Information Paper n°1.

The next image highlights the links between the different projects and the actions needed for certification.



## 6 > Actual level of implementation by Member States

The directive should normally be applied since January 2006. Nevertheless Member States may, because of lack of qualified and/or accredited experts, have an additional period of three years to apply fully the certification procedures.

The EPBD Buildings Platform has been launched by the European Commission in the frame of the Intelligent Energy - Europe, 2003-2006 programme. It is managed by INIVE EEIG ([www.inive.org](http://www.inive.org)), on behalf of Transport and Energy DG.

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