

IMPLEMENTATION OF THE EUROPEAN PERFORMANCE OF BUILDINGS DIRECTIVE

Country reports

[March 2007]

> www.buildingsplatform.eu

COUNTRY STATUS REPORTS

available at the EPBD Buildings Platform website



[March 2007]

The **implementation of the Energy Performance of Buildings Directive (EPBD)** is a huge challenge for all of the 27 Member States. Indeed, it requires a whole range of actions, i.e.:

- The development of the general framework for a methodology of calculation of the integrated energy performance of buildings;
- the application of minimum requirements on the energy performance of new buildings;
- the application of minimum requirements on the energy performance of large existing buildings that are subject to major renovation;
- energy certification of buildings; and
- regular inspection of boilers and of air-conditioning systems in buildings and in addition an assessment of the heating installation in which the boilers are more than 15 years old.

In order to inform all interested persons, the Buildings Platform is publishing **country status reports** about EPBD implementation. The underlying philosophy is to have relatively short reports (2...4 pages), whereby the major elements of the national implementation strategy are described and whereby the reader is guided to additional information by use of hyperlinks. Given the fact that the national implementation of the EPBD is a dynamic process, it is clear that the information can be relatively quickly out of date. Therefore, users should be aware that the presented information was only valid at the moment the Country reports were written.

These reports are written by key persons from the individual countries, whereby there is a close collaboration with the EPBD Concerted Action (www.epbd-ca.org). All these country reports can be found on the website of the EPBD Buildings Platform (www.buildingsplatform.eu).

As an additional service to interested readers, we now also offer all available country reports as one single pdf-document.

We hope you have an interesting reading,

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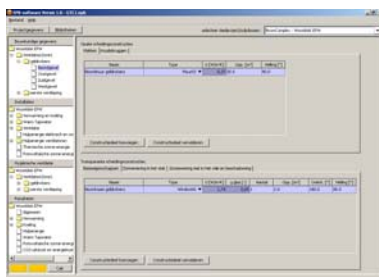
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Status of the EPBD Implementation in the Flemish Region (Belgium)

www.buildingsplatform.eu



Belgian Regions.



www.energiesparen.be/energieprestatie/alldownloads.php#software

In Belgium the implementation of the EPBD is a regional responsibility. In the Flemish Region, the energy performance decree was approved on 7 May 2004 by the parliament. This decree transposes articles 3, 4, 5, 6 and 7 into regional law. A particular element of this regulation is the monitoring it implies.

1 > Legal context

In Belgium the implementation of the Energy Performance of Buildings Directive (EPBD) is the responsibility of the Regions. In the Flemish Region, the Flemish Energy Agency is responsible for Articles 3, 4, 5, 6 and 7. The Department of Environment, Nature and Energy is responsible for Articles 8 and 9.

The energy performance decree was approved on 7 May 2004 by the Flemish parliament. This decree transposes Articles 3, 4, 5, 6 and 7 into regional law and sets up the monitoring methodology. An execution order of the Flemish government of 11 March 2005 lays down the actual energy performance requirements and the calculation procedure. An execution order of 2 December 2005 introduces an energy certificate obligation for new buildings. Other execution orders will follow. All legal documents can be found on www.energiesparen.be/energieprestatie (in Dutch).

2 > Status of the implementation

Calculation procedure

The calculation procedure of the energy performance of new residential buildings, offices and schools is part of the execution order of 11 March 2005. Software has been developed to calculate and check the compliance with the energy efficiency and indoor climate requirements.

Use of this software, which needs further completion, will be mandatory.

The implementation of the new requirements is supported by

- > training,
- > articles and brochures,
- > a website:
www.energiesparen.be/energieprestatie
- > an electronic newsletter.



Energy performance requirements

New requirements are in force with respect to every building for which a building permit is requested after January 2006. There are requirements with respect to thermal insulation, the overall energy performance level and the indoor climate (ventilation, overheating) for those buildings that use energy to create specific indoor climate conditions for human beings. (<http://www.energiesparen.be/energieprestatie/professioneel/epbeisen/tabel.php>)

There are specific sets of requirements:

- > for each construction activity type: new building, refurbishment of a small building, extension of an existing building, major renovation of large building;
- > depending on the use of the building: residential, offices or schools, industry, other non-residential.

New residential buildings, offices and schools have the most stringent requirements. Energy performance requirements will be set in the future for other types of non-residential buildings. But already requirements have to be complied with for all construction activities and building types requiring a building permit for indoor climate and thermal insulation.

The new energy performance regulation entails important new procedures and monitoring rules to ensure compliance with the energy performance requirements. A *'reporter'*, which can be an architect or engineer, must calculate (as-built) and report (after the end of the work) in the *'EPB-declaration'* the executed works to the authorities. The reporter must be appointed before the start of the construction work, the start date of which has to be reported to the Flemish Energy Agency (VEA) to allow time for site checks.

Both the announcement of the start of the construction and the *'EPB-declaration'* must be sent electronically (web application) to the VEA energy performance database (under development).

This database and its application are the core of the control system. In case of non-compliance administrative fines will be imposed on the owner of the building, on the building constructor (when he is a promoter), or on the reporter (when it appears that the *'EPB declaration'* contains errors).

The execution order for the feasibility study of alternative (EPBD-art. 5) systems for new buildings with a total useful floor area over 1 000 m² is under development and will be adopted by the end of 2006.

Energy performance certificate

An energy performance certificate is required for all new buildings for which the Energy performance has to be calculated, and for which a building permit has been requested, since the first of January 2006. The drafting and delivery of this energy performance certificate is part of the procedure related to the *'EPB-declaration'* after construction.

The executive order with respect to the energy performance certificate of public buildings is in the process of approval. Public buildings are government-owned buildings, school buildings and health and welfare services. An operational rating system will be used for the certification of public buildings which should all have a certificate in 2008.

Energy performance certificates for buildings that are being sold or rented will be introduced in 2008 (residential buildings) and 2009 (non-residential buildings). The legislative instruments and supporting software tools are

being developed.

Inspection of boilers

The regulation related to the inspection of boilers is being drafted, the adoption of which is expected by the end of 2006. The mandatory inspections and advisory support will start in 2009. According to the draft regulation boilers using liquids or solid fuel should be inspected annually whereas natural gas boilers will require inspection every 2 years. The inspections will be performed by a qualified boiler technician.

Inspection of air-conditioning systems

The regulation related to inspection of air-condition system is also being drafted. There will probably be two types of inspections:

- > the assessment of the efficiency by the technician who is in charge of the maintenance of the installation (every two years);
- > the assessment of the sizing of the installation in relation to the cooling demand of the building.

Start of inspections: 2009

3 > Future planning

An evaluation of the energy performance regulation and requirements is foreseen every two years.

4 > Relevant information

www.energiesparen.be/energieprestatie website.

*This paper has been prepared in collaboration
with the EPBD Concerted Action (www.epbd-ca.org)*



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Implementation of the EPBD in Belgium - Brussels Capital Region: Status August 2006

The Brussels Capital Region has had a thermal regulation for new or renovated buildings, in force since year 2000. The EPBD requirements will be progressively put into force between 2007 and 2009.

1 > Legal context

The implementation of the EPBD in the Brussels Capital Region is the responsibility of the regional Ministry of Energy (articles 3, 4, ...) and the regional Ministry of Environment (articles 8 and 9). It is currently the same administration and the same Minister.

On 20th July 2006, the Government of the Brussels Capital Region has approved a project of ordinance regarding the transposition of the EPBD in regional law. The ordinance has to be approved by various bodies and finally by the parliament. The execution orders are the responsibility of the Government and will be established later on.

2 > Status of the implementation

Calculation procedures

The calculation procedures (Article 3) will be included in an execution order.

Requirements for new buildings

Minimum requirements for new buildings will be included in an execution order.

The type and level of requirements is governed by the function and the type of building (dwellings, office buildings schools, ...) and may cover :

- > Maximum U-value;
- > Maximum primary energy consumption per m² of floor area;
- > Other criteria (summer comfort, ventilation requirements, ...)

The proof of compliance must be made after completion of the building. Control of the regulation is the responsibility of the regional administration of Energy.

Requirements for existing buildings

Minimum requirements for buildings which are renovated will be included in an execution order. The type and level of requirements is governed by the function and the type of building and the extend of the renovation.

Certification of buildings

The requirements regarding the certification of buildings will be included in an execution order.

Certification will be obligatory for new buildings as soon as the minimum requirements are in force. For public buildings and other buildings when rented or sold, the certificate will be mandatory at a later date (2008-2009).

Inspection of boilers and air conditioning

Inspection of boilers and of air conditioning systems will be included in an execution order and will be mandatory at a later date (2009)

3 > Future planning

The ordinance should be adopted in early 2007. The main execution orders should be published in 2007, to come into force during 2007, 2008 or 2009 (certification of existing buildings - inspection of boilers and air conditioning).

A revision of the requirements is foreseen every five years.

4 > Relevant information

Detailed brochures as well as official texts and tools will available on the Brussels Capital Region website as soon as they are available.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Bulgaria: Status December 2006

This paper provides official information about Directive implementation process in Bulgaria, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Bulgaria is the responsibility of the Ministry of Regional Development and Public Works (Articles 3, 4 and 6) and the Ministry of Energy and Economy and Energy Efficiency Agency (Articles 7,8,9 and 10).

On 19 February 2004, the National Assembly of Bulgaria adopted the Energy Efficiency Act (Decree № 54/2004) (www.mrrb.government.bg www.seea.government.bg) regarding the transposition of the EPBD in national law. The execution orders are the responsibility of the Government. (Ordinances on: Energy performance of buildings - in force since 1 January 2005; Energy efficiency auditing - in force since 1 January 2005; Energy efficiency certification of buildings - in force since 1 January; Energy conservation and heat retention of buildings; Design of technical systems and installations \HVAC\ in buildings)

2 > Status of the implementation

Calculation procedures

The calculation procedures (Article. 3) have been adopted by Ordinance on Energy conservation and heat retention of buildings - in force since 1 March 2005) by the Minister of Regional Development and Public Works. These are:

- > technical requirements for energy conservation and heat retention in buildings;
- > methodology for defining annual energy consumption, taking into account: heat losses through the building structures and windows, heat gains of internal source and solar radiation, climatic data, and other specific requirements for buildings;
- > specific requirements and procedures for new and for existing buildings;
- > technical rules and norms for design of thermal insulation, including values of the coefficients thermal transmittance;
- > rules for water vapour penetration, water tightness, air leakage and solar protection during the summer period;
- > technical criteria for determination of the main indicators for energy consumption which are different for: Residential building - annual energy consumption for heating per 1 m²; Non residential building -

coefficients of specific transmission thermal losses through the building envelope and elements; and for Low temperature non residential building - annual energy consumption for heating per 1 m³.

A general description of the calculation method is given in www.mrrb.government.bg.

Requirements for new buildings

Also on 1 March 2005, the Minister of Regional Development and Public Works adopted the minimum requirements for all new buildings (www.mrrb.government.bg). The requirements come into force for building permits requested after 1 March 2005.

The type and level of requirements are governed by the function and the type of building - residential buildings and non residential buildings (education, hospitals, offices, hotels, schools) and may cover:

- > Maximum U-value;
- > Requirement on average insulation level;
- > Maximum primary energy consumption per m² of floor area.

The proof of compliance must be made after completion of the building. Control of the regulation is the responsibility of the legal personnel - consultants (supervisors) or of the State and municipality authorities.

Requirements for existing buildings

Also on 1 March 2005, the Minister of Regional Development and Public Works adopted the minimum requirements for existing buildings - building renovation, extensions and repairs.

Certification of buildings

The requirements regarding the certification of buildings have been adopted by the Minister of Energy and Economy and the Minister of Regional Development and Public Works with the Ordinance for Energy efficiency certification of buildings (www.mrrb.government.bg and www.seea.government.bg).

Energy certification can be only done after obtaining the building permit.

For public buildings \state or municipal property\ with a gross useful floor area over 1000 square meters, certification is obligatory. The energy certificate is issued for a whole building only, not for a separate apartment.

Inspection of boilers and air conditioning

The organization of the inspection of the boilers in the Republic of Bulgaria is carried out by the General Directorate "Inspectorate for State Technical Surveillance" a section of the State Agency for Metrology and Technical Surveillance, according to the requirements of the Law on Technical Requirements for Products. It is carried out in two main directions according to defined parameters of the installations: high pressure boilers and low pressure boilers.

The heating installations built in a building with its own heating source in most cases uses boilers with solid or liquid fuel; they are not covered by the state register.

Inspection of boilers is covered by the execution order adopted by the Government on 22 March 2005 and is mandatory from 1 April 2006. The procedures for inspection of air conditioning systems are still under discussion.

3 > Future planning

Some changes, foreseen in the act to amend and supplement of the Energy Efficiency Act and in the related with the act ordinances, are:

- > Introduction of Energy Label as a part of the construction works technical passport;
- > The Energy Label should include data on energy characteristics in the different stages of the construction works;
- > Modification of the certificate form for energy performances of a building and introduction of a energy efficiency class (from A to G) in the effective ordinances;
- > Amendment in the period of the certificate validity from 10 years to maximum 7 years.

These changes are expected to be adopted by 30 July 2007.

It is expected that the execution order for the inspection of boilers and air conditioning systems will be adopted by the Government before the end of 2007 and will come into force from 1 July 2008. Introduction of a training module of inspectors for boilers and air conditioning systems is foreseen.

A revision of the requirements is foreseen before the end of 2009.

4 > Relevant information

Detailed brochures as well as official texts and tools are available on the national websites.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Denmark: Status August 2006

Denmark has implemented the EPBD since January 1st, 2006. Denmark has for many years had fairly strict energy requirements in the building regulations, obligatory labelling scheme for buildings and obligatory inspection scheme for boilers. Denmark has now tightened the energy requirements in the building regulations further and developed new labelling and inspection schemes.

1 > Legal context

In Denmark the implementation of the Energy Performance Building Directive, EPBD is the responsibility of the Danish Energy Authority (Articles 3, 5, 7, 8, 9 and 10) and of the Danish National Agency of Enterprise and Construction (articles 3, 4, 5 and 6).

2 > Status of the implementation

Calculation procedure

The Danish calculation procedure (Article 3) is described in SBI-direction 213: Energy demand in building (In Danish). This publication also includes a PC calculation program. The calculation core from this program is to be used by all other programs to ensure identical calculation of energy demand of buildings. Further information on the procedure (in Danish) is on www.sbi.dk/Be06.

Requirements for new buildings

The new energy requirements for new buildings in relation to the EPBD (Article 5) are in Addendum 12 to the Danish Building Regulations 1995, BR 95 (in Danish) and in Addendum 9 to the Danish Building Regulations for Small Dwelling 1998, BR-S 98 (in Danish). The energy requirements in both regulations are identical. Minor adjustments or additions to the energy requirements are included in Addendum 13 and 14 to BR 95 and in Addendum 10 and 11 to BR-S 98. Further information on the new energy requirements can be found on www.ebst.dk (in Danish).

The new energy requirements were issued June 16, 2005. The requirements came into force January 1, 2006 with a transition period

of 3 months until April 1, 2006 when the new requirements must be fulfilled in order to obtain a building permit. The new energy requirements are not only an implementation of the EPBD. They also impose stricter energy performance requirements in accordance with current Danish action plans for an increased 25 % energy saving in new buildings, compared to requirements before 1. January 2006.

An energy performance target is the main requirement for all types of buildings heated to at least 15 °C. The target is based on the supplied energy needed for operating the building. There are separate targets for housing (not including lighting) and non-domestic buildings (including lighting). An extra allowance to the basic target is given to non-domestic buildings with high ventilation requirements for IAQ purposes, high lighting requirements, long operation hours or large hot water demand.

For all type of buildings the new energy requirements also include two classes of low energy buildings. Class two has an energy demand of 75 % or less compared to a normal house, and class one has an energy demand of 50 % or less compared to a normal house. Low energy buildings may be exempted from connecting to public networks with natural gas or district heating, which is otherwise obligatory in some areas.

The energy frame is supplemented by specific requirements for U-values, minimum boiler efficiency, pipe insulation, heat recovery, fan power efficiency etc.

Proof of compliance with the energy requirements must be made after the completion of the building in order to obtain the permit to use the building. Control of compliance with building regulations is the responsibility of the commune where the building is located. In practice the control of the building in relation to the energy requirements is performed by the energy consultants who also issue the energy label, see later.

Requirements to existing buildings

The requirements for existing buildings undergoing renovation (Article 6) are presented in the same addendums to the Building regulations as the requirements to new buildings and with the same enforcement schedule.

In BR 95 covering multi-family houses and non-domestic buildings the 25 % rule (preamble 13) in the EPBD applies to all buildings, independent of floor area. Cost efficient energy saving measures are required if renovation of the building shell, or the energy installations is higher than 25 % of the value of the building, excluding the value of the land, or if more than 25 % of the building shell undergoes renovation. Also cost efficient energy saving measures not included in the original renovation plan have to be installed. Only churches, museums or protected or those buildings worthy of preservation are exempted from the requirement.

“Cost efficient energy saving measures” are defined as measures that by simple calculation bring at least 33 pct overhead over a standard life time (dependent on the type of the measure). The cost efficient energy saving measures are identified by the energy consultant as part of the labelling of a building, see later.

To all buildings (also to small dwellings covered by the BR-S 98 regulations) there is a requirement to perform cost efficient energy saving measures to the specific component in the case of renovation of roof, renovation of climate shield on external walls, renovation or change of windows, installation of a new boiler or change of heat supply.

Governmental websites:

> www.ens.dk

> www.ebst.dk

Other relevant websites:

> www.sbi.dk

> www.femsek.dk

Improvement of the energy performance is required at renovation if *"the total cost of the renovation is higher than 25 % of the value of the building, excluding the value of the land, or more than 25 % of the building shell undergoes renovation."* This has been the most debated issue during the implementation of the EPBD in Denmark. The government's original plan was to implement the same rule for small dwellings, too. This was dropped at a late phase of the implementation due to severe problems regarding legal responsibilities.

Energy labelling of buildings

The requirements regarding the energy labelling (certification) of buildings (Article 7) has been adopted by the Danish Parliament by Act no. 585 of June 24, 2005 on Energy Savings in Buildings (in Danish). Based on the act by Parliament the Danish Energy Authority has issued Decree no. 1294 of December 13, 2005 on Energy labelling of Buildings (in Danish). Minor adjustments to the original decree are in decree no. 218 of March 20, 2006 and in decree no. 339 of April 19, 2006.

In the new energy labelling scheme buildings need an energy label:

- > when they are new constructed,
- > when they are sold,
- > if rented out.

In the case of new buildings the building needs to have a sufficient energy label to fulfill the energy requirements in the building regulations to be granted a permit for use.

In the case of existing buildings being sold or rented out, the buildings must have an energy label of not more than 5 years old. This also applies to blocks of flats, where individual flats are rented out or sold. In blocks flats the labelling is done on the building, but with an individual sub label for each flat stating the heating demand.

There are 14 classes on the labelling scale from A1 to G2, where A1 is the highest. The decision to have 14 classes on the labelling scale is based on the need to have a sufficient number of classes to make it possibly to improve the label by performing relevant energy saving measures in buildings of different ages and energy standards. New buildings must at least be labelled as class B1 to get the permit for use. Class A1 and A2 are for low energy buildings class 1 and 2.

The daily operation of the labelling scheme is delegated to a secretariat also operating the other schemes related to the EPBD.

The specific rules for labelling to be used by the energy consultants are in: Handbook for Energy Consultants. The handbook is available to the public on www.femsek.dk (in Danish). The handbook also includes tabular data for typical constructions and installation in building to facilitate the uniformity of the labels being given by different consultants.

The energy consultant is supposed to identify two types of energy saving measures:

- > immediately feasible measures and
- > measures that are only feasible if carried out as supplement to ongoing renovation.

Energy labelling of existing buildings must conform to the new standards from September 1, 2006. Until then, the energy labelling conformed to the

existing Danish energy labelling scheme. The reason for a transition period was to allow time needed to incorporate the labelling system into computer programs.

Inspection of boilers and heating systems

The requirements regarding inspection of boilers and heating systems (Article 8) are in Decree no. 1296 of December 13, 2005 on Inspection of Boilers and Heating Systems in Buildings from the Danish Energy Authority (in Danish) with addition in Decree no. 217 of March 20, 2006. The inspections of boiler and heating systems are based on the same act as the energy labelling scheme.

The inspection of boilers and heating systems were implemented on September 1, 2006, on the same date as the energy labelling scheme. Denmark had already an inspection scheme for oil-fired burners.

Inspection of air conditioning and ventilation systems

It is expected that the new scheme for inspection of air conditioning (Article 9) will also include inspection of large ventilation systems. The new scheme is expected to be implemented from January 1, 2007.

3 > Future energy saving in building

Irrespective of the EPBD the Danish government and parliament has had for many years ongoing plans for energy savings in buildings. According to the latest plan decided in the Danish Parliament on June 10, 2005 further energy saving must be achieved in new buildings by 2010 and 2015. The target is to save an additional 25 % and 50 % compared to new buildings fulfilling the requirement from April 1, 2006. This corresponds very well with the definition of low energy building Classes 1 and 2. The aim is also to achieve further savings in existing buildings.

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Implementation of the EPBD in Estonia: Status January 2007

This paper provides official information about Directive implementation process in Estonia, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Estonia is the responsibility of the Ministry of Economic Affairs and Communications.

The draft Act regarding the transposition of the EPBD in national law (and amending 5 different legal acts) passed three readings in the Parliament and was approved by the Parliament on 27.09.2006. The execution orders will be the responsibility of the Ministry of Economic Affairs and Communications.

2 > Status of the implementation

Calculation procedures

The calculation procedures (Article 3) will be adopted by the Minister of Economic Affairs and Communications.

Requirements for new buildings

The Government will adopt the minimum energy performance requirements. The requirements come into force for building permits requested after 1 January 2008.

The type and level of requirements are governed by the function and the type of building (dwellings, office buildings, schools ...) and may cover:

- > Maximum acceptable U-value;
- > Maximum energy consumption per m² of floor area.

The proof of compliance must be made 2 years after completion of the building. Control of the regulation is the responsibility of the local municipality where the building is located.

Requirements for existing buildings

For building renovation and for extensions to existing buildings the Government will adopt minimum requirements separately, which are not similar to requirements applied to the new buildings. These requirements should be in force before 1 January 2008.

Certification of buildings

The requirements regarding the certification of buildings will be adopted by the Minister of Economic Affairs and Communications. The scope of public buildings certification will be set by the Government.

Certification is mandatory for new buildings with a building permit required after 1 January 2009. For public buildings, certification is needed from 1 January 2009. Other buildings, when rented or sold must have an energy performance certificate from 1 January 2009.

Certification will be carried out by persons, who have attended training courses for energy certifiers and fulfilled other requirements of relevant professional standards. These professional standards will be developed in the winter of 2007.

Inspection of boilers and air conditioning

Inspection of boilers will be covered by the Minister's regulation and is mandatory from 1 January 2008. The procedures for inspection of air conditioning systems are still under discussion.

3 > Future planning

It is expected that the execution order for the inspection of air conditioning systems will be adopted by the Government before the end of 2008 and will come into force from 1 January 2009.

A revision of the requirements is foreseen before the end of 2009.

4 > Relevant information

Detailed brochures as well as official texts and tools will be available on the national websites.

In order to stimulate the certification of buildings, subsidies will be also available and will be widely described on the specific websites.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Germany: Status October 2006

This paper provides official information about Directive implementation process in Germany, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Germany in general is the responsibility of the **Bundesministerium für Verkehr, Bau und Stadtentwicklung** (Federal Ministry of Transport, Building and Urban Development) and the **Bundesministerium für Wirtschaft und Technologie** (Ministry of Economics and Technology) and Article 8 is the responsibility of the **Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit** (Ministry for the Environment, Natural Conservation and Nuclear Safety).

The EPBD is implemented in the legal context of the **Energy Saving Act**, which originally came into force in 1976 and has since then been used to set up the requirements for:-

- > the thermal insulation of buildings,
- > the energy performance and maintenance of heating appliances and
- > the billing of heating cost according to individual consumption of the tenants.

On this basis the current **Energy Saving Ordinance** (EnEV 2002 - amended 2004) sets up requirements for new buildings and the refurbishment of building stock. These are mainly based on an energy balance of the whole building taking into account most of the aspects given in the annex of the EPBD. For normally heated new buildings the overall requirement is based on primary energy, an energy certificate (Energiebedarfsausweis) has to be issued for these new buildings as well as for buildings in the course of major refurbishments.

In future, this approach will apply to residential buildings only - except those equipped with air conditioners (very few because of strict limits for solar shading).

To implement the aspects "lighting" and "cooling", the **Energy Saving Act had to be amended**. This was also necessary for the implementation of energy certificates for existing buildings, which are not subject to renovation.

The German Federal Parliament adopted the amendment; it came into force on 1st September 2005 (<http://www.gesetze-im-internet.de/eneg> - in German language only -). Thus, for the amendment of the Energy Saving Ordinance the Government now only needs the consent of the Second Chamber of Parliament (Bundesrat).

2 > Status of the implementation

Calculation procedures

The calculation procedures for residential buildings will stay in force. They are based on two German pre-standards, which are mainly transpositions of EN 832. The current versions are DIN V 4108-6: 2003-06 and DIN V 4701-10: 2003-08.

In 2005, the German Standardisation Institute (DIN) published under the Title "DIN V 18599 (Part 1 - 10)" the results of an interdisciplinary standardisation work as the calculation method for overall energy performance of buildings including all aspects of the EPBD. The standardisation works were initiated by the federal government in order to have a universal method covering all aspects **primarily for non residential buildings**.

A spreadsheet for test-application of DIN V 18599 can be obtained free of charge from http://www.ibp.fhg.de/wt/berichte/2004/jb_04_43.html. Software for the application of DIN V 4108-6 in combination with DIN V 4701-10 can be obtained free of charge from <http://mh-software.de/de/download/freeware/index.php>.

The draft amendment of the Energy Saving Ordinance is currently subject to political negotiations concerning some details of energy certification. The official procedures are due to start soon, but the whole process will take a few months.

Requirements for new buildings

The requirements for residential buildings will be kept at the present level as will the requirements for refurbishment of parts of the building's fabric. For non-residential buildings the requirements will be transposed without significant changes to the new model taking into account the different uses of these buildings and the new aspects. **In general, there will be no changes in the level of requirements after the current amendment comes into force. The level of requirements will be revised later, not before people have got familiar with the new methods for non-residential buildings and the energy certificates for existing buildings.**

The level of requirements for new buildings is governed by the function and the type of building (residential / non-residential with detailed conditions of use) and also the Surface/Volume-Ratio.

They consist of:

- > a maximum primary energy demand,
- > a maximum average u-value
- > maximal u-values of each element of the building's fabric
- > several requirements on quality of boilers, controls and pipe insulation
- > building air-tightness and
- > the prevention of thermal bridges.

Requirements for existing buildings

The requirements in cases of refurbishment consist of either

- > a maximum primary energy demand (140% new buildings) and
- > a maximum average u-value (140% new buildings) or
- > maximum u-values (=state of the art) for each element of the

refurbishment.

The requirements have to be met, if more than 20% of the element in question (walls, windows, roof/upper ceiling, cellar ceiling/walls) is subject to refurbishment.

Certification of buildings

Certification is already obligatory for new buildings since February 2002. Certification and qualification of the assessors is subject to the amended Energy Saving Ordinance (amendment in process, see 1) and will come into force in three steps in relation to the date of the final issue of the ordinance. The details are subject to current political negotiations.

Inspection of boilers and air conditioning

Inspection of boilers is covered by the Small and Medium Combustion Plant Ordinance (http://bundesrecht.juris.de/bimschv_1_1988/ - in German language only -) last amended 1997. The Inspection of air conditioners is subject to the amendment of the Energy Saving Ordinance and will come into force in several steps according to the date of installation of the appliance and in relation to the date of the final issue of the ordinance.

3 > Future planning

The amended Energy Saving Ordinance will be accompanied by several directives about simplification of procedures to keep the cost of certification low.

A revision of the level of requirements is envisaged in a few years.

4 > Relevant information

As soon as the legal process has started detailed information about the amendment of the Energy Saving Ordinance will be available on http://www.bbr.bund.de/nn_22066/DE/ForschenBeraten/Bauwesen/EnergieeinsparungKlimaschutz/EnergieeinsparungGebaeudebereich/energieeinsparunggebaeudebereich__node.html__nnn=true - in German language only -.

Governmental websites:

> www.bmvbs.bund.de

> www.bbr.bund.de

Other interesting information:

German energy-related standards

> www.enev-normen.de

Download of legislative texts:

> www.gesetze-im-internet.de/

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Greece: Status January 2007

This paper provides official information about Directive implementation process in Greece, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Greece is the responsibility of the Ministry of Development and the Ministry of Environment.

By early 2007, the Parliament is planning to adopt the Decree (www.ypan.gr) regarding the transposition of the EPBD in national law. The execution orders are the responsibility of the Ministries of Development and Environment.

2 > Status of the implementation

Calculation procedures

Greece is in the process of setting the regulations for the EPBD (general design/inspection principles and minimum requirements for the building cell, lighting, boiler/heating system, air conditioning etc). The country is planning to form the calculation procedures (art. 3) in parallel to the regulations. It is foreseen that they will be adopted by the Government within 2007. There will be specific procedures for dwellings and for other buildings.

Software tools are expected to be developed by the market and verified by appropriate government bodies thereafter.

Requirements for new buildings

The Government of Greece is completing a study on minimum requirements for all new buildings. The task is being undertaken by the Ministry of Development with the help of the Regulatory Authority for Energy. The requirements will come into force for building permits requested after 1 January 2009.

The type and level of requirements are function of the type of building (dwellings, office buildings, schools ...) and may cover:

- > Maximum U-value;
- > Requirement on average insulation level;
- > Maximum primary energy consumption per m² of floor area;
- > Boiler and air conditioner efficiencies.

New buildings should produce an energy study for the building permit to be issued. The proof of compliance must be made after completion of the building. It is foreseen that control of the regulation is the responsibility of the Regional Authorities (the existing Building Permit Offices) where the building is located.

Requirements for existing buildings

The procedure followed for new buildings covers also existing buildings. The ongoing studies examine minimum requirements for new building components when building renovation is done and for extensions to existing buildings.

The requirements will be formally adopted on 1 January 2009.

Certification of buildings

The requirements regarding the certification of buildings will be adopted by the Government by mid 2007. The general certificate model to be used will be the A-G label. There are considerations, however, to allow for more categories above the B level (eg. A+, A, A- etc.), to stimulate competition towards very efficient building design in the future. Certification will be obligatory for new buildings with a building permit after 1 January 2009. This date will also hold for public buildings, and other buildings when rented or sold.

Inspection of boilers and air conditioning

The plan for Inspection of boilers has been prepared and is under review by the Ministries of Development and Environment (www.minenv.gr/4/41/g4100.html). It will replace existing boiler inspection procedures undertaken by the Ministry of Environment. The examination of air conditioners will start during the first part of 2007.

3 > Future planning

A study on minimum requirements for Air-conditioners will start in spring 2007 and is expected to be handed to the relevant Ministries for review by autumn 2007.

The Technical Chamber of Greece has also initiated a study for inspection requirements and (economic) rates for inspectors. The Ministry of Development is reinstating a Committee to finalise requirements for new and existing buildings, and organise in general the implementation of the Directive.

A revision of the requirements is foreseen before the end of 2009.

4 > Relevant information

Detailed brochures as well as official texts and tools are available on the national websites (eg. www.cres.gr/kape/publications/download.htm, www.cres.gr/greenbuilding, www.ypan.gr).

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Hungary: Status August 2006

This paper provides official information about Directive implementation process in Hungary, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Hungary was the responsibility of the State Office of Housing and Building (Articles 3, 4, 5, 6, 7) and the Ministry of Economy and Transport (articles 8 and 9).

To date, the national regulation, relating to Articles 3, 4, 5 and 6 was issued in May 2006 (Ministerial Order TNM 7/2006). The rules are in force from 1 September 2006, from this date a building permit is mandatory for new buildings and also for buildings over 1000² floor area undergoing major renovation.

The text of the national regulation relating to Article 8 was published in 2005. After discussion by different professional bodies it has been approved, nevertheless it is not yet issued as a ministerial order. The reason is due to an ongoing discussion, as to whether the issue of certification should be the precondition of the registration of the real estate ownership.

Meanwhile after the general election the administration has been reorganised and the State Office of Housing and Building no longer exists. The ongoing tasks should be dealt with by the new Ministry of Interior.

Regarding Articles 8 and 9 the Ministry of Economy and Transport is still collecting proposals from professional bodies.

All related documents have been published on different forums. Due to the above mentioned reorganisation the only recent reliable link is the homepage of the Department of Building Energetics, Budapest University of Technology and Economics (which developed the national regulation) www.egt.bme.hu

2 > Status of the implementation

Calculation procedures

The calculation procedures (Article 3) have been adopted and the related national regulation is in force. A general description of the calculation method is given in www.egt.bme.hu. Information on the software tool can be found in www.bausoft.hu.

Requirements for new buildings

Also the national regulation on minimum requirements for all new buildings is in force (www.egt.bme.hu). The requirements for building permits came into force after 1 September 2006.

The type and level of requirements are governed by the function, the type of building (dwellings, office buildings schools, ...) and the surface to volume ratio and including:

- > Maximum U-value of each building element;
- > Requirement on specific heat demand coefficient of the building (W/m^3K), which includes transmission heat losses (incl. thermal bridge effect) and passive solar gains);
- > Maximum primary energy consumption per m^2 of floor area.

The first level (maximum U value of elements) is generally in force. On the second level the specific heat demand coefficient depends on the surface to volume ratio. The calculation method facilitates the application of a simple estimation and a more detailed calculation (including solar access) of passive solar gains. The simplified estimation is intended to be on the safe side.

Maximum primary energy consumption per floor area depends on the surface to volume ratio and the use of the building. Nevertheless, in case of multipurpose buildings (e.g. an hotel) when no figure is prescribed in advance, the requirement should be defined according to the state of the art, so that the requirements on the first and second level must be met and the primary energy consumption is to be calculated on the base of standardised ("notional") mechanical systems.

Requirements relating to summer overheating are formulated as the maximum mean daily indoor-outdoor temperature, which depends on the provisions of natural ventilation and thermal mass.

Requirements on each level must be fulfilled. The fulfilment of the requirements of a lower level (e.g. U value of building elements) does not automatically guarantee the fulfilment of the requirements on a higher level. Thus, unfavourable surface to volume ratio must be compensated by better U values in order to meet the overall heat demand coefficient requirement, or unfavourable HVAC systems must be compensated by better building.

The compliance is a precondition of the building permit and will be checked again when the building is commissioned. Control of the regulation is the responsibility of the Commune where the building is located.

Requirements for existing buildings

According to the published Ministerial Order, the same rules for new buildings apply to major renovation of existing buildings over 1000² floor area. The limitation of the U value of building elements automatically limits the selection of elements which can be used for renovation. The regulation is in force from 1 September 2006. Further details are available on www.egt.bme.hu.

Certification of buildings

The certification of buildings has been adopted by the professional bodies and informally by the State Office of Housing and Building, but the related national regulation is not yet issued due to the afore mentioned discussions (precondition of real estate ownership). It is expected that the ministerial order will be issued by the end of 2006.

It is to be mentioned that asset method has been selected, thus the calculation method for design and certification overlap.

Inspection of boilers and air conditioning

Discussions are in progress between the Ministry of Economy and Transport and invited professionals).

3 > Future planning

It is expected that the certification will be implemented in 2007, while the execution order for the inspection of air conditioning systems is unlikely to be started before the end of 2008.

A revision of the requirements is foreseen every five years.

4 > Relevant information

Detailed brochures as well as official texts and tools are available on the national websites. Several pilot course have been run, a textbook with the rules, input data, worked examples has been published, together with a hypertext on www.egt.bme.hu Software is available (developed in collaboration with the authors of the regulation).

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Ireland: Status August 2006

This paper provides official information about the Directive implementation process in Ireland. For further details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The legal transposition of the EPBD in Ireland is the responsibility of the Department of the Environment, Heritage and Local Government -DEHLG (all Articles except 8 & 9) and the Department of Communications, Marine and Natural Resources - DCMNR (Articles 8 and 9).

The EC Energy Performance of Buildings Regulations 2006 ([S.I. No. 666 of 2006](#)) were published in December 2006. This transposes elements of Article 5 [consideration of alternative/renewable energy systems during the design of large buildings] and Article 7 - [Building Energy Rating (BER)] of the EPBD into national legislation.

The Building Regulations (Amendment) Regulations 2005 ([S.I. No. 873 of 2005](#)) amended Building Regulations Part L, which deal with the minimum energy performance requirements for new buildings. These were published by DEHLG in December 2005 and came into operation from 1 July 2006- and, inter alia, gave legal effect to Articles 3- 6 of the EPBD.

The above regulations had been enabled by the EC (Energy Performance of Buildings Regulations 2005 ([S.I. No. 872 of 2005](#)), published in December 2005, which enabled the making of national regulations to give effect to the EPBD.

Outline details of a proposed campaign to encourage the voluntary inspection/servicing of boilers was forwarded to the EU Commission on 31 August 2006 - Article 8(b) of the EPBD.

Regulations ([S.I. No. 346 of 2006](#)) regarding the mandatory inspection of air-conditioning systems were published by DCMNR in June 2006 - Article 9 of EPBD.

2 > Status of the implementation

Following a process of public consultation, the "Action Plan for Implementation of the EPBD in Ireland" was published on 1 August 2006. This sets out the suite of proposed tasks, responsibilities and timescales required to achieve full implementation in a workable and cost-effective manner. Copies of the plan are available at www.sei.ie/epbd.

Calculation procedures

The calculation procedure for new residential buildings (Article 3) has been developed (Dwellings Energy Assessment Procedure (DEAP)) and was published by SEI in June 2006. Specific procedures will be developed for existing dwellings and for non-residential and public buildings.

The calculation method (DEAP) can be downloaded from www.sei.ie/epbd/deap. DEAP is currently available as an Excel workbook. A more user friendly software tool is being developed and will be finalised by April 2007.

A calculation procedure for new non residential buildings will be adopted during 2007.

It is expected that an operational rating may be used for the energy rating of public buildings and pilot projects will be carried out to test and evaluate this approach.

Requirements for new buildings

Technical Guidance Document Part L advising designers and builders on how to comply with the amended Part L Building Regulations (S.I. No. 873 of 2005) was published in May 2006. The requirements come into force for planning applications submitted after 1 July 2006.

The type and level of requirements are a function of the type of building (dwellings, office buildings schools, ...) and cover :

- > Limitation of Heat loss through the building fabric
- > Limitation of CO₂ Emissions
- > Controls for space heating and hot water supply systems
- > Insulation of hot water storage vessels, pipes and ducts

Technical guidance document L can be downloaded from www.environ.ie.

Requirements for existing buildings

From 1991, the Government of Ireland adopted minimum requirements for new building components when building renovation is done and for extensions to existing buildings. These requirements have to be respected since 1 June 1992 and have been strengthened from 1 July 2006. The relevant documents can be downloaded from the building standards section of www.environ.ie.

Certification of buildings

The requirements regarding the certification of buildings have been set out in the aforementioned Action Plan which can be downloaded from www.sei.ie/epbd.

Certification will be obligatory for new residential buildings from 1 January 2007. For new non-residential - including public - buildings, a Building Energy Rating (BER) will be needed from 1 July 2008. Existing buildings (residential, non-residential and public buildings) when rented or sold must have a Building Energy Rating (i.e. an energy performance certificate) from 1 January 2009.

Following a consultation process with key stake holders, the format of the BER label for dwellings was finalised in December 2006 and was published in the First Schedule of [S.I. No. 666 of 2006](#) .

Inspection of boilers and air conditioning systems

An information and promotional campaign for boilers (Article 8(b)) is being developed and will be implemented from January 2008 in Ireland.

The inspection of air-conditioning systems is covered by the Statutory Instrument No. 346 of 2006 European Communities (Inspection and Assessment of certain Air-Conditioning Systems) Regulations 2006. These regulations were adopted in June 2006 and will be mandatory from January 2008. The procedures for inspection of air conditioning systems are still being developed.

3 > Future planning

The administration system to support the BER scheme is currently being finalised.

A software tool is being developed ("PASSES") for assessing the feasibility of alternative energy systems in new buildings and is expected to be available in May 2007.

User friendly software is being developed for BER of new dwellings and will be available by April 2007.

A study of the methodology to calculate the energy performance of non-residential buildings is being initiated.

4 > Relevant information

Detailed presentations and information as well as official texts and tools are available on the national website www.sei.ie/epbd.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Lithuania: Status January 2006

This paper provides official information about Directive implementation process in Lithuania, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The responsibility of the implementation of the EPBD in Lithuania is divided between the Ministry of Environment (articles 3,4,5,6,7 and partly article 10) and the Ministry of Economy (articles 8,9 and partly article 10).

2 > Status of the implementation

Calculation procedures

The main provisions on the energy performance of buildings and the certification of the energy performance of buildings are described in The Law Amending the Law on Construction no. X-404, adopted 17 November, 2005 by the of the Seimas (Parliament) of the Lithuania Republic. The Lithuanian calculation procedure (article 3) is described in Building Technical Regulation STR 2.01.09:2005 „Energy Performance of Buildings; Certification of Energy Performance of Buildings“, adopted on 20 December, 2005 by the Order no. D-1-624 of the Ministry of Environment. The software is was prepared and adopted by the Ministry of Environment. The training program, methodical material attestation, and rules and procedures for the experts were adopted by the Orders of the Ministry of Environment. The institutions responsible for the training and attestation of the experts were appointed. The Commission was constituted for the attestation of the experts. Further information on the procedure (in Lithuanian) is on www.am.lt and www.spsc.lt.

Requirements for new buildings

The new energy performance requirements for new buildings in relation to the EPBD (article 5) are described in the afore mentioned Building Technical Regulation. The energy performance class of new buildings (building part) must be not less than C. This requirement is valid for all new buildings, for which the set of the design terms (references) was issued before after the Regulation came into force.

These requirements came into force on 4 January, 2006. Certification requirements for new buildings came into force from 1 January, 2007.

Requirements for existing buildings

The energy performance class of large buildings (building part) with a heated area of more than 1000 m² after major renovation must be not less D. This requirement is valid for all buildings after major renovation, for which the completion of the design terms was issued after the Regulation came into force. The requirements for energy performance class are not obligatory for buildings (building part) for sale or rent, but evaluation procedure will be mandatory from 1 January 2009.

These requirements came into force on 4 January, 2006. Certification requirements for existing and refurbished existing buildings will come into force from 1 January, 2009.

Certification of buildings

Certification requirements for new buildings came into force from 1st January, 2007. Certification requirements for existing and refurbished existing buildings will come into force from 1 January, 2009. The first certificate of the energy performance of building was issued on 10 January, 2007.

The qualifications required from experts are: engineer diplomas with experience of three years in construction, special training courses and required certification practice of three buildings.

According to the Order No. 4-73 of the Minister of Economy of the Republic of Lithuania of 28 February 2006, inspection of boilers fired by non-renewable liquid or solid fuel of an effective rated output of more than 100 kW capacity will be started this year. Inspection of boilers fired by non-renewable liquid or solid fuel of an effective rated output of 20 kW to 100 kW and air conditioning systems of an effective rated output of more than 12 kW will start in 2008.

3 > Future planning

- > To continue the training program of the experts and to prepare necessary number of experts for the energy performance certification of buildings.
- > To revise experts training program every 5 years.
- > Certification requirements for existing and refurbished existing buildings will come into force from 1 January, 2009.

Ministry of Economy drafted teaching programmes and related methodological material of the independent qualified inspectors of boilers, heating and air conditioning systems. These programmes are being adopted at the moment. Inspection of boilers fired by non-renewable liquid or solid fuel of an effective rated output of 20 kW to 100 kW and air conditioning systems of an effective rated output of more than 12 kW will start in 2008.

4 > Relevant information

The experts training program was prepared on 21 June 2006 and adopted by the Order no. D-1-305 by the Ministry of Environment. The experts training courses started in November and the first group of 30 experts was attested on 11 December 2006. The training of the second group of experts started on 12 December 2006. For the moment, a group of 50 experts are being attested. The software has been prepared and adopted.

The Certification Centre of Construction Products under the Ministry of Environment was appointed to manage the attestation of the expert and

the registration of the certificates of the energy performance of building. Two institutions were appointed as teaching organisations for experts: Architecture and building institute of the Kaunas Technological University and Quality Management Centre of Vilnius Gedimino Technical University (32 hours of training and three certificated buildings as practical experience).

Detailed official information, texts and tools will be available on the national websites. Primary information and related legal acts are already available on the national websites www.am.lt; www.spsc.lt; www.ukmin.lt

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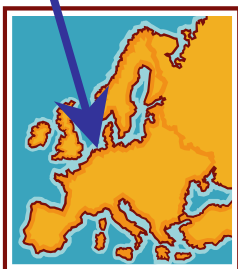
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Implementation of the EPBD in The Netherlands: Status and planning

The Netherlands is very experienced in low-energy-building. Due to the existing certification method, there are few problems issuing an EPBD Energy Certificate for new buildings. The Directive is more difficult to implement for the existing building stock (built before 1997), which is 93% of the total building stock in the Netherlands.

1 > Legal context

The implementation of the Energy Performance of Buildings Directive in the Netherlands falls under the responsibility of the Ministry of Housing, Spatial Planning and the Environment.

On November 1st 2005 the Dutch government notified the European Commission on the status of the implementation of the EPBD in the Netherlands. The Netherlands fully underlines the importance of the EPBD and strives for a full implementation of the Directive.

The Dutch government aims at complete implementation of the EPBD in the Netherlands, from January 1st 2007. The first step is the training and accreditation of assessors or inspectors who will then be qualified to issue the Energy Performance Certificate. Once the Netherlands has sufficient qualified inspectors, the Energy Performance Certificate will become mandatory for every transaction in the building sector.

2 > Status of the implementation

The Netherlands already meets the Directive on a number of issues. The missing issues are being adapted and incorporated into Dutch law (*Article 7 - Energy performance certificate*), or measures are brought under the attention of the end-users via another route (*Article 8 - Inspections of boilers and Article 9 - Inspections of air-conditioning systems*). Like the European Union, the Dutch government has an active policy to keep the administrative costs for citizens minimised. For this reason, the costs for obtaining a certificate are kept to a minimum.



First version of the Dutch energy performance standard (1994). Since then the standard and the minimum requirements have been regularly updated.

Calculation procedures

Currently a substantial part of the EPBD has already been integrated into Dutch law.

Article 3, The methodology for new buildings already complies with the current Energy Performance Standard (EPN). For the existing building stock the actual Energy Performance Advice (EPA) methodology is being simplified. As a result, the calculation procedures for this will be ready before the end of 2006. A quality assurance system will also be ready by the end of 2006.

Article 4, Setting of energy performance requirements for new buildings, complies with the Dutch Energy Performance Standard (EPN). The same methodology applies to major renovations of existing buildings.

A general description of the current calculation method for new buildings is given on www.senternovem.nl/ept (only available in Dutch).

Part of the Energy Performance Standard for new buildings (and major renovations) is the calculation of a so-called Energy Performance Coefficient (EPC), since 1995.

Table 1 gives an overview of the many aspects that are covered within this EPC calculation for new buildings.

Minimum requirements for new buildings and major renovations

In the current national building regulations, proof that the requirements are met must be given before the completion of the building. Verification of this legal provision is the responsibility of the Local Authority where the building is located. The main requirement is to comply with a given maximum value for the Energy Performance Coefficient (EPC). In table 1 additional requirements are shown.

Requirements for existing buildings

Regarding Article 6, Existing buildings, the Dutch Building Law ensures that in case of a major renovation a minimum level of energy performance is met. For small renovations there are minimum requirements concerning ventilation and insulation.

Certification of buildings

The issuing of the Energy Performance Certificate is established in the 'Decree Energy performance of Buildings' (BEG). The BEG was approved on June 30th 2006 by the Dutch Council of Ministers and is currently for advice at the Council of State.

Also, the Certification for buildings with a total useful floor area over 1000 m² occupied by public authorities (Article 7.3), is allowed for in the BEG. However, the Netherlands has decided not to set or apply this requirement for the categories of buildings that are named in Article 4.3. The Dutch government will display the Certificate in all of its buildings that are accessible to the public. Schools and health-institutes will not have to comply with Article 7.3 of the Directive because these services are not the responsibility of the Dutch government.

In the 'Regulation on Energy Performance of Buildings' (REG) that is to be



issued in 2007, the above will be developed in further detail. In the REG the representative requirements of the Certificate will be outlined, as well as the required minimum information on the Certificate. The REG will be sent to the European Union for notification after the summer of 2006.

Table 1. Minimum requirements for new buildings and major renovations.

		residential		non-residential	
		minimum	EPC	minimum	EPC
Heating	U-Value (Roof, Walls, Ground)	$R_c = 2,5 \text{ m}^2\text{K/W}$	x	$R_c = 2,5 \text{ m}^2\text{K/W}$	x
	U-Value (Windows, Doors)	$4,2 \text{ W/m}^2\text{K}$	x	$4,2 \text{ W/m}^2\text{K}$	x
	Air tightness	$0,2 \text{ m/s}$	x		x
	Passive solar gains		x		x
	System efficiencies		x		x
Cooling	Area of transparent elements		x		x
	Overheating (time, Δtemp)		x		x
	Solar Gains		x		x
	Shading of windows		x		x
	System efficiencies		x		x
Ventilation	Air change	$0.9 \text{ dm}^3/\text{s per m}^2$ floor	x	function related	x
	IAQ requirements	Minimum requirements from the Building Decree	x	Minimum requirements from the Building Decree	x
	Heat recovery		x		x
Lighting	Installed power (W/m^2)		x		x
	Daylighting	m^2 of windows > 10% of floor area	x	m^2 of windows > 2,5 - 7 % of floor area Function related	x
Hot Water	Consumption		x		x
	Solar Gains		x		x
	System efficiencies		x		x
Other	Co-generation		x		x
	District Heating/cooling		x		x
	Renewables		x		x
	Other: Photo Voltaic cells		x		x
<p><i>In the column "EPC" the "X" mark means that this aspect is part of the calculation of the Energy Performance Coefficient (EPC).</i></p>					

Governmental website:

<http://www.vrom.nl/pagina.html?id=9401>

Other relevant websites (only in Dutch):

- > <http://epbd.nen.nl>
- > <http://www.senternovem.nl/epn/>
- > <http://www.senternovem.nl/epadesk/>

Inspection of boilers and air conditioning

In the Netherlands small boilers are usually checked every year for maintenance reasons. The number of boilers fired by non-renewable liquid or solid fuels is rapidly decreasing. In future the energy performance of the boiler will also be taken into account in the yearly inspection. For this a tool will be developed with which the energy performance of the boiler can easily be determined.

For large boilers the Netherlands complies with current legislation in the Environmental Law.

The system that the Netherlands will implement for small boilers will lead,

with regard to the inspection issues as described in the directive, to the intended result on the basis of both a voluntary scheme and legislation. Maintenance and, if needed, advice to replace the boiler will be encouraged by means of a national public information campaign which will start before the 2006 / 2007 heating season.

The approach to air conditioning systems (Article 9) will be developed similarly to the above described method for boilers (Article 8).

3 > Future planning

The Netherlands are striving for complete implementation of the EPBD by January 1st 2007. The formal obligation to comply with the Directive will be met as soon as there is a sufficient number of qualified and accredited inspectors for the Energy Certificate.

4 > Relevant information

More information can be found on
<http://www.vrom.nl/pagina.html?id=9401> (only in Dutch).



*This paper has been prepared in collaboration
with the EPBD Concerted Action (www.epbd-ca.org)*



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www.buildingsplatform.eu

Governmental websites:

- > www.bygningsenergi-direktivet.no
- > www.nve.no
- > www.be.no
- > www.enova.no

Other interesting information:

- > www.lavenergiloliger.no
- > http://www.sintef.no/content/page3___7100.aspx

Implementation of the EPBD in Norway: Status August 2006

As a part of the European Economic Area, the EPBD will be implemented also in Norway. New minimum requirements for new buildings are proposed for 2007, whereas the certification and inspection schemes are under preparation.

1 > Legal context

The Norwegian Storting (Parliament) formally decided in 2004 to implement the EPBD in Norway as a part of the EEA agreement with the EU. The national implementation and coordination is the responsibility of the Ministry of Local Government and Regional Development (articles 3, 4, 5, 6) and the Ministry of Petroleum and Energy (articles 7, 8, 9 and 10).

On 13.06.2006, the Government of Norway presented for public inquiry a proposal for new energy requirements for new buildings with a proposed date for implementation of 01.01.2007. Other parts of the transposition of the EPBD in national law are pending.

2 > Status of the implementation

Calculation procedures

The calculation procedures (art. 3) are part of the proposal for new energy requirements. The same procedure - net energy demand - is proposed for all building categories. The certification procedure will be based on the same principle, but may also take the delivered energy into account. Documents and reports are available in Norwegian at <http://www.be.no/beweb/regler/tekhoering06/>.

Requirements for new buildings

The requirements for new buildings will come into force for building permits requested after 1 February 2007. There will be a two year overlap with existing requirements.

The level of requirements is expressed as maximum net energy demand per m² of floor area for 13 building categories. An alternative way is to show that a set of 11 energy saving measures are planned, for instance maximum U-values for wall, roof, floor and windows, maximum area of transparent elements, air tightness, energy recovery of heat etc. If all the measures listed are in place, the energy requirements are fulfilled. The

limit values for each building category are decided from calculating the energy demand when performing the energy measures. The Norwegian proposal also requires the use of renewable energy, replacing electricity, oil and gas for heating purposes, if cost-efficient.

Control of the regulation is the responsibility of the Commune where the building is located.

Requirements for existing buildings

The requirements for new buildings will also apply for major renovations, affecting more than 50 % of the building area.

Certification of buildings

The requirements regarding the certification of buildings have not been presented by the Government.

Inspection of boilers and air conditioning

The requirements regarding the inspection of boilers and inspection of air conditioning systems have not been presented by the Government.

3 > Future planning

It is expected that a proposed scheme for certification of buildings and inspection of boilers and air conditioning systems will be presented by the Government in 2007. This could mean coming into force from 2008 for some building categories.

4 > Relevant information

Official texts, some information material and studies are available in Norwegian on the national website: www.bygningsenergidirektivet.no.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Poland: Status August 2006

This paper provides official information about Directive implementation process in Poland, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Poland is the responsibility of the Ministry of Construction

Council of Ministries will consider, in September 2006, new version of the project of the Act on buildings and apartments energy assessment system and inspection of installations within a scope of energy efficiency. Texts of the Act and related secondary legislation, together with public consultations can be seen on Ministry of Construction web site www.mtib.gov.pl

2 > Status of the implementation

Calculation procedures

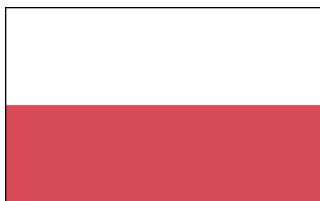
Project of fore mentioned Act and secondary legislation the Ordinance about the scope and form of energy certificate for building and apartments are introducing one assessment method for all types of buildings (new and old - modernized and nonmodernized but rented and sold).

A general description of the calculation method is given in secondary legislation and can be found in www.mtib.gov.pl-projekt.

Requirements for new buildings

The new requirements are the subject of being amended Ordinance of Ministry of Infrastructure from 12 of April 2002 on Technical requirements to be fulfilled by buildings and their localisation.

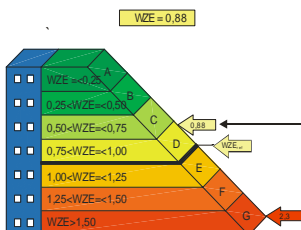
The requirements are on following type: on maximum permissible insulation level, infiltration coefficients for windows and doors, and fenestration areas. The type and level of requirements are same regardless of building functions and types (dwellings, office buildings schools, ...).



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Climate zone	I	II	III	IV	V
Computed temperature of ambient, °C	-16	-18	-20	-22	-24



The requirements are as follows:

- > Maximum U-value(W/m²degK); for apartment buildings walls 0,30-0,40, roofs 0,25, windows 1,7-1,9, other buildings - walls 0,40, roofs 0,25 windows 1,7-1,8
- > Infiltration coefficient no more than 0,3 m³/(mhdaPa^{2/3}) for windows and balcony doors.

The energy rank is not regulated it is a result of application of specific solutions fulfilling primary (listed above) requirements.

After the amendment of Ordinance about the scope and form of building design, every design that will be a basis for obtaining a building permit - filed by designer - must be accompanied by the table confirming compliance of fulfilment of energy requirements according to building technical regulations. Upon issuing building permit and permit for building operation the authorities in Poland are not verifying the design; they collect and check only the completeness of all documents and their compliance with spatial regulations. For the energy assessment and certificate the verification of building design compared with the construction objectives will be performed before the operational permit is issued.

Requirements for existing buildings

Requirements for existing, modernised or extended buildings will be same as for the new ones.

Certification of buildings

From 1st of January 2008 all new buildings should have an energy certificate. From 1st of January 2009 all existing buildings that are sold, rented or modernised should have an energy certificate.

Inspection of boilers and air conditioning

Inspection of boilers and AC units is covered by the fore mentioned project Act which is planned to be mandatory from 1st January 2009.

Relevant information can be found on following web sites:

Ministry of Construction:

www.mtib.gov.pl

Association of Energy

Auditors: www.zae.org.pl

Bank of National Economy (related to thermomodernisation): www.bgk.gov.pl

General information about the profits and effectiveness of thermomodernisation:

www.domprzyjazny.pl

3 > Future planning

It is expected that the legislative tasks of the Parliament introducing EPBD will end in November 2006 and execution order for the certificate and inspection will be adopted by the Government on an end of February 2007 and to become into force from 1st January 2008 for new buildings and from 1st January 2009 for the others.

4 > Future planning

A revision of the requirements is now ongoing; in 2008 the revision of U value for apartment buildings is planned. There is considered introduction of other types of requirements. A significant revision is planned after 5 years.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Portugal: Status and planning

Portugal has adopted a series of measures to implement the directive into the national law: on 4 April 2006, the Government has adopted three Decrees that, together, constitute the transposition of the EPBD into national law.

1 > Legal context

On 4 April 2006, the Official Journal published three Decrees regarding the transposition of the EPBD in national law:

- > Decree 78/2006 - It creates and defines the operational rules for the System for Energy and Indoor Air Quality Certification of Buildings (SCE) - articles 7 & 10;
- > Decree 79/2006 - It establishes the new revision of the Regulations for HVAC systems, including requirements for regular inspection of boilers and air-conditioners (RSECE) - articles 8 & 9;
- > Decree 80/2006 - It establishes the new revision of the Thermal Regulations for Buildings (RCCTE) - articles 3 to 6.

In Portugal, the implementation of the EPBD is the overall responsibility of the Ministry of the Economy, Directorate General for Geology and Energy, who coordinated the legal procedures and is responsible for the Certification system. The direct responsibility for the two regulations belongs to the Ministry of Public Works, who updated them under request from the Ministry of the Economy.

2 > Status of the implementation

Calculation procedures

The calculation procedures (art. 3) are included in the Building regulations for residential buildings and in the HVAC regulations for non-residential buildings. A general description of the calculation method is given in www.p3e-portugal.com.

A software tool shall be available from INETI (at a nominal cost) in September 2006.

Requirements for new buildings and major renovations

The new requirements are mandatory for building permits requested after 3 July 2006. The type and level of requirements are function of the type of building (dwellings, office buildings, schools, etc.) and cover:

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- > Maximum Heating and Cooling needs per m² of floor area (residential only);
- > Maximum U-value;
- > Minimum shading requirements for all windows;
- > Minimum requirements for thermal bridges;
- > Maximum consumption for production of hot water, including mandatory installation of solar water heaters (all buildings);
- > Maximum primary energy consumption per m² of floor area (all buildings);
- > Minimum efficiency and quality requirements for heating and cooling components (non-residential buildings).

The proof of compliance must be made when requesting the building permit and after completion of the building. Control of the regulation is the responsibility of the City where the building is located, based on a Declaration of Compliance with the building regulations issued by an accredited expert registered in the SCE (Building Certification System).

Requirements for existing non-residential buildings larger than 1000 m²

If the primary energy consumption of a building exceeds a certain level, fixed by type by the HVAC regulations RSECE, an energy plan must be prepared and all measures with payback shorter than 8 years must be implemented over three years.

These requirements shall start in 2008 or 2009, depending on the size of the building.

Certification of buildings

Certification is mandatory for all new buildings requesting a use permit after mid 2007. The exact date shall be decided by the Government by 4 December 2006. For public buildings, a certification is needed from 1 January 2008 or 2009, depending on size. Other buildings when rent or sold must have an energy performance certificate from 1 January 2009.

Inspection of boilers and air conditioning

Inspections of boilers and air-conditioners are covered by the HVAC regulations adopted by the Government on 4 April 2006 and it shall become mandatory from 1 January 2009. The procedures for inspection of boilers and air conditioning systems are still under discussion.

3 > Future planning

Training courses for accredited experts are being prepared for launch in October 2006. Pilot courses are being offered by ADENE, the national Energy Agency. Other Institutions shall then propose courses for accreditation to ADENE and operate in an open market environment.

4 > Relevant information

Detailed brochures as well as official texts are available on the national websites.

Promotional and information seminars have been organised on a national basis in 2005-2006.

Governmental websites:

- > www.dgge.pt
- > www.adene.pt
- > www.p3e-portugal.com

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www.buildingsplatform.org

Implementation of the EPBD in Romania: Status August 2006

This paper provides official information about Directive implementation process in Romania, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Romania is completely the responsibility of the Ministry of Transport and Public Works .

On 15 December 2005, the Parliament of Romania has adopted the Law 372/15.12.2005 regarding the transposition of the EPBD into national law. The execution orders are the responsibility of the Government and local authority.

2 > Status of the implementation

Calculation procedures

According with the law 372/15.12.2005, the calculation procedures (art. 3) will be adopted by the Government until the end of 2006. There are specific procedures for dwellings and for other buildings.

Requirements for new buildings

Starting with 1997 in Romania were adopted minimum requirements for all new buildings according with C 107/1-7 regulation. These requirements are mandatory for building permits requested after 1 January 1998.

The type and level of requirements are function of the type of building (dwellings and nonresidential buildings) and may cover :

- > Maximum U-value - for building element and whole building
- > Requirement on average insulation level - G coefficient [W/m²K]

The proof of compliance must be made after completion of the building. The control of the fulfilling of regulation is the responsibility of the National Institute of Building Inspection and The Local Authority where the building is located.

Requirements for existing buildings

According with C 107/97 in Romania were adopted minimum requirements for new building components when building renovation is done and for extensions to existing buildings. These requirements are the same as for new building.

These requirements were last strengthened on 1 January 1998.

Certification of buildings

The requirements regarding the certification of buildings will be adopted by the Government at the end of 2006.

Certification is obligatory for new buildings with a building permit after 1 January 2007. For public buildings, a certification is needed from 1 January 2007. Residential buildings when rent or sold must have an energy performance certificate from 1 January 2010.

Inspection of boilers and air conditioning

Inspection of boilers is covered by the law 372/15.12.2005 adopted by the Government on 2005 and is mandatory from 1 January 2007. The procedures for inspection of air conditioning systems are still under discussion.

3 > Future planning

It is expected that the execution order for the inspection of air conditioning systems will be adopted by the Government before the end of 2007 and to become into force from 2008.

A revision of the requirements is foreseen before the end of 2009.

4 > Relevant information

Detailed brochures as well as official texts and tools are available on the national websites:

- > www.gov.ro
- > www.mt.ro
- > www.norme.ro

In order to stimulate the certification of buildings, subsidies are also available and widely described on the specific www.mt.ro website.

This paper has been prepared in collaboration with the EPBD Concerted Action project (www.epbd-ca.org)



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Implementation of the EPBD in Slovak Republic: Status January 2007



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This paper provides official information about Directive implementation process in Slovakia, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in the Slovak Republic is in the responsibility of the Ministry of Construction and Regional Development (articles 3, 4, 5, 6, 7) and the Ministry of Economy (articles 8 and 9).

On 8-th of November 2005, the National Council of the Slovak Republic has approved the Act N° 555/2005 (<http://www.zbierka.sk/ciastka.asp?ro=2005-&cc=225>) regarding the transposition of the EPBD in national law. The execution order for this Act was published as an Order of the Ministry of Construction and Regional Development of the Slovak Republic N° 625/2006 Coll. in december 2006 (<http://www.zbierka.sk/ciastka.asp?ro=2006&cc=240>).

2 > Status of the implementation

Calculation procedures

The final calculation procedures (art. 3) should be adopted after the preparation of the EN standards. The procedures are not definitive set, yet. There will be not different procedures for dwellings and for other buildings.

Requirements for new and existing buildings

The Ministry of Construction and Regional Development is responsible for preparation of the Regulation (after suggestion of other ministries and institutions prepared for approval by the Government). The Regulation should come into force from 1 January 2007. The Ministry adopted minimum requirements for all new buildings and existing buildings (www.build.gov.sk). The requirements come into force for building permits requested after 1 January 2008.

The type and level of requirements are function of the type of building (family houses, apartment houses, office buildings, schools, hospitals, hotels and restaurants, sports facilities, wholesale and retail trade services buildings) and may cover:

- > Maximum U-value required separately for existing and new building after the national standard STN 73 0540-2: 2002;

Type of structure	U_N W/(m ² .K)	
	renovated buildings maximum value	new buildings recommended value
external walls and roofs with slope > 45°	0,46	0,32
roofs with slope ≤ 45°	0,30	0,20
ceiling upon non-heated area	0,30	0,20
ceiling under non-heated area	0,35	0,25
windows	2,0	1,7
doors (entrance)	4,3	3,0

- > Requirement on average insulation level is not set, but requirement for the heat use for heating depending on building form factor is following:

Building form factor A/V_b [1/m]	Specific heat use for heating E_N			
	renovated buildings		new buildings	
	$E_{1,N}$ kWh/(m ³ .rok)	$E_{2,N}$ kWh/(m ² .rok)	$E_{1,N}$ kWh/(m ³ .rok)	$E_{2,N}$ kWh/(m ² .rok)
≤ 0,3	25,0	70,0	17,9	50,0
0,4	28,1	78,6	20,4	57,1
0,5	31,1	87,1	23,0	64,3
0,6	34,2	95,7	25,5	71,4
0,7	37,5	104,3	28,1	78,6
0,8	40,3	112,9	30,6	85,7
0,9	43,4	121,4	33,2	92,9
≥ 1,0	46,5	130,0	35,7	100,0

- > Maximum total delivered energy per m² of floor area (external sizes of building) - Scale of Energy Classes - Global Indicator.

Building Category	Energy classes						
	A	B	C	D	E	F	G
Family houses	< 48	48-95	96-138	139-191	192-239	240-286	> 286
Apartment houses	< 38	38-76	77-114	115-152	153-190	191-228	> 228
Office buildings	< 57	57-109	110-156	157-204	205-255	256-305	> 305
Schools	< 43	43-78	79-114	115-152	153-189	190-228	> 228
Hospitals	< 99	99-188	189-276	277-364	365-454	455-546	> 546
Hotels and restaurants	< 93	93-177	178-260	261-343	344-429	430-514	> 514
Sports facilities	< 48	48-91	92-128	129-172	173-214	215-258	> 258
Wholesale and retail trade services buildings	< 61	61-108	109-161	162-212	213-263	264-314	> 314

Certification of buildings

The requirements regarding the certification of buildings are given in the proposed Regulation. Certification is obligatory for new buildings and major renovated buildings with a building permit as well as for public buildings and rent or sold buildings after 1 January 2008.

Inspection of boilers and air conditioning

On 13-th of December 2006, the National Council of the Slovak Republic has approved the Act N° 17/2007 Coll. on regular inspections of boilers, heating systems and air-conditioning systems (<http://www.zbierka.sk/-ciastka.asp?ro=2007&cc=11>) regarding the transposition of the EPBD articles 8 and 9 in national law. This law was published in January 2007 and fully become into force from 1-st January, 2008. The three execution orders are in the responsibility of the Government (Ministry of Economy of the Slovak Republic) and are in preparation phase.

3 > Future planning

Nothing concrete is being planned.

4 > Relevant information

Official texts are available on the national websites.
Slovak Republic has not a specific website available at present time.

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the EPBD Concerted Action project (www.epbd-ca.org)



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Boris Selan
Agency for Energy
Efficiency
Slovenia



www.buildingsplatform.eu

Relevant information

> www.mop.gov.si

Implementation of the EPBD in Slovenia: Status August 2006

This paper provides official information about Directive implementation process in Slovenia, for details please visit the referenced web sites or contact the responsible institutions.

1 >Legal context

The implementation of the EPBD in Slovenia is the responsibility of the Ministry of the Environment and Spatial Planning (all articles).

In Slovenia EPBD will be transposed with *Building Construction Act* (art. 3, 4, 5.1, 6), *Energy Act* and its amendment (art. 5.2, 7, 9, 10) and *Environmental Protection Act* (art. 8, 10). Act amending the Energy Act is now in the parliamentary procedure and it is expected to be promulgated till the end of 2006. Secondary legislation (regulations) based on those acts is also being prepared.

2 >Status of the implementation

Calculation procedures

Methodology of calculation of integrated energy performance of buildings is under development and it will be integral part of *Regulation on efficient use of energy in buildings*. The existing approach for determination of energy demand for heating, which was part of regulation of 2002, will be extended with the calculation of energy demand for hot water preparation, air conditioning, ventilation and lighting for all types of building (except for those buildings that are excluded also from the directive itself). CEN standards for support of implementation of EPBD will be applied as much as possible (pragmatic approach). Due to the considerable variety in local climate, additional effort will be put into the preparation of climatic data. It is planned that these regulations will be promulgated in January 2007.

Requirements for new buildings

Definition of minimum requirements will be a part of *Regulation on efficient use of energy in buildings*. The minimum requirements will be expressed in terms of annual heat demand for space heating and cooling (useful energy) and in terms of annual energy demand for buildings operation (final energy).

Additional requirements are proposed on the level of the element (U_{max}) and on the system level (heat and cooling demand) in order to meet thermal comfort criteria and to take into account the difference in particular element's lifetime. CO₂ emissions as well as primary energy will

be demonstrated as an additional indicator, not as a specific requirement. It is planned that requirements for heat demand will be approximately 30% stricter than those of 2002.

Fulfilment of requirements will have to be demonstrated in designs, both for the building permit, and when applying for the permit to use the building (when the building is built).

For new buildings with useful floor area over 1000 m² a feasibility study according to art. 5.2 of the directive will have to be done as a part of the documentation for a building permit. Regulations on feasibility study of alternative systems will be prepared based on Energy Act. It is planned that these regulations will be promulgated at the end of 2007.

Requirements for existing buildings

Regulation on efficient use of energy in buildings will also include requirements which have to be satisfied for existing buildings. In case of reconstruction works the building permit is obligatory in Slovenia and thus also the compliance with regulations is compulsory for that part which is being reconstructed. Requirements will also have to be satisfied in case of major renovation of the building, where definition from the directive will be applied. Only that part of the building which is being renovated will have to satisfy requirements. The same requirements as for new buildings will apply.

Certification of buildings

Rules for energy certification will be based on *Energy Act*. It is planned that issuing certificates for new buildings and public buildings will start in the beginning of 2008 and for other buildings at the beginning of 2009.

Energy certificates for new buildings will be based on calculated values (asset rating) using the calculation methodology defined in *Regulation on efficient use of energy in buildings*, described above. Also for existing buildings the energy performance certificate will be based on calculated values with some simplifications in input data. The certificates based on operational ranking are considered as an optional solution for public buildings with obligatory display of energy performance.

The certificates are planned to be issued by chartered engineers, after an additional training, exam and approval by the state.

Inspection of boilers and air conditioning

Regular inspection of boilers is already in place in Slovenia in the framework of the *Environmental Protection Act*. The regulation with additional tasks and protocols for regular inspection of boilers requested under EPBD is planned to be promulgated at the end of 2007.

It is considered that instead of one-off inspection of heating installation the option b) will be applied by a provision of advice and financial incentives for replacement of boilers and implementation of other energy efficiency measures (partly already existing).

Regular inspection of air conditioning systems is planned to be established at the beginning of 2008. *Inspection* of AC systems will be covered by regulations based on the *Energy Act*. The system will be developed taking into account the existing regular check-up of ventilation systems (in place since 2002).

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Implementation of the EPBD in Sweden: Status January 2007

This paper provides official information about Directive implementation process in Sweden, for details please visit the referenced web sites or contact the responsible institutions.

1 > Legal context

The implementation of the EPBD in Sweden is the responsibility of the Ministry of Sustainable Development and the National Board of Housing Building and Planning (Boverket).

On 21 June 2006, the Parliament of Sweden adopted the Law regarding the transposition of the EPBD in national law.

2 > Status of the implementation

Energy performance

How to present the energy performance is regulated by the National Board of Housing, Building and Planning (Boverket). Operational rating will be used. There is in Sweden no general calculation method and software tool for energy calculations.

Requirements for new buildings

In 1942, the Government of Sweden adopted minimum requirements for all new buildings. New requirements were adopted 1960, 1967, 1975, 1980, 1988 and 2006. The newest requirements came into force for building permits requested after 1 July 2006 (www.boverket.se/shopping/-ShowItem.aspx?id=2331) There are also proposals for new requirements from 1 July 2007.

The type and level of requirements are functions of the types of buildings (dwellings, non-dwellings) and cover: Maximum energy consumption per m² of floor area.

The proof of compliance must be made within 24 months after completion of the building. Control of the regulation is the responsibility of the Community where the building is located.

Requirements for existing buildings

The minimum requirements for new building components when building renovation is done and for extensions to existing buildings can to some part be seen in the same requirements as above for new buildings.

Certification of buildings

The Government has not yet adopted the ordinance regarding the certification of buildings.

Certification is obligatory for new buildings with a building permit issued after 1 January 2009. For public buildings and multi-family houses, a certification can be done after 1 Oct 2006 and is needed before 31 Dec 2008. Other buildings, when rented or sold must have an energy performance certificate from 1 January 2009.

Information about boilers and inspection of air conditioning

Information about boilers will be done by STEM. The procedures for inspection of air conditioning systems are still under discussion. It can be used as described in prEN standard or in the Swedish mandatory ventilation control or in other ways.

3 > Future planning

When the government has adopted the ordinance it is expected that: the regulations for energy performance declaration will be adopted by the National Board of Housing, Building and Planning (Boverket) and will come into force at the end of 2006.

The regulations for certification of the expert will be adopted by the National Board of Housing, Building and Planning (Boverket) and will come into force at the end of 2006

The regulations for the inspection of air conditioning systems will be adopted by the National Board of Housing, Building and Planning (Boverket) before the end of 2007 and will come into force from 1 Jan 2009.

A further revision of the regulations for new buildings is foreseen in 2008.

4 > Relevant information

Official texts and tools are and will be available on www.rixlex.se or www.boverket.se and www.stem.se. In order to stimulate the lower energy use in buildings, subsidies are also available for some measures and described on www.boverket.se.

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