Towards an Energy Efficient European Building Stock

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The buildings we live and work in have an impact not only on our lives, and our sense of well-being, but also on the world we live in.
Dear Member,

Energy saving measures and the reduction of CO₂ emissions are at the top of the global political agenda. With buildings accounting for more than 40% of all CO₂ emissions, RICS believes the EU has an important role to play in ensuring energy efficiency in the built environment. RICS therefore fully supports the aim of the EU Energy Performance of Buildings Directive (EPBD) to improve the overall energy performance in existing buildings. RICS not only is an associate member of the EPBD Buildings Platform and a partner of the EU Sustainable Energy Campaign but also actively participating in the stakeholder discussions regarding the revision of the EPBD which is due to be published in November 2008.

EU Member States had to transpose the current directive into national law by 4 January 2006. At the time of the 2006 deadline, only two countries had more or less implemented the legislation. To date, there are still a number of EU countries that have failed to even present the European Commission with a plan outlining the methodology they are planning to adopt. One country has even been taken to the European Court of Justice for failing to notify the Commission of the measures it intends to take. In general, countries that had already had energy savings measures in place, such as Denmark, Germany or the Netherlands found it much easier to integrate these measures into the new EPBD requirements.

Against the background of an increasing number of chartered surveyors and member firms getting involved with the sustainability aspect of constructing, retrofitting and operating buildings across Europe, the RICS EU Public Affairs team in Brussels has updated the intensive research into the actual status of implementation of the EPBD in the 27 Member States it carried out in 2007. This overview not only provides you with facts and figures but also looks at where and why there are gaps in individual Member States. It also highlights the skill and qualification requirements to practise as energy inspectors in the EU which greatly differ from one country to the other.

Almost a year on from when we first looked into the practical workings of the Directive, the general trend is looking much more promising. In a significant number of countries, certification of buildings is up and running and an increasing number of inspectors is operating in the market. However, some of the new Member States are still facing substantial problems largely due to their past which has left them with a legacy of a highly inefficient prefabricated building stock. Most of these countries are making use of the additional three year period and are not going to fully implement before 1 January 2009. On the whole, the inspection of boilers and Air Conditioning systems in particular seems to have been one area where most Member States needed more time to fully meet the requirements of the EPBD.

For RICS EU Public Affairs energy efficiency in buildings is a top priority. If you have any comments or questions regarding the practicalities of the EPBD or if you would like further information, we would like to hear from you.

Obviously this report can only reflect the situation at the time of publishing. While every effort has been made to ensure accuracy of the content, no warranty is made with regard to that content. RICS will have no responsibility for any errors or omissions and cannot accept any liability for any loss or damage suffered by any person as a result of the content.

Kind regards,

Ursula Hartenberger
Head of Public Affairs Europe
uhartenberger@rics.org

September 2008
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In Austria, the implementation of the EPBD is mainly in the responsibility of the Ministry of Economy and Labour. However, additional requirements may be set by the Austrian federal provinces (‘Bundesländer’). On 3 August 2006 the ‘Energy Certification Providing Act’ (‘Energieausweisvorlagegesetz – EAVG’) was adopted. (www.bmj.gv.at)

Building regulations have been set in the ‘OIB-Guideline’ (www.oib.or.at) and additional requirements may have been added at regional level by the ‘Bundesländer’. They came into force on 1 January 2008 for new buildings and will come into force for existing buildings on 1 January 2009.

With this Austria fully complies with the EPBD.

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#### Austria

Boilers:

In Austria, the regular inspection of heating systems has been in use for many years. The frequency of inspection depends on the energy source and the size of the heating system. The 15-year-one-off inspection will be introduced with the building certificate for which a new methodology has been developed.

#### Air Conditioning:

Cooling devices so far have not been inspected, so new requirements as well as calculation methods had to be developed. These were published in the ‘OIB-Guideline’ in October 2007 (OENORM H 5058) and came into force on 1 January 2008.

### Additional Sources:

- www.umweltberatung.at
- www.oib.or.at
- www.energyagency.at
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#### Brussels Capital Region

**The Brussels Capital Region** will implement the EPBD partly in July 2008 (articles 3 to 7). Implementation is based on the ‘Ordonnance relative à la performance énergetique et au climat intérieur des bâtiments’ of June 2007.

The regional Ministry of Energy is responsible for articles 3 to 7.

The regional Ministry of Environment is responsible for articles 8 & 9.

The Government of the Brussels Capital Region has entrusted the IBGE/BIM (Brussels Environment Agency) www.ibgebim.be and the ABEA (Brussels Energy Agency) with the execution of the implementation.

Full implementation of the EPBD is foreseen by 2009.

#### Flemish Region

**Flemish Region**

The calculation procedure of the energy performance of new residential buildings, offices and schools is part of the execution order.

The calculation differs according to the function of the building Software has been developed to calculate and check the compliance with the energy efficiency and indoor climate requirements (logiciel PAE – ‘Procedure d’avis énergetique’).

**Flemish Region**

Energy performance requirements for new buildings cover thermal insulation, the overall performance level and indoor climate.

There are specific sets of requirements for each construction type (new building, refurbishment of a small existing building, extension of an existing building).

**Flemish Region**

Certification for new buildings and existing buildings undergoing renovation has become mandatory as of 30 June 2008.

For public buildings and other existing buildings when rented or sold, the certificate will become mandatory as of 2009. The requirements will be included in an execution order.

Certificates will be issued and registered by the IBGE.

#### Flanders differentiates between two different types of assessors:

- **Type A** (inspector) needs to have followed training courses including:
  - An introduction to building physics
  - An introduction to technical installations such as heating
Flemish Region

The Flemish Region implemented the EPBD on 7 May 2004.

The Flemish Energy Agency (VEA) is responsible for Articles 3 to 7.

The Department of Environment, Nature and Energy is responsible for articles 8 & 9.

An execution order of the Flemish government of 11 March 2005 lays down the actual energy performance requirements and the calculation procedure.

Walloon Region

In Belgium, the implementation of the EPBD is a regional responsibility.

The Walloon Region implemented the EPBD on 19 April 2007.

The regional Ministry of Energy is responsible for articles 3 to 7.

This concerns an alternative technical approval ATG-E for specific systems or technologies. The list of innovative systems or technologies can be found on: www.energiesparen.be/energieprestatie

Software has been developed to calculate and check the compliance with the energy efficiency and indoor climate requirements. Use of this software is mandatory.

Walloon Region

The calculation procedures have been included in an execution order in October 2007.

A software has been developed to calculate and check compliance with the energy efficiency and indoor climate requirements of existing buildings.

major renovation of large existing buildings and depending on the use of the building (residential, offices or schools, industry, other non-residential).

New residential buildings, offices and schools have the strictest requirements.

Walloon Region

The Walloon region has had a thermal regulation for new or renovated buildings, offices and schools for many years.

For new and for existing buildings, requirements exist for the building envelope and ventilation.

Since 1984, a calculation method of the energy needs for heating takes into account solar gains and internal gains in new buildings.

Minimum requirements for new and existing buildings have been set in an execution order in October 2007.

Certificates for existing buildings that are being sold or rented have been mandatory for residential buildings since 11 January 2008 and will be introduced in 2009 for non-residential buildings.

An ‘EPB-Declaration’ must be sent electronically to the Flemish Energy Agency (VEA) database. 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, the building constructor or the assessor.

Walloon Region

Since January 2004, a voluntary action for residential buildings called ‘Build with Energy’ aims to provide the building sector with future statutory requirements (building envelope, ventilation, energy consumption, etc).

A document is issued describing measures that have been taken to fulfil requirements. This can be seen as a first step towards certification.

systems, sanitary hot water, ventilation, cooling, solar heaters and photovoltaics

• The inspection protocol
• The actual inspection document
• The certification software
• The database for certificates
There is a theoretical and practical exam.

Type B (auditor) needs to have followed training courses including:

• The legal framework with regard to the difference between certificate and audit
• The audit document
• The audit software (only used for single family buildings)
• A practical case study
A candidate must at least achieve 60% to pass.

Control of the regulation is the responsibility of regional and local administration.
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<td>The regional Ministry of Environment is responsible for articles 8 &amp; 9. The decree has integrated the CWATUP – the regulation regarding rural and city planning which is now CWATUPE.</td>
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<td>For further information see <a href="http://energie.wallonie.be">http://energie.wallonie.be</a></td>
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<td>Since September 2006, architects and engineers have been informed about certification and trained to complete audits. The training to be an accredited assessor takes five days. Auditors have to be accredited by the Walloon region.</td>
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<td>The requirements regarding the certification of buildings will be included in an execution order. Certification will become mandatory for new buildings as soon as the minimum requirements are in force. For public buildings and other existing buildings when rented or sold, the certificate will become mandatory as of 2009.</td>
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In Bulgaria, the implementation of the EPBD is the responsibility of the Ministry of Regional Development and Public Works (Articles 3, 4, 5 and 6) and the Ministry of Energy and Economy as well as the Energy Efficiency Agency (Articles 7, 8, 9 and 10).

On 19 February 2004, the ‘Energy Efficiency Act’ (Decree 54/2004) was adopted by the National Assembly of Bulgaria. The law amending the ‘Energy Efficiency Act’ was adopted in July 2007 and implemented the energy certificate (label) as part of the technical passport of the building.

The calculation procedures have been adopted with the ‘Ordinance on Energy Conservation and Heat Retention of Buildings’. Both have been in force since 1 March 2005. The method is based on the following European standards: EN 832 EN 13 370 and EN 13 798.

A general description of the calculation method can be found on www.mrrb.government.bg

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### Bulgaria

For **new buildings** requirements have been in force for building permits requested after 1 March 2005. These also apply to **existing building renovations, extensions and repairs**.

Control of the regulation is the responsibility of the consultant. A building permit is issued only after the energy performance evaluation by either the consultant or by one of the municipality expert councils for small one family houses, low level constructions etc.

The requirements regarding the certification of buildings have been adopted with the Ordinance for ‘Energy Efficiency Certification of Buildings’ in force since 1 January 2005.

The energy certificate of a new construction is issued by the construction consultant before construction is started and includes the energy performance parameters corresponding to the normative and project requirements for energy efficiency of the completed construction.

The energy certificate of an existing building is issued after a detailed energy efficiency audit is carried out by physical or legal entities registered in the Energy Efficiency Agency (EEA) register.

The energy certificate is issued for a whole building only, not for a separate apartment.

For **public buildings** exceeding 1000m² certification is mandatory.

The execution order for the inspection of boilers and A/C systems is scheduled to come into force as of 1 July 2008.

**Boilers:**

The inspection of boilers is carried out by the General Directorate ‘Inspectorate for State Technical Surveillance’ which is part of the State Agency for Metrology and Technical Surveillance according to the ‘Law on Technical Products’.

The inspection of new boilers is covered by the execution order adopted by the government on 22 March 2005 and has been mandatory since 1 April 2005.

The administration of the inspection is carried out by the General Directorate ‘Inspectorate for State Technical Surveillance’, a section of the State Agency for Metrology and Technical Surveillance.

The EEA is in charge of a public register for entities carrying out energy efficiency audits and the certification of buildings. Entities are accredited by the Agency against a fee according to regulation 16-1238 in force since 28 December 2007.

The main requirements towards these entities are:

- A minimum set of technical means for measuring.
- Available staff with at least 3 specialists in the fields of architecture, civil engineering, thermotechnics, electrical engineering
- To have successfully passed the exam on audits and/or certification of buildings
- 3-6 years experience in the field
- A bachelor’s or masters degree depending on the qualification
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**Air Conditioning:**
The procedures for inspection of A/C systems are still under discussion.

The examination material and the evaluation are standard for the whole country and are prepared by accredited high schools in coordination with the executive director of the EEA and are approved by the Ministry of Economy and Energy.

At the end of the training course the assessors need to sit a two-part final exam, an individual test and present an individual project. The final exam is conducted by an examination commission which consists of professors from the Technical University and a representative of the EEA.
In Cyprus, the implementation of the EPBD is the responsibility of the Ministry of Commerce, Industry and Tourism (MCIT). The transposition of the provisions of the Directive was achieved through the legislations titled ‘The streets and buildings law’ (N101/2006), ‘The law for the regulation of the energy performance of buildings of 2006’ (N142/2006) and ‘The streets and buildings regulation’ (K429/2006).

Two ministerial orders regarding the methodology for the calculation and the minimum requirements are expected to be announced, putting into force the above legislation. The government aims at full implementation by 4 of January 2009.

The MCIT, with external technical assistance, has developed a simple methodology for the calculation of the energy performance of new residential buildings, based on the relevant CEN-standards. Currently, the methodology is being tested and will soon be made available to all interested bodies. A general description of the calculation methodology and information on software tools can be found on www.mcit.gov.cy

Regarding new non-residential buildings, the intention is, at least for the initial stage, to use the same simple methodology as that adopted for new residential buildings, adequately modified in order to include the evaluation of lighting systems.

Cyprus does not have building codes or regulations concerning the energy performance of buildings or thermal insulation. This is the first time such a legislation has been put in force. A ministerial ordinance regarding thermal insulation of buildings is expected. The enactment of the legislation concerning minimum energy requirements for all new buildings was foreseen for July 2007, with a possible start of certification of new residential buildings at the beginning of 2008. Despite intensive research it was not possible to verify whether this has actually been the case.

Cyprus plans to extend implementation until 1 January 2009.

Inspection of boilers and A/C is covered by the ‘Law for the regulation of the energy performance of buildings’ of 2006 (L142(I)/2006) and will become mandatory over the next two years.

The exact requirements regarding the independent experts allowed to issue the certificates have not been finalised.
### Legal Context

In the Czech Republic, the Ministry of Industry and Trade is responsible for implementation. The EPBD was transposed into Czech Legislation on 26 March 2006 by introducing amendments to the ‘Act of Energy Management’ Articles 6 and 6a which came into force on 1 July 2006.

### Article 3

**Adoption of a Methodology**

The calculation methodology is based on the CEN Standards and the applicable Czech Technical Standards.

### Articles 4–6

**Setting of Energy Performance Requirements**

Energy performance of **new buildings** will be benchmarked with an equivalent existing reference building and will take into account the maximum U-values, the properties and the operation of the building’s technical equipment and lighting. Proof of compliance will be needed to obtain planning permission for construction of a **new building** or **renovation of an existing building**. The requirements are the same for both types of buildings.

### Article 7

**Certification of Energy Performance of Buildings**

Certification will become mandatory for **new buildings and renovated existing buildings** (with a floor space exceeding 1000m²) as of 1 January 2009.

### Articles 8 & 9

**Boiler and A/C Inspections**

- **Boilers:** Inspections have been mandatory since 1 January 2007.
- **Air Conditioning:** Inspection will become mandatory as of 1 January 2009.

### Article 10

**Training of Independent Experts**

Inspections are carried out by authorised specialists according to Act. No. 86/2002.

#### Requirements:

- Six years relevant experience
- An additional exam which consists of an theoretical part and an oral exam before a committee consisting of six members of various ministries

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**Additional Sources:**

www.buildingsplatform.eu
In Denmark, implementation is the responsibility of the Danish Energy Authority (Articles 3, 5, 7, 8 and 9) and the Danish National Agency of Enterprise and Construction (Articles 3, 4, 5 and 6).

The EPBD was implemented in 2006 by a further tightening of existing strict energy requirements in the building regulations with the introduction of new labelling and inspection schemes.

The January 2006 requirements imposed stricter criteria in accordance with Danish action plans for an increased 25% energy saving in new buildings compared to pre-January 2006 requirements.

**New buildings** are covered by addendum 12 to BR95 and addendum 9BR-S 98. An energy performance target is required for all types of buildings heated to at least 15 degrees with exception of buildings used for commercial production and energy production. The target is based on the supplied energy needed for operating the building. There are separate targets for residential (excluding lighting) and non-residential (including lighting). An extra allowance is given to non-residential buildings with high ventilation requirements and long operating hours or substantial hot water demand.

Certification is covered by Decree 1294 on the 'Energy labelling of Buildings' of 13 December 2005.

**Buildings need a certificate ('label'):**
- When constructed
- When sold or rented
- Regularly (every 5 years) when exceeding 1000m²
- Regularly (every 5 years) for all public buildings (all measures identified by the certificate, having a pay-back period of less than 5 years, have to be implemented within 5 years)

**Existing buildings** when rented or sold need to have a certificate which is no more than 5 years old. This also applies to the sale or renting out of individual flats in blocks of flats. Certification of apartment blocks is done on the whole building with an additional individual certificate for each unit.

There are 14 different certification categories from A1 to G2.

Legal basis is Decree 1296 of 13 December 2005 on the 'Inspection of Boilers and Heating Systems' as well as Decree 217 of 20 March 2006.

**Boilers:**
The inspection of boilers and heating systems were implemented on 1 September 2006.

**Air Conditioning:**
The inspection of A/C systems has become mandatory since 1 January 2008.

There are 3 types of energy inspectors:
- For single-family residential buildings
- For multi-family residential buildings, commercial and public buildings
- In-house inspectors for commercial and public buildings

**Requirements:**
- At least 5 years relevant experience
- A successful completion of a special training
- Compulsory participation in an annual ‘refresher’ course
- A mandatory professional indemnity insurance (needs to be kept in force for at least 5 years after ceasing activity as inspector)
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For all types of buildings, the requirements also include two classes of very low energy buildings (Class 2 with an energy demand of 75% or 4.0l/m², Class 1 with a demand of 50% or 2.5 l/m²).

**Existing buildings** are covered by addendum 12 to BR95 and addendum 9BR-S98. BR95 stipulates the application of the 25% renovation rule in multi-family houses and non-residential buildings whatever the floor area.

Cost efficient measures are defined as measures that by calculation bring at least 33% overhead over a standard life time.

There is a requirement to perform cost efficient energy saving measures to roof renovations, renovation of the thermal envelope on external walls, renovation or replacement of windows, installation of a new boiler or change of heat supply regardless of the size of the building.

**New buildings** must at least achieve B1 to get a permit for use.

Grade A1 and A2 are for low energy buildings (Class 1 and Class 2).

The day-to-day running of the scheme is done by the FEM secretariat which is also where all certificates are lodged. The secretariat also carries out a continuous evaluation of the scheme, the quality of the certificates and the inspectors. The specific rules for inspectors can be found in the ‘Handbook for Energy Consultants’ available on: www.femsek.dk. It includes data for typical constructions and installations to facilitate benchmarking and uniformity of certificates.

The certification fee structure provides the income to cover the operating costs of the FEM secretariat, the technical auditor and training of the inspectors.
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The maximum fee for a detached single-family residential building is set at 500€. The market for energy certification of larger buildings is not regulated by the Danish Energy Authority.
### Estonia

- **Legal Context:**
  - In Estonia, implementation is the responsibility of the Ministry of Economic Affairs and Communications.
  - The draft act for implementation was approved by Parliament on 27 September 2006.

- **Article 3:**
  - Adoption of a Methodology
  - No further information was available.

- **Articles 4–6:**
  - Setting of Energy Performance Requirements
  - The requirements for **new buildings** come into force for building permits requested after 1 January 2008 and proof of compliance must be made 2 years after completion of the building.
  - For renovations and extensions to **existing buildings**, Estonia will adopt separate minimum requirements which are going to be different to those for new buildings. These were supposed to be in force before 1 January 2008.

- **Article 7:**
  - Certification of Energy Performance of Buildings
  - Certification of **new buildings** will become mandatory with building permits requested after 1 January 2009. All other buildings, when rented or sold must have an energy performance certificate as of 1 January 2009.

- **Articles 8 & 9:**
  - Boiler and A/C Inspections
  - **Boilers:**
    - Inspection will be mandatory as of 1 January 2009.
  - **Air Conditioning:**
    - Still under discussion.

- **Article 10:**
  - Training of Independent Experts
  - Certification will be carried out by experts who have attended training courses for energy certifiers and fulfil other relevant professional requirements.

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**Additional Sources:**
- www.buildingsplatform.eu | www.mkm.ee

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In Finland, the implementation of the EPBD is the responsibility of the Ministry of the Environment in cooperation with the Ministry of Trade and Industry.


Since 1985, Finland’s National Building Code has included guideline D5 ‘Calculation of power and energy needs for heating of buildings’ which can be used for the calculation of all building types. The calculation method has been refined because of the implementation of the EPBD. The new calculation method has been developed by the Ministry of the Environment and was published in the National Building Code in 2007. It applies to all types of buildings.

The Act on Building Energy Certification was approved by Parliament on 13 April 2007. According to this act, certification will become mandatory for new buildings with a building permit in 2008. Other buildings when rented or sold must have a certificate as of 1 January 2009. Certificates will be optional for existing detached houses and residential properties consisting of no more than six homes.

Boilers
A voluntary approach instead of mandatory boiler inspection has been approved by Parliament. This will require actions at national level, such as the dissemination of monthly magazines to all owners of oil or gas powered heating installations, the provision of information and advice at fairs and via the internet and the creation of financial incentives.

Air Conditioning
According to the new ‘Act on Inspection of A/C Systems’, inspections will be compulsory for cooling equipment with a nominal cooling efficiency of at least 12 kW, and will only be needed where cooling systems are based on the use of compressors. Such equipment should be inspected at least every ten years. The new act came into force on 1 January 2008.

For new buildings, the principle designer will be qualified to issue the certificate.

For existing buildings, there are three approaches:
- Within ‘housing companies’, the certificate will be presented together with the ‘Property Management Certificate’. The property manager is qualified to issue the certificate.
- Within the existing ‘Energy Audit Program’ (EPA), energy audits are carried out for all buildings, except for residential and government buildings. The energy auditor is already qualified and does not need further accreditation.
- Separate certificates can be issued by legally empowered experts with appropriate professional qualifications with a degree in the building/energy sector and an additional exam.

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Additional Sources: www.finlex.fi | www.buildingsplatform.eu
### Legal Context

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In France, the Ministère du Logement et de la Ville is responsible for the implementation of the EPBD. The decree of 19 March 2007 (nr. 20007-363) deals with the implementation of Articles 4, 6, 7 (part 3) as well enforcement of aspects of Article 5. Legislative texts are available on: www.legifrance.gouv.fr

A framework has existed since 2000 based on RT2000. It was revised in 2005 and was approved on 24 July 2006. The calculation tool 3CL-DPE(v15) is based on RT2005 and includes climatic conditions, position and orientation of buildings, indoor climate conditions, active solar systems and natural lighting.

For new buildings, the methodology is being revised every 5 years and with every revision, buildings are required to consume 15% less energy. Energy consumption is either calculated according to one of the declared assessment methods or with an operational rating, based on invoices (consumption noted over the last 3 years).

The requirements for new buildings will apply to all building permits requested after 31 December 2007. The type and level of requirements are governed by the function of the type of building (residential, office buildings, schools etc.).

In existing buildings, the new building components will need to fulfil minimum requirements. As of 2008, buildings over 1000m², which undergo major renovation, will have to meet global performance requirements.

The certificate, which will be issued after completion of the building, will constitute proof of compliance required upon completion.

The implementation of the certification activity has been transposed into French legislation through the Building Code (amended by laws in 2005 and an ordinance in 2006).

**Certification is mandatory:**
- As of 1 November 2006, when residential or non-residential buildings are sold (overseas areas excluded)
- As of 1 July 2007, when buildings are rented
- As of 1 July 2007 for new buildings with a building permit required

Public buildings over 1000m² will need to display a certificate as of January 2008.

The cost of a certificate is between 150–250€, depending on the type of building. It is valid for 10 years.

Measures to establish a regular inspection of boilers and A/C systems are still under discussion.

The requirements for experts are specified under Standard 17024. Experts need appropriate knowledge and competence, fluency in French, but no particular degree or experience is necessary.

They need to pass an exam organised by a company or organisation accredited by COFRAC. (Comité Francais d'Accréditation – www.cofrac.fr).

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### Additional Sources:
In Germany the implementation of the EPBD is the responsibility of the Federal Ministry of Transport, Building and Urban Development (www.bmvbs.bund.de), the Ministry of Economics and Technology and the 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.

On this basis, the current ‘Energy Saving Ordinance’ (EnEV 2007) (www.bbr.bund.de) based on EnEV 2002 and EnEV 2004, was adopted by the Federal German Government in July 2007 and came into force on 1 October 2007.

With this Germany fully complies with the EPBD. An amended EnEV 2009 will come into force on 1 January 2009.

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<td><strong>In Germany</strong></td>
<td>The software calculation tools need to be based on DIN V 18599 for non-residential buildings. Software for residential buildings is currently based on DIN V 4108-6 and DIN V 4701-10. However, a new calculation methodology based on DIN V 18599 will be introduced with EnEV 2009. This new methodology will cater both for new and existing buildings. The calculation method according to DIN V 18599 is a holistic assessment of the building's thermal envelope, built-in lighting systems, and appliances for heating, ventilation, cooling and hot-water supply. Requirements for new residential buildings depend on the surface-volume-ratio and in case of central hot-water supply of the building floor area. For existing buildings, the requirements have to be met whenever building fabric elements of heated or cooled space are installed for the first time or changed in a way that allows energetic improvement. In this case the owner has the choice to either meet the special requirements (u-values) for the respective building element or to prove that the building as a whole does not exceed 140% of the requirements for a new building. Measures of low extent which affect less than 20% of the whole area of the element in question are excluded from these requirements. In Germany the 1000m² threshold does not exist. <strong>New buildings</strong> have required certification since 2002. <strong>Deadlines for certification:</strong> • All residential buildings built before 1965 by July 2008 • All residential buildings built after 1965 as well as all non-residential buildings by July 2009 <strong>In public buildings</strong> or buildings with a lot of through trade exceeding 1000m², the certificate will need to be displayed at the building’s entrance. There are two types of certificate. Until 30 September 2008 building owners may choose the type of certificate. <strong>Type 1</strong> is a cheap version (20–50 € via the Internet or via the company that reads the heating meters) that only provides information regarding the energy use of the previous 3 years. It has no real value as it does not say anything about the actual energy performance of the building itself. As of 1 October <strong>Boilers:</strong> Implementation of Article 8 is the responsibility of the Ministry for the Environment, Natural Conservation and Nuclear Safety. The inspection of boilers is covered by the 'Small and medium combustion plant ordinance' which was last amended in 1997 and falls within the scope of the 'Emissions Act'. If a boiler does not comply with the requirements it has to be replaced. Inspections are carried out by the local master chimney sweeper on behalf of the responsible authorities. The chimney sweeper keeps a register of all boilers in the region. The operator of the boiler has to pay a fixed official fee according to the extent of the work. With boilers installed before 1978 a replacement is generally mandatory by a certain date. Germany has opted for option Bb as the additional introduction of a mandatory inspection scheme was considered as unjustifiable. The German regions set the accreditation requirements for experts. Therefore rules may considerably differ per 'Bundesland'. Due to the fact that there is a high demand for certificates, a wide range of qualifications are given market access. <strong>Certificates may be issued:</strong> For all buildings: • By architects and engineers of building-related backgrounds and by other engineers and natural scientists with a building-related degree who have either acquired knowledge about energy efficient buildings/construction during their studies or during further vocational training or who have related professional experience of at least 2 years. <strong>Only for residential buildings:</strong> • By master craftsmen or someone with an equal qualification related to building and building appliances (including chimney sweepers) who have successfully attended an additional vocational training course.</td>
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<td>Next Steps:</td>
<td>Extensions to existing buildings of more than 50m² heated or cooled space have to meet the requirements for new buildings.</td>
<td>2008, this type of certificate may only be used for homes built after 1978 and more generally with all buildings comprising of five or more units regardless of the age of the building. Type 1 certificated may not be used when applying for public funding or state subsidised grants. Type 2 is a more expensive (150-500 €) and comprehensive version that highlights the actual performance of the building and its components. This type of certificate can only be issued by a skilled expert.</td>
<td>The German Energy Agency will launch a campaign to inform the general public about improvements to their heating systems. There are plans to successively replace convector heating systems that are older than 30 years in larger buildings if economically feasible.</td>
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<td>EnEV 2009 will tighten requirements for primary energy demand by 30% and again in 2012 by another 30%. There are plans to make insulation of top floor ceilings, exchange or updating of boilers, insulation of warm water pipes compulsory also for smaller residential buildings which are currently exempt from this rule.</td>
<td>2008, this type of certificate may only be used for homes built after 1978 and more generally with all buildings comprising of five or more units regardless of the age of the building. Type 1 certificated may not be used when applying for public funding or state subsidised grants. Type 2 is a more expensive (150-500 €) and comprehensive version that highlights the actual performance of the building and its components. This type of certificate can only be issued by a skilled expert.</td>
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<td>In addition building owners can be fined if they do not make a certificate accessible to a prospective buyer or tenant. As there is no official register of experts, there is no national register of certificates either. However, as of July 2008, a voluntary national quality seal for inspectors will be introduced by the German Energy Agency (Dena) to monitor the quality of the certificates and the qualification of the inspectors and to build consumer confidence.</td>
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<td>• By persons who are authorised to perform energetic calculations for new buildings according to the building codes of the “Bundesland” –within the scope of their authorisation. For new buildings, setting accreditation requirements is the responsibility of the German “Bundesländer”. Although there will be no formal system of approval and certification, there will be a penalty if an unauthorised person issues a certificate. In addition building owners can be fined if they do not make a certificate accessible to a prospective buyer or tenant. As there is no official register of experts, there is no national register of certificates either. However, as of July 2008, a voluntary national quality seal for inspectors will be introduced by the German Energy Agency (Dena) to monitor the quality of the certificates and the qualification of the inspectors and to build consumer confidence.</td>
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In Greece, implementation is the responsibility of the Ministry of Development and the Ministry of Environment.

On 28 June 2007, Greece was taken to the European Court of Justice by the European Commission for failing to notify its implementation measures. Despite extensive research, detailed information regarding the new regulation ‘KENAK’ which is to replace the previous regulation ‘KOXEE’ and into which the calculation method would be integrated, is still limited. Software tools are expected to be developed by the market and will be accredited by the government. These should be based on EN 832.

The requirements for new buildings are supposed to come into force for any building permit requested after 1 January 2009. An energy study needs to be carried out before a permit can be issued. Proof of compliance needs to be made upon completion. These requirements will also apply to new building components used for the renovation and extension of existing buildings if the extension exceeds 30m². The requirements are due to be adopted on 1 January 2009.

The standard A-G label will be used with a subdivision into A+, A, A- to further stimulate building efficiency competition. A certificate will become mandatory for public buildings and other buildings when rented or sold as of 1 January 2009.

Boilers: A new inspection method has been developed.

Air Conditioning: Inspections of A/C systems were scheduled to start in 2007 but it is not clear whether this actually has been the case.

**Legal Context**

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**Additional Sources:**

- www.buildingsplatform.eu
- www.eebd.org

**Boilers:**
No information available.

**Air Conditioning:**
Inspections of A/C systems were scheduled to start in 2007 but it is not clear whether this actually has been the case.
In Hungary, the implementation of the EPBD is the responsibility of the State Office of Housing and Building (Articles 3 to 7) and the Ministry of Economy and Transport (Articles 8 & 9).


The content of the regulation covering Article 7 has been under discussion since late 2006 and may be rejected due to changes in the administration and due to concerns relating to the cost of certification.

The administration hopes that certification will start by January 2009.

The calculation procedures are defined in detail in the annex of Ministerial Decree TNM 7/2006 which has been in force since 1 September 2006.

A general description of the calculation method is given on www.egt.bme.hu.

MSz-EN – the CEN standards adopted by Hungary – have been in force since 2005.

A software tool was developed on a commercial basis in 2005. Further details on the software are available in Hungarian on www.bausoft.hu.

For residential buildings, the popular ARCHICAD software has added special modules facilitating the export of the necessary data directly from the graphical design and to carry out all calculations. Free download is available for residential buildings. The modules have been developed in close cooperation with the team responsible for the development of the new regulation.

Although the method of the certification became subject of discussion, the rating system and the numeric values of the requirements have been in force since September 2006.

There are 10 categories in the Hungarian rating system.

The annual primary energy consumption of existing buildings may be 3 to 6 times higher than that of a new building.

The new requirements are mandatory for building permits requested after 1 September 2006. Building permits must be issued for new buildings as well as for major renovation of existing buildings of more than 1,000m². The requirements are the same for both types of buildings.

Proof of compliance must be made in two stages:
- When requesting the building permit
- After completion of the building

Although the ministerial order is not in force yet, many practising engineers already use the calculations, as rules and methods of the certification as well as an interactive electronic guide have already been published (see www.egt.bme.hu) and the software is available.

Under discussion.

The Chamber of Engineers and the Chamber of Architects agreed in early 2006 that a common examination board will issue the licences for experts who are in possession of an appropriate diploma and can demonstrate relevant practical experience and upon completion of an additional exam.

This agreement has been approved by the State Office of Housing and Building.

Budapest University of Technology and Economics and other bodies have started to offer courses for potential experts (32 hours of training). About 1,500 practising engineers and architects have been prepared to sit the exams.

To date no licences have been issued due to the lack of the relevant regulation regarding certification.
Other well proven software tools are ESPr, TRYNSIS, and Energy+.
However, the calculation may also be performed manually.

To date no official registration and quality control measures have been issued – although the RAMSYS Company declared its intention to take the responsibility for a central obligatory registration at no cost to the central administration. As yet, there has been no response from the Ministry.

Some of the participants of the training courses carried out a pilot certification program on a voluntary basis involving all residential buildings in a small town in order to gain experience and to prove the usability of the originally proposed asset method.
Towards an Energy Efficient European Building Stock

**Ireland**

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In Ireland, the implementation of the EPBD is the responsibility of the Department of the Environment, Heritage and Local Government (DEHLG) (Articles 3 to 7) and the Department of Communications, Marine and Natural Resources (DCMNR) (Articles 8 & 9).

The Directive was adopted into Irish law in 2006.

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 time scales required to achieve full implementation in a workable and cost-effective manner. Copies of the plan are available on www.sei.ie/epbd

### Article 3

The ‘Dwellings Energy Assessment Procedure’ (DEAP) is the procedure for assessing the energy performance of new residential buildings, for the purpose of demonstrating compliance with ‘Part L’ (Conservation of Fuel and Energy) of the National Building Regulations.

The calculation procedure can be downloaded from www.sei.ie/epbd/deap

The procedure takes into account the energy required for space heating, ventilation, water heating & lighting, minus any savings from energy generation technologies.

### Article 4–6

**Boilers:**

The ‘Home-Heating Appliance Register of Performance’ (HARP) database is a product efficiency database for home-heating appliances that are used in Ireland. The ‘HARP’ database was developed by the UK Building Research Establishment in partnership with GASTEC at CRE Ltd, Kovara and Heating & Plumbing Markets International and is based on the equivalent UK SEDBUK database.

The database is used for the following purposes:

- To provide registered BER assessors with specific product efficiency information which they can use when calculating BERs for residential buildings
- To track compliance with the ‘Boiler Efficiency Directive’
- As a resource in the boiler efficiency promotion campaign which is being developed to comply with Article 8 of the EPBD

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The procedure takes into account the energy required for space heating, ventilation, water heating & lighting, minus any savings from energy generation technologies.


The type and level of requirements depend on the function of the type of building (residential, 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

Since 1991 requirements have been set for new building components used for the renovation and extension of existing buildings. The requirements have been reinforced since 1 July 2006.

The relevant documents can be downloaded from the building standards section of www.environ.ie

For **new residential buildings** became mandatory on 1 January 2007.

An energy certificate called ‘Building Energy Rating’ (BER) will be needed as of 1 July 2008 for new non-residential and public buildings.

**Residential existing buildings** will need a BER as of 1 January 2009.

A BER is an objective scale of comparison for the energy performance of a building ranging from A1 to 6. An advisory report must accompany a BER certificate (tool on www.sei.ie/ber).

The assessments are submitted by the assessor to the BER National Administration System. Public data are accessible on the web.

As of 1 January 2009, the BER will be required at the point of sale or rental for all **existing buildings** (residential, non-residential and public), or upon completion for a **new building**.

### Article 10

**Boilers**: The ‘Home-Heating Appliance Register of Performance’ (HARP) database is a product efficiency database for home-heating appliances that are used in Ireland. The ‘HARP’ database was developed by the UK Building Research Establishment in partnership with GASTEC at CRE Ltd, Kovara and Heating & Plumbing Markets International and is based on the equivalent UK SEDBUK database.

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- To track compliance with the ‘Boiler Efficiency Directive’
- As a resource in the boiler efficiency promotion campaign which is being developed to comply with Article 8 of the EPBD

BERs will be carried out by specially trained BER assessors, registered by Sustainable Energy Ireland (SEI).

A list of BER assessors (usually building professionals like architects, engineers, etc.) as well as the requirements set are available on www.sei.ie/epbd

Assessors have to re-register annually.

Registration is subject to payment of fees.
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### Air Conditioning:

The inspection of A/C systems is covered by the Statutory Instrument No. 346 of 2006 of the European Communities ‘Inspection and Assessment of certain Air Conditioning Systems’ regulations of 2006 and was adopted in June 2006. Inspections have become mandatory since January 2008.
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### In Italy, the implementation of the EPBD is the responsibility of the Ministry of Economic Development, in collaboration with the Ministry of Environment and the Ministry of Infrastructures.

On 19 August 2005, the Council of Ministers approved a first Legislative Decree, representing a general framework for the transposition of all EPBD articles, except article 9.

On 29 December 2006, the Council of Ministers has adopted a new Legislative Decree regarding modifications and extensions.

The official texts are available from the Italian Standard Organisation. (www.uni.com)

### Boilers:

- Inspection of boilers was introduced in Italy with law n. 10/1991. Legislation D. 311/2006 has modified some procedures, giving more responsibility to the regions and allowing a longer maximum intervention (4 years) for small gas boilers maintenance and control.

- Experts carrying out the inspection of boilers need to be certified by ENEA or the regional municipalities.

- All inspectors need to undergo training and also need to be registered with regional organisations. (For example ‘Casa Clima’ for Bolzano, ‘SACERT’ for Milano, ‘ECO ABITA’ for Reggio-Emilia).

### Air Conditioning:

- The procedures for inspection of A/C systems are still under discussion as the three year derogation period has been applied.

- The implementing decree for the inspection of A/C systems will be adopted by the Government before the end of 2008 and will come into force as of January 2009.
In **public buildings**, the EPBR requires compulsory installation of solar thermal systems for hot sanitary water.

For **existing buildings**, the Government adopted the EP minimum requirements also for **renovated buildings** through a gradual approach:

- Integral application to the whole building in case of total renovation and/or demolition and reconstruction of existing buildings having a useful surface of more than 1000m².
- Integral application, but limited to the new part of the building if this part exceeds 20% of the original volume.
- Application limited to single parameters, performance levels and prescriptions when the intervention on an existing building regards mainly renovation of heating systems.

For **new buildings** exceeding 1000m², the compulsory display of the certificate is required. The same obligation is extended to **existing public buildings**, when an energy service contract of any type is signed, starting as of 1 July 2007.
In Latvia, implementation is the responsibility of the Ministry of Economics. The 'Valsts Agentura' – the State Agency for Housing of Latvia is also involved in the process of preparing implementation.

Latvia is making use of the 3 year derogation period and will therefore not implement before 1 January 2009.

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**In Latvia, implementation is the responsibility of the Ministry of Economics. The 'Valsts Agentura' – the State Agency for Housing of Latvia is also involved in the process of preparing implementation.**

The methodology will be based on calculations considering indoor and outdoor climate conditions.

Requirements already exist for the maximum permissible transmission heat loss coefficient of the external envelope structure of buildings and of the maximum permissible heat loss of buildings depending on the type of building. These are included in the ‘Latvian Building Code’ LBN 002-01.

The requirements apply to both new and existing buildings.

Despite intensive research it was not possible to obtain any information with regard to certification in Latvia.

**Boilers:**

Latvia gas opted for raising awareness with regard to boilers and heating systems. It is up to the energy inspector to ensure that the owner of a building is provided with adequate information and advice.

**Air Conditioning:**

Given Latvia's geographical location, A/C systems are not widely in use and therefore legislation is not yet in place.

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**Additional Sources:**

www.buildingsplatform.eu | www.ma.gov.lv
In Lithuania, the implementation of the EPBD is the responsibility of the Ministry of Environment (Articles 3 to 7 and partly Article 10) and the Ministry of Economy (Articles 8, 9 and partly Article 10).

The main provisions regarding the energy performance of buildings and the certification are described in ‘The Law Amending the Law on Construction’ and ‘The Law on Energy of the Republic of Lithuania’.


The software has been prepared and adopted by the Ministry of Environment as well as the training program, rules and procedures for the experts.

The calculation procedure is based on standards EN 15217:2005 and EN 15203:2005 and has to incorporate a special calculation programme.

The energy consumption for building space heating is determined according to the default coefficient value of each building component:

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The new energy performance requirements are described in the ‘Building Technical Regulation STR 201.09:2005’ and came into force on 4 January 2006.

**The energy performance class may not be:**
- Lower than C for **new buildings**
- Lower than D for **existing buildings** with a floor area exceeding 1000m² after major renovation

The requirements are not mandatory for buildings for sale or rent, but an evaluation procedure will become mandatory as of 1 January 2009.

Certification requirements for **new buildings** came into force on 1 January 2007 and until May 2008 594 certificates for new buildings had been issued.

Certification requirements for **existing buildings** and refurbished existing buildings will come into force as of 1 January 2009.

**Boilers:**

According to Order No. 4-73 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 started in 2007.

Inspection of boilers fired by non-renewable liquid or solid fuel of an effective rated output of more than 20-100 kW capacity are supposed to start in 2008 and will need to be carried out every 2 years.

**Air Conditioning:**

Inspections of A/C systems of an effective rated output of more than 12 kW are supposed to start in 2008.

The ‘Certification Centre of Construction Products’ under the Ministry of Environment was appointed to manage the accreditation of experts and the registration of the certificates.

The expert training program was adopted by Order no. D-1-305 in June 2006. Training courses started in November 2006. The program will be revised every 5 years.

**Requirements:**

Market access is for engineers with a relevant experience of three years in construction, who have followed special training courses (32 hours) and certification practice of 3 buildings.

Two institutions were appointed as teaching bodies for experts:
- The ‘Architecture and Building Institute’ of the Kaunas Technological University
## Towards an Energy Efficient European Building Stock

**EU Public Affairs**

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- Normative values are taken from the requirements laid down in the ‘National Building Technical Regulation STR 2.05.01:2005’ on the ‘Thermal Technique of Building Envelopes’.
- Reference values are determined according to the requirements of the Building Codes and the construction guides from the corresponding construction period.
- Calculated values are determined according to the design data for new buildings and the standard data base with respect to the construction year, and the type of building element for existing buildings.
- Energy consumption for domestic hot water and electricity is determined according to the default values without taking into account the usage of individual tenants.

- The ‘Quality Management Centre’ of the Vilnius Gedimino Technical University.

### Requirements for inspectors of boilers and A/C systems:
- A higher technical education
- 3 years experience in ventilation and A/C related fields
- A certificate of having obtained an intermediate level in electrical safety
- Special training courses

The training is organised by the General Director of the Lithuanian Labour Market Training Authority under the Ministry of Social Security and Labour by approved training programmes. Training will start at the end of 2008.
The calculation programme is the same for **new** and **existing buildings**.

However, the energy consumption during summer is only assessed for domestic hot water and electricity use. Ventilation related consumption is assessed only during the heating period. The energy consumption of A/C systems and cooling is not included in the calculation as at present there are no normative values for this.

Information in Lithuanian is available on [www.am.lt](http://www.am.lt) and [www.spsc.lt](http://www.spsc.lt)

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**Additional Sources:**

- [www.buildingsplatform.eu](http://www.buildingsplatform.eu)
- [www.am.lt](http://www.am.lt)
- [www.spsc.lt](http://www.spsc.lt)
- [www.bkagentura.lt](http://www.bkagentura.lt)
- [www.ukmin.lt](http://www.ukmin.lt)
Towards an Energy Efficient European Building Stock

EU Public Affairs

In Luxembourg, the implementation of the EPBD is the responsibility of the Department for Energy of the Ministry of Economy and Foreign Trade.

First regulations concerning thermal insulation already came into force in 1993 with the introduction of the ‘Loi du 5 août 1993 concernant l’utilisation rationnelle de l’énergie’ into which the EPBD requirements have been integrated.

The 30 November 2007, the Grand-Ducal Regulation concerning energy performance in buildings was adopted (Memorial A no.221) and came into force on 1 January 2008. On 21 December 2007, a decision was taken with regard to a program addressing the improvement of thermal insulation for existing buildings and low energy houses. This program will run from 1 January until 31 December 2012.

The new regulation implements a methodology to calculate the energy performance of new residential buildings and of existing residential buildings if they are subject to major modifications or extensions. More information available on: www.legilux.public.lu/leg/a/archives/2007/2211412/index.html

Requirements include:
• Maximal U-values of building elements
• Building air tightness
• Shading measures
• Insulation of hot water pipes
• Qualitative requirements for ventilation systems

The requirements for existing buildings undergoing modifications or extensions are the same as for new buildings. However, for extensions, the primary energy and heating energy requirements will only need to be met if the energy reference volume of such an extension exceeds 73m³.

An energy performance certificate is required:
• Each time a building permit is needed – both for new buildings and refurbishment/extension of existing buildings.
• If an alteration of the technical installation of a building influences its energy performance.

Every building owner must be in possession of an original of the certificate. When a change of ownership takes effect, the owner is required to forward the original of the certificate to the new owner immediately. Four years after the issuing of a certificate for a new or existing residential building, the building owner must ensure that the certificate is accomplished by an energy consumption indicator for heating and/or domestic hot water.

Boilers:
Regular 4 year inspections of gas-powered boilers are covered by the ‘Grand-Ducal Regulation’ of 14 August 2000. Oil-powered boilers are covered by the amended ‘Grand-Ducal Regulation’ of 12 December 1987. The inspection of installations older than 15 years will be integrated into the regulations of 1987 and 2000 respectively.

Air Conditioning:
Inspection is currently covered by the amended ‘Grand-Ducal Regulation’ of 18 April 2004 but does not yet fulfil all EPBD requirements. A revision is under discussion.

The calculations have to be performed by architects, technical engineers and/or accredited experts, who have completed the required training course.

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Air Conditioning:
Inspection is currently covered by the amended ‘Grand-Ducal Regulation’ of 18 April 2004 but does not yet fulfil all EPBD requirements. A revision is under discussion.

The calculations have to be performed by architects, technical engineers and/or accredited experts, who have completed the required training course.
In state owned residential buildings, in local authorities or associations of local authorities where the reference surface energy exceeds 1000m² and which are frequented by a significant number of people, the certificate must be displayed at the entrance of the building.

The certificate rates energy performance on a scale from 1 to 9.

**Three indicators are used:**
- Primary energy consumption
- Heating consumption
- CO₂ emission

Data on hot water and heating systems are included, as well as suggestions for improvement measures.
In Malta, the implementation of the EPBD used to be the responsibility of the Ministry for Resources and Infrastructure and is now under the responsibility of the Ministry for Resources and Rural Affairs.

Malta adopted measures to implement the Directive into national law in November 2006 (LN 238) when the Government issued the minimum requirements for the energy performance of buildings (Articles 4 to 6).

The necessary legislative provisions that will amend LN 238 will be issued as subsidiary legislation under the ‘Malta Resources Authority Act’.

A draft legal notice for the transposition of the whole Directive has been prepared and is under discussion. All consultations were due to be completed by the end of June 2008. The legislation was due to be published by the beginning of August 2008 and enter into force on 2 January 2009.

No specific calculation procedure has been adopted yet. Two existing software packages (EPA-NR, ISBEM) have been evaluated and a decision as to which one will be chosen is supposed to be taken at the end of July 2008.

The selected software will be verified, modified using local data sets and customized for Maltese assessors.

A separate assessment that takes into consideration both heating and cooling according to the relevant CEN standards is expected by September 2008.

A 46-page technical guidance Document ‘Conservation of Fuel, Energy and Natural Resources’ (available on www.mri.gov.mt) was issued as part of the regulations and is the instrument that sets the parameters for compliance.

The requirements include:
- Thermal values of the building fabric, limitation of areas of glazing both in connection with loss of heat or coolness as well as with solar heat gain
- Controls and insulation of heating and cooling systems
- Controls of artificial lighting systems
- Conservation and re-use of rainwater

It covers new and existing buildings for which building permit applications are received after 2 January 2007.

Proof of compliance has to be provided after completion of the building.

An asset rating will be used for all new buildings and buildings over 1.000m² that undergo major renovations.

A combination of asset and operational ratings will be used for public buildings over 1000m².

Residential buildings will need a certificate as of 2 January 2009, while all other buildings will need one as of 1 June 2009.

The certificate has to be provided within the period of the promise-of-sale agreement or 30 days from the signing of the rental agreement. If the owner does not provide this certificate, the buyer or tenant will have the right to engage an assessor himself, to increase the binding period of the promise-of-sale and to deduct the expenses from the amount agreed.

Malta is working on finalising methodologies based on CEN standards and these are supposed to be ready by the end of August 2008. The legislation concerning boilers and A/C systems should come into force on 2 January 2009.

Boilers:
- For all existing heating installations with boilers of an effective rated output of more than 20kW, even those older than 15 years, the first inspection shall be made compulsory between 2 January 2009 and 1 January 2010.
- For boilers fired by non-renewable liquid or solid fuel and of an effective rated output of between 20kW and 100kW, an inspection will be carried out every 2 years following their date of first commissioning and registration.
- For boilers with an effective rated output over 100kW, an inspection will be carried out

In Malta, architects and civil engineers (‘Periti’) as well as mechanical and electrical engineers require an accreditation which is issued by the State. They also fall under the rules, regulations and codes of ethics issued by their respective Chambers.

In terms of training, a programme is being drawn up for holding training courses for assessors and certifiers in September 2008.

It is likely that ‘Periti’ and engineers will be asked to attend an induction course on the chosen software/s and upon successful completion of the course will be registered as assessors with the Malta Resources Authority.
The proposed legislation gives the Malta Resources Authority (MRA) power to delegate to other entities the administration, monitoring and enforcement of the provisions.

The implementation of the regulations will be monitored and checked by the delegated entity of the MRA.

The MRA promotes energy efficiency via an advertising campaign (‘Ma tridx wisq’ – ‘it doesn’t require much’) available on www.matridxwisq.org.mt

Control of the regulation is the responsibility of the design architect and/or engineer and is on a self-regulatory basis. It still has to be decided which authority will monitor this.

every 2 years following their date of first commissioning and registration.

- For gas-fired boilers, an inspection will be carried out every 4 years following their date of first commissioning and registration.

Certification of boilers/heating systems will be carried out by ‘Services Engineers’ who are accredited, are registered and have followed a short introduction course on the methodology that is being adopted.

**Air Conditioning:**

A/C is widely used in Malta.

Regular inspection will be imposed on the date of first commissioning and registration with subsequent inspections at least every 5 years.

- As of 2 January 2009, owners of A/C units, or a number of split A/C units installed in any one property or building,
or centralised system, with an effective rated output of more than 12kW, whether in residential or other buildings, are to ensure that such units or systems are inspected by an assessor at regular intervals.

- In the case of existing buildings having existing installations with an effective rated output of 250kW or more, a one-off inspection and certification of the whole system is required and the owner or tenant of the building needs to acquire a certificate within 12 months as of 2 January 2009. This has to be followed up by inspections and certifications at regular intervals not exceeding 5 years.

- In the case of existing buildings having existing installations with an effective output of more than 12kW and less than 250kW an inspection and certification of the system is required and the owner or tenant of the building needs to

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<td>acquire a certificate within 24 months as of 2 January 2009. This has to be followed up by an inspection and certification at regular intervals not exceeding 5 years.</td>
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The Netherlands

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In the Netherlands, the implementation of the EPBD is the responsibility of the Ministry of Housing, Spatial Planning and the Environment (VROM).


### Boilers:

Small boilers are checked annually and the energy performance will be taken into account in the yearly inspection. For this a tool has been developed: the ‘Installation Performance Scan’. Maintenance and, if needed, advice to replace the boiler will be encouraged by means of public information.

For large boilers (>100 KW), the Netherlands complies with current legislation in the Environmental Law.

### Air Conditioning:

Similar methods are under development.

Energy performance inspectors are experts and need a valid NL-EPBD-Certificate as described in BRL 9500. The requirements can be downloaded on www.isso.nl

Companies, not individuals are accredited by certifying bodies. Experts will need to have a higher (building related) technical education and will need to follow an additional course in order to become an energy performance inspector.

Registered certified companies can be found under www.kbi.nl

### Additional Sources:

www.buildingsplatform.eu
In Poland, the Ministry of Transport and Construction is responsible for implementation. The implementation of the EPBD is based on the 'Building Law'. A methodology for the calculation has been developed. Further information can be found on: www.mi.gov.pl

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Every building will be assessed according to a reference building for which technical requirements are set.

For new buildings, proof of compliance needs to be provided before the permit for use is issued.

New buildings need to have a certificate as of 1 January 2008. Existing buildings need a certificate as of 1 January 2009. (There has already been a pilot certification project of an existing building).

The technical minimum requirements set for the reference building include energy efficient boilers, ventilation systems and A/C systems.

Requirements:
Boiler and A/C system inspections will be carried out by specialist engineers who have followed a course at a technical university and have passed special exams.

For the certification, candidates need to have a relevant higher education and pass an additional exam. Certain specialised professions like architects are exempt from following these courses and may access the market directly.

Courses are being introduced at university level to prepare experts. Poland needs an estimated 5000 assessors.

Additional Sources:
www.buildingsplatform.eu
In Portugal, the implementation of the EPBD is the responsibility of the Ministry of Economy and the Ministry of Public Works.

On 4 April 2006, the Government adopted three Decrees that constitute the transposition of the EPBD into national law (78/2006, 79/2006, 80/2006).

The direct responsibility for Decrees 79/2006 (Art. 8, 9) and 80/2006 (Art. 3, 4, 5, 6) lies with the Ministry of Public Works. More recently, two other legislative documents were published: ‘Portaria N.461/2007’ which establishes the timetable for the implementation of the SCE and ‘Portaria N.835/2007’ which defines the certification process and ‘Portaria N.461/2007’.

In addition, qualified experts must attend recognised courses and pass a demanding national exam that evaluates their knowledge about the technical requirements of the building regulations and the details of the certification system itself.

ADENE co-ordinates the training of qualified experts and is responsible for the Energy Certification module in all courses. These courses are available in the three areas covered by the system and award different qualifications:

- Residential and small non-residential: RCCTE
- Large non-residential/ Energy: RSECE-E

The calculation procedures are defined in the building regulations for residential buildings and in the HVAC regulations for non-residential buildings.

A software tool, produced by INETI for SCE for both residential and small non-residential buildings became available in September 2006. For residential buildings the calculations may be performed manually, on a spreadsheet, or using any other commercial software package that became available in the meantime, offering enhanced interfaces and databases of materials, construction details, etc.

For large non-residential buildings, commercial software tools complying with accuracy requirements based on ASHRAE standard 140-2004 must be used to calculate energy consumption, using detailed hourly simulations on a yearly basis.

The ‘National System for Energy and Indoor Air Quality Certification of Buildings’ (SCE) came into force on 1 July 2007. It aims to achieve two primary objectives:

- To save energy, while ensuring comfortable conditions
- To ensure an acceptable level of indoor air quality

ADENE (www.adene.pt), the Portuguese Energy Agency, is the managing body for this process, under the shared supervision of the Directorate-General of Energy and Geology and the Portuguese Environmental Agency.

The new requirements are mandatory for building permits requested after 3 July 2006. The type and level of requirement depend on the type of building (residential, office buildings, schools, etc.).

The certificate is the most visible aspect of the SCE: it classifies the buildings on an efficiency scale ranging from A+ (high efficiency) to G (poor efficiency). It is used for residential and non-residential buildings.

To issue certificates, qualified experts must access and use a web based central registration system. This regularly updated national database will be used to monitor progress basic statistics and studies for the future.

In the case of non-residential buildings, inspections will be a required part of the HVAC maintenance plan and their execution will be subject to verification by qualified experts when performing periodic audits of the building, once every 2 or 3 years.

Only qualified experts are permitted to issue certificates and to carry out inspections. They must be recognised architects or engineers with at least 5 years’ experience, on the basis of peer-analysis of their CVs carried out by elected boards within their professional associations.

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The certificate is the most visible aspect of the SCE: it classifies the buildings on an efficiency scale ranging from A+ (high efficiency) to G (poor efficiency). It is used for residential and non-residential buildings.

To issue certificates, qualified experts must access and use a web based central registration system. This regularly updated national database will be used to monitor progress basic statistics and studies for the future.

The timetable for the implementation of the SCE in various types of buildings is divided into three phases:

- In the first phase, certification is only required for all new residential and non-residential buildings with a floor area larger than 1000m² and requesting a construction permit as of 1 of July 2007.
- The second phase includes all new buildings, regardless of their floor area, when a building permit is requested as of 1 July 2008.
- The third phase will be subject to peer-analysis of their CVs carried out by elected boards within their professional associations.

In addition, qualified experts must attend recognised courses and pass a demanding national exam that evaluates their knowledge about the technical requirements of the building regulations and the details of the certification system itself.

ADENE co-ordinates the training of qualified experts and is responsible for the Energy Certification module in all courses. These courses are available in the three areas covered by the system and award different qualifications:

- Residential and small non-residential: RCCTE
- Large non-residential/ Energy: RSECE-E

In Portugal, the implementation of the EPBD is the responsibility of the Ministry of Economy and the Ministry of Environment.

More recently, two other legislative documents were published: ‘Portaria N.461/2007’ which establishes the timetable for the implementation of the certification process and ‘Portaria N.835/2007’ which defines the certification process and ‘Portaria N.461/2007’.
An advertising campaign has been developed for the launch of the SCE. The campaign slogan ‘Let’s save energy to save Portugal’ is being promoted via television channels, the press and the Internet.

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The proof of compliance must be made in two stages:
- When requesting the building permit
- After completion of the building

Control of the regulation is the responsibility of the municipality where the building is located, based on a ‘Declaration of Compliance with the Building Regulations’ issued by an accredited expert registered with the SCE.

When the actual energy consumption of an existing building is above a certain threshold, an audit with an energy efficiency plan is required and all measures with a payback period shorter than 8 years must be implemented over a three year period.

The threshold level corresponds to the current 40% worst performers of their typology, as determined by extensive building energy consumption surveys commissioned by the national government in preparation of the new regulations.

- Full implementation is as of January 2009, when all buildings will be included in the certification system: new buildings, major renovations of existing buildings, public buildings and all buildings when sold or rented.

Certification of new buildings started in July 2007. About 1500 certificates had already been issued by qualified experts by the end of January 2008.

- Large non-residential/Indoor Air Quality: RSECE-QAI

A professional licence, valid for 5 years, is issued to qualified experts. It is subject to renewal pending proof of continued training and lack of malpractice.

The first group of qualified experts, consisting of about 200 experts, has been given the additional qualification for training new experts.

Recognised courses are already offered by more than 40 universities or accredited training institutions, and more than 700 candidates are undergoing training as of January 2008.

The goal is to have 2000 qualified experts by 2009.
**Legal Context**

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</table>

The threshold level that triggers an energy audit should be regularly reduced over the years.
### Romania

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</table>

In Romania, implementation is the responsibility of the Ministry of Transports and Public Works. The ‘Implementation Law’ 372/15.12.2005 has been adopted by Parliament.

The calculation methodology is set at national level. Further information was not available.

For all new buildings and also renovations and extensions to existing buildings, there are minimum requirements for building permits requested after 1 January 1998 in line with Regulation C107/1-7.

Proof of compliance must be made upon completion of the building.

The certificate includes reference values. Certification has become mandatory for new buildings with a building permit since 1 January 2007.

Residential buildings, when rented or sold, must have a certificate as of 1 January 2010.

**Boilers:**
Inspections have been mandatory since 1 January 2007.

**Air Conditioning:**
Inspection is supposed to become mandatory in the course of 2008.

**Requirements:**
- A specialised course at a university
- An exam at the Ministry

### Additional Sources:
www.buildingsplatform.eu
Towards an Energy Efficient European Building Stock
EU Public Affairs

### Slovakia

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</table>

In the Slovak Republic, the implementation of the EPBD is the responsibility of the Ministry of Construction and Regional Development (Articles 3 to 7) and the Ministry of Economy (Articles 8 & 9).

On 8 November 2005, the National Council of the Slovak Republic approved Act No. 555/2005 Coll. regarding the transposition of the EPBD in national law.

In December 2006 the execution order for this Act was published (N.625/2006 Coll.) which can be found on www.zbierka.sk.

In 1998, the ‘Slovak Energy Agency’ (SEA), headquartered in Bratislava, was established by the Ministry of Economy to provide energy efficiency consultancy services. The agency was renamed ‘Slovak Innovation and Energy Agency’ (SIEA) in 2007 and its competencies were extended to also include innovation.

In 2008, the establishment of a mandatory ‘Building documentation package’ by the Ministry of Construction and Regional Development is expected to make energy auditing and building energy certification processing simpler and more transparent.

The Ministry of Construction and Regional Development adopted minimum requirements for all new and existing buildings. The type and level of requirements depend on the function of the type of building. There are no set requirements for average insulation levels – only requirements for heat use. The requirements have come into force for building permits requested after 1 January 2008.

Certification is mandatory for new buildings and major renovations of an existing building where a building permit is mandatory as well as for public buildings and buildings which are rented or sold after 1 January 2008.

On 13 December 2006, the National Council of the Slovak Republic approved ‘Act No. 17/2007 Coll. on regular inspections of boilers, heating systems and A/C systems’ in order to optimise the functioning of these installations.

The law was published in January 2007 and entered into force on 1 January 2008.

The requirements for energy experts are set forth in the Slovak Act No. 555/2005. This Act will be amended in 2008 in the context of Directive No. 2006/32/EC.

Energy certificates may only be issued by officially licensed experts.

To be qualified and to obtain a licence, a university degree in the relevant area of certification is required, as well as three years of experience in the field.

‘Energy Auditor’ training courses are organised and professionally supervised by the SIEA.
In 2008, an information campaign ‘Good Advice = Saving’ is to be organised through the Ministry of Economy and the SIEA.

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**Additional Sources:**
www.buildingsplatform.eu | www.sea.gov.sk
In Slovenia, implementation is the responsibility of the Ministry of Environment and Spatial Planning. The ‘Buildings Construction Act’, the ‘Energy Act’ and the ‘Environmental Protection Act’ form the basis for implementation.

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In Slovenia, implementation is the responsibility of the Ministry of Environment and Spatial Planning.

The ‘Buildings Construction Act’, the ‘Energy Act’ and the ‘Environmental Protection Act’ form the basis for implementation.

Minimum requirements are part of the ‘Regulation on efficient use of energy in buildings’.

**Requirements are expressed in terms of:**

- Used energy (heat demand for heating and cooling)
- Final energy (energy demand for building operation)

Requirements for heat demand are to be 30% stricter than those of 2002.

For **new buildings**, a feasibility study will have to be done as part of the building permit documentation. Regulations are based on the ‘Energy Act’.

For **existing buildings**, when a building permit is mandatory, the newly constructed part of the building will also have to comply with the regulations.

Certification of **new buildings** and **public buildings** should start in 2008 and for other **existing buildings** at the beginning of 2009.

**Boilers:**

The framework of the ‘Environmental Protection Act’ already provides for a regular inspection of boilers.

**Air Conditioning:**

Inspections of A/C systems were supposed to have started at the beginning of 2008. They are covered by regulations based on the ‘Energy Act’. However, despite of intensive research it was not possible to verify to whether this has actually been the case.

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

Additional Sources:
www.buildingsplatform.eu | www.agen-rs.si/en
In Spain, the EPBD was implemented by 3 Royal Decrees regarding the ‘Código Técnico de la Edificación’ (CTE – Document HE published on 28 March 2006), the ‘Regulations for Thermal Installations in Buildings’ (RITE – published on 29 August 2007) and the ‘Basic Procedure for Energy Performance Certification of New Buildings’ (published on 31 January 2007).

The ‘Energy Performance Building Regulation’ (EPBR) is the responsibility of the Ministry of Housing except for the revised RITE and the actual certification which is the responsibility of the Ministry of Industry, Tourism and Trade.

EPBR is a national regulation and does not use CEN standards. It covers both new and existing buildings. The assessment method is based on asset rating.

More information regarding the technical specification of the calculation procedure can be found in Annex 1 of Royal Decree 47/2007.

EPBR requires a minimum contribution of solar thermal and photovoltaic systems based on the type and size of the building.

The requirements for both residential and non-residential new buildings set by the ‘Código Técnico’ came into force for building permits requested after 17 September 2006.

The type and level of requirements depend on the climatic zone where the building is located as well as on levels of occupancy.

The energy demand of the building should be lower than that of a reference building.

Compliance checks needs to be performed before and after the works.

Compliance with ‘Energy Demand Limitation’ (Document HE1) can be checked using either a simplified or a complex procedure. The latter requires the use of the free official software tool ‘LIDER’.

Provisions regarding certification of new buildings have been adopted at national level with the ‘National Basis Procedure for Energy Certification’.

However, regional authorities may amend these by issuing more detailed provisions.

Certification for all types of new buildings has become mandatory for building permits requested since 31 October 2007.

There are 2 options for the calculation of the energy demand:

- A complex procedure that requires the use of the official software tool ‘CALENER’ (there are 2 versions: ‘CALENER_VYP’ for residential and small non-residential buildings and ‘CALENER_GT’ for larger non-residential buildings).
- A simplified procedure that includes any validated procedure approved by the user.

Boilers:

The inspection of boilers is already covered by RITE. They take place every 2, 4 and 5 years depending on the type of fuel used and the capacity of the boiler. Inspection of the whole facility installations is performed every 15 years.

Air Conditioning:

The inspection of A/C systems is also covered by RITE. They take place every 1 and 2 years depending on the capacity of the system. Inspections of the whole facility installations is performed every 6 years. The costs of the inspections are borne by the final user.

Inspections of thermal installations have been carried out by experts for years because of safety regulations. For the EPBD, an additional training of 2-3 days is required. Mainly architects and engineers are involved in the certification process. The specific requirements depend on the respective regional authorities.
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(More information can be found in section HE1 of document DB-HE 'Energy Saving' of the building code).

**Existing buildings** must comply with the same minimum requirements as **new buildings** when renovated or extended.

‘Certification Commission’ added to the already existing simplified methodology for residential buildings based on 12 tables for the different climate zones.

For **existing buildings** a ‘Basic Procedure’ is expected to be ready and mandatory as of 2009.
### Sweden

**Legal Context**

- **Article 3**: Adoption of a Methodology
- **Articles 4–6**: Setting of Energy Performance Requirements
- **Article 7**: Certification of Energy Performance of Buildings
- **Articles 8 & 9**: Boiler and A/C Inspections
- **Article 10**: Training of Independent Experts

In Sweden, the implementation of the EPBD is the responsibility of the Ministry of Enterprise, Energy and Communications and the National Board of Housing, Building and Planning (Boverket).

On 21 June 2006, Parliament adopted a law regarding the transposition of the EPBD which came into force on 1 October 2006 which was followed by the adoption of an ordinance which came into force on 1 February 2007.

On 1 March 2007, the regulations from the ‘National Board of Housing, Building and Planning’ came into force (www.boverket.se).


Operational rating (measured rating) is used for all types of buildings. If no measured values are available, calculation may be used.

There is no general calculation method and software tool for energy calculations. One software tool option is ‘ENORM’.

The type and level of requirements are different for residential and non-residential buildings.

A maximum energy consumption per m² of tempered floor is given (for heating, cooling and domestic hot water demand) along with other advice about comfort and indoor environment.

There are two climate zones. Proof of compliance must be made within 24 months after completion of the building.

Control of this regulation is the responsibility of the municipality where the building is located.

Sweden will not have an ‘Energy Performance Certificate’ but an ‘Energy Declaration’. All declarations must be sent to the ‘National Board of Housing, Building and Planning’ where they are lodged in a register.

Declarations will become mandatory for new buildings as of 1 January 2009.

For **public buildings** and multi-family houses, a declaration will become mandatory as of 31 December 2008.

Other buildings, when rented or sold must have a declaration as of 1 January 2009.

**Boilers:**

Testing of solid fuel appliances should be carried out in accordance with SS-EN 303-5. Solid fuel appliances with manual fuel supply should be designed with an accumulator or corresponding device to ensure effective energy management.

The testing of oil heating appliances should be carried out in accordance with SS-EN 303-2 and SS-EN 304.

For certain boilers, the regulations given in the mandatory provisions and general recommendations on efficiency requirements for new boilers heated by liquid or gaseous fuels of the National Board of Housing, Building and Planning (BFS 1997:58) apply. (BFS 2006:12)

The system for independent energy experts requires certified experts from an accredited company.

To get an accreditation, the company needs to have at least one certified expert in a leading position.

Experts will need to have a degree from a basic technical education. They need at least five years experience, of which at least two years need to have been spent in an area directly linked to energy auditing and certification. They also need to pass an additional theoretical exam.
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**Air Conditioning:**

The procedures for inspection of A/C systems will start as of 1 January 2009.

The size of the system, the cooling need of the building and cost-effective measures will estimate the efficiency of the system and help the owner to improve the efficiency.
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<tr>
<td>In England and Wales, the implementation of the EPBD is the responsibility of the Department for Communities and Local Government, supported by the Department for the Environment, Food and Rural Affairs. In March 2006, regulations were laid before Parliament to implement Articles 3–6. In March 2007 and June 2007, regulations were laid before Parliament to implement Articles 7–10.</td>
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<td></td>
<td>Procedures for a national calculation methodology for building energy performance applicable throughout the UK have been established. This is based on calculating CO2 emission per m² for an actual design and comparing this with the CO2 emissions per m² for a notional building which corresponds to the 2002 standards. Software tools have been developed by Government (SBEM and SAP); however other software packages, dynamic simulation models and SBEM interfaces can be used provided these are approved by Government (see Notice of Approval on the Communities and Local Government website). A software tool has also been developed by Government for calculating the actual energy performance of a building for display purposes.</td>
<td>The requirements for new and existing buildings came into force in April 2006 – see Approved Documents ADL1A and ADL2A on <a href="http://www.planningportal.gov.uk/England/professionals/en/1115314110382.html">www.planningportal.gov.uk/England/professionals/en/1115314110382.html</a></td>
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<td><strong>Scotland</strong></td>
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<tr>
<td>In Scotland, the implementation of the EPBD is the responsibility of the ‘Scottish Building Standards Agency’ (SBS). The SBS is part of the Scottish Executive which undertakes the national functions related to the building standards system. Articles 3–7, 9 &amp; 10 of the Directive are implemented through ‘The Building (Scotland) Act 2003’ and regulations laid before the Scottish Parliament in 2004, 2006 and 2007.</td>
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<td>The new energy standards came into force on 1 May 2007, Section 6 of the SBSA Technical Handbooks. The standards and guidance provided apply to new buildings as well as extensions, alterations or replacements to existing buildings. More information available on <a href="http://www.sbsa.gov.uk/tech_handbooks/books_index.htm">www.sbsa.gov.uk/tech_handbooks/books_index.htm</a></td>
<td>The requirements regarding the certification of buildings will be implemented progressively between August 2007 and October 2008. An ‘Energy Performance Certificate’ (EPC) is required when a building is constructed, sold or rented. It is valid for 10 years, except for sales of homes, which are subject to the Home Information Pack Regulations 2007, where a Home Information Pack (HIP) is required. In these cases an EPC must be no more than 12 months old when the property is first marketed. Further details can be found on <a href="http://www.homeinformationpacks.gov.uk">www.homeinformationpacks.gov.uk</a></td>
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<td><strong>Northern Ireland</strong></td>
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<tr>
<td>The requirement for new and existing buildings came into effect in November 2006 and the technical standards are set by ‘Technical Booklet F1’</td>
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<td></td>
<td><strong>England and Wales, Scotland, Northern Ireland</strong></td>
<td>Boilers: England and Wales, Scotland, Northern Ireland</td>
<td>An Energy Assessor needs to have both appropriate qualification and accreditation. Qualification: Energy Assessors should hold a current qualification in Energy Inspection. This is being developed as part of a ‘National Occupational Standard in Energy Inspection’. The qualification will be approved by the ‘Qualifications and Curriculum Agency’. Qualification bodies will develop assessment procedures that align with the ‘National Occupational Standard’. Accreditation: Different accreditation schemes have been set up for each sector requiring certificates. To be an energy assessor and produce energy certificates and Air Conditioning inspections an assessor must belong to an accreditation scheme as well as having the appropriate qualifications or experience and learning.</td>
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<tr>
<td><strong>Residential buildings:</strong></td>
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<tr>
<td>• Will require an EPC on construction as of 6 April 2008</td>
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### Legal Context

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<tr>
<td>In Northern Ireland, the implementation of the EPBD is the responsibility of the Department of Finance and Personnel, supported by the Department for Social Development. In August 2006, new building regulations were drawn up to implement Articles 3–6. A phased implementation of Articles 7–10 is planned for 2008.</td>
</tr>
</tbody>
</table>

### Articles 3–6

**Adoption of a Methodology**
- for residential buildings and 'Technical Booklet F2' for all other buildings. These technical booklets can be viewed on [www.buildingregulationsni.gov.uk](http://www.buildingregulationsni.gov.uk)

### Article 7

**Certification of Energy Performance of Buildings**
- Sold without marketing for sale will require an EPC on sale as of 1 October 2008.
- Will require an EPC on rent as of 1 October 2008.

### Articles 8 & 9

**Boiler and A/C Inspections**
- **Non-residential buildings:**
  - Over 10,000m² require an EPC on sale or rental as of 6 April 2008.
  - Over 2,500m² require an EPC on sale or rental as of 1 July 2008.
  - Over 50m² require an EPC on sale or rental as of 1 October 2008.
- ‘Display Energy Certificates’ (DEC) are required for publicly accessible public authority occupied buildings over 1000m² as of 1 October 2008.

### Article 10

**Training of Independent Experts**
- Air Conditioning:
  - **England and Wales**
    - First inspection of all existing A/C systems over 250 kW must have occurred by 4 January 2009.
    - First inspection of all remaining A/C systems over 12kW must have occurred by 4 January 2011.
    - A/C systems where the total system cooling capacity is greater than 12kWr (whether residential or non-residential) will be inspected at intervals not exceeding 5 years.
    - The inspection will include an assessment of efficiency, a review of their sizing and advice on improvements or replacements and alternative solutions.

### Scotland

- In Scotland, there is no specified qualification for energy assessors. The Scottish Government has entered into protocol with professional organisations/institutions whose members already have an understanding of the building/energy sectors.
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<tr>
<td></td>
<td>Certification is required under the Housing (Scotland) Act 2006.</td>
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<td></td>
<td>Certification is being phased out as follows:</td>
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<tr>
<td></td>
<td>• Sale of residential buildings as of 1 December 2008</td>
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<tr>
<td></td>
<td>• Sale of all other buildings as of 4 January 2009</td>
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<td></td>
<td>• Rental as of 4 January 2009</td>
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<tr>
<td></td>
<td>• Public buildings – on display by 4 January 2009</td>
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<td></td>
<td>Note: For the EPC for display purposes, Scotland is not using the same display EPC software used in England, Wales and Northern Ireland.</td>
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<td>There is no central database for lodging EPC’s for sale, rental or display.</td>
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<td>Inspections are phased in and are covering the largest systems first. The inspector is charged with setting the timetable for future inspection (every 3–5 years).</td>
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<td>New systems installed after 30 December 2008 must be inspected within 5 years of being put in service.</td>
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<td></td>
<td>First inspection of all existing systems over 250 kW needs to be completed by 4 January 2010.</td>
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<tr>
<td></td>
<td>First inspection of all existing systems over 12 kW needs to be completed by 4 January 2011.</td>
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<td></td>
<td>Only members of protocol organisations may produce EPCs for existing buildings. A list of the organisations who have signed protocols is available on <a href="http://www.sbsa.gov.uk/european_issues/epcprotocols.htm">www.sbsa.gov.uk/european_issues/epcprotocols.htm</a></td>
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Towards an Energy Efficient European Building Stock
EU Public Affairs

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Northern Ireland

Certification is being phased in as follows:
- **Existing residential buildings** for sale as of 30 June 2008
- **Newly constructed buildings** as of 30 September 2008
- **Existing non-residential buildings** for sale; all rental buildings; Display EPC’s as of 30 December 2008

All certificates must be logged in a central, government approved, database.

Additional Sources:
www.bre.co.uk | www.buildingsplatform.eu
RICS (Royal Institution of Chartered Surveyors) is the leading organisation of its kind in the world for professionals in property, land, construction and related environmental issues. As part of our role we help to set, maintain and regulate standards – as well as providing impartial advice to Governments and policymakers. RICS has 140 000 members who operate out of 146 countries, supported by an extensive network of regional offices located in every continent around the world.

To ensure that our members are able to provide the quality of advice and level of integrity required by the market, RICS qualifications are only awarded to individuals who meet the most rigorous requirements for both education and experience and who are prepared to maintain high standards in the public interest. With this in mind it’s perhaps not surprising that the letters RICS represent the mark of property professionalism worldwide.