



The slide features a white background with a blue border. In the top left corner, there is a logo for 'intense energy efficiency' with a green checkmark. The word 'Legislation' is centered in a large blue font. In the bottom left corner, there is text: 'D.Indriksone, BEF LV' and 'J.Balint, REC, Oct. 2010'. In the bottom center, it says 'Electronical handbook'. In the bottom right corner, there is a logo for 'INTELLIGENT ENERGY EUROPE' with a blue globe icon and the European Union flag.

## Introduction

Legislation is the main tool applied for many purposes: to regulate, authorize, proscribe, provide (funds), sanction, grant, declare or to restrict. The “Legislation” module is included in the training program because legislation sets the common ground for all activities performed in countries.

For the European policy development, transposition, implementation and enforcement three different levels are important: the European, the national and the regional/municipal level. Once the legal act is adopted at the EU level, the MS are responsible for transposition the provisions into their national legislation and they must ensure that these are effectively applied in practice. For stakeholders at national and local level the most important is national legislation. Nevertheless, local level stakeholders (e.g., architects, engineers, craftsmen, territorial planners) shall be informed about recent provisions adopted by the European Parliament and the Council even if these are not yet transposed into the national legislation.

The following slides reflect the main targets set by the EU Energy and climate change policy as well as the most recent developments in the EU legislation related to buildings, energy end-use and use of renewable energy sources. In the course of presentation it is essential to link this information to the provisions of national legislation.



Legislation

### Contents

1. Energy performance of buildings
2. Energy end-use efficiency
3. Use of renewable energy sources



2

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



The content of the module is divided into three steps. It covers the main provisions of legislation derived from the EU directives related to:

1. Energy performance of buildings
2. Energy end-use efficiency
3. Use of renewable energy sources

### Connection to other themes:

Building physics, system engineering, energy carriers, settlement planning, cost benefit assessment, quality control (in the frame of the project's purpose)

### Background

- **Directive on energy performance of buildings 2010/31/EU**  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0013:0035:EN:PDF>
- **Directive on energy end-use efficiency 2006/32/EC**  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:114:0064:0064:en:pdf>
- **Directive on promotion the use of energy from renewable sources 2009/28/EC**  
<http://www.energy.eu/directives/pro-re.pdf>
- **Energy efficiency of buildings: glossary of terms in English and 12 national languages**  
<http://www.intense-energy.eu/you-are/a-professional>

intense  
energy efficiency

Legislation

### EU ENERGY and CLIMATE CHANGE POLICY

**Targets to be achieved in the EU by the year 2020:**

- 20% reduction of greenhouse gas emissions of 1990 levels
- 20% reduction of energy consumption by increasing energy efficiency
- 20% share of energy from renewable sources in energy consumption

**The building sector is responsible for:**

- 40% of EU's energy use
- 36% of EU's CO<sub>2</sub> emissions



3

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook

INTELLIGENT ENERGY  
EUROPE

In 2000 the EC launched the European Climate Change Programme to identify cost effective measures for reducing Greenhouse gas (GHG) emissions. A major step of the EU energy and climate strategy is the EU Climate and Energy Package adopted in 2008, where several targets to be reached by 2020 were agreed upon:

- reduction of GHG by at least 20% of 1990 levels
- increase energy efficiency by 20%
- increase the share of RE in energy consumption to an average of 20%

It is widely known that most existing buildings are energy intensive; within EU they are responsible for ~40% of EU energy consumption and 36% of EU CO<sub>2</sub> emissions thus energy efficiency in the building sector will be crucial to reach GHG reduction targets.

### Connection to other themes

Energy carriers, settlement planning, building physics, system engineering

### Background

There is high evidence that human induced climate change is happening. The accelerated melting of ice and snow, the increase in average temperature and sea level, the abundance of extreme weather conditions like temperature increase, heat waves, storms, floods and increased precipitation are all the effects, symptoms of climate change. EU is a frontrunner in taking actions to mitigate the climate change effects.

### Suggestions for presentation

Present national targets for energy efficiency, GHG reduction, use of RES and the relevant strategies, guidelines, national/regional/local action plans etc.



Legislation

### Energy performance of buildings directive

**Promotes the improvement of the energy performance of buildings, taking into account climatic, local conditions & cost effectiveness.**

**Directive 2002/91/EC / 2010/31/EU on the energy performance of buildings (EPBD) prescribes:**

- **A methodology to calculate and rate energy performance;**
- **Minimum energy performance requirements for new / existing buildings that undergo major renovation;**
- **Energy performance certificates;**
- **Regular inspection of heating and air-conditioning systems.**

4

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



The common approach to increase the EE of buildings envisaged by the EC is very challenging. By having adopted the Directive 2002/91/EC (EPBD) and its recast in May 2010 (Directive 2010/31/EU), the EU aims at promoting the improvement of the energy performance of buildings, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost effectiveness. Major issues are:

- Introduction of methodology for calculating energy performance of buildings and building units
- Setting, applying and regularly updating minimum requirements to the energy performance of new and existing buildings subject to major renovation
- Energy certification system for new and existing buildings, and for public buildings, where certificates should be displayed in a visible place
- Regular inspection of heating and air-conditioning systems

### Connection to other themes:

Quality control, building physics, system engineering

### Background

EPBD and its proper implementation is crucial in achieving EU targets - 20% GHG emission reduction and 20% increase of EE. Besides that, EPBD is important in improving our energy security and in creating jobs especially in the building sector.

### Suggestions for presentation

Name the main national legal acts related to energy performance of buildings derived from EPBD, point out the role of municipalities.



Legislation

### EPBD recast – improving effectiveness

**EPBD recast 2010/31/EU entered into force on 8 July 2010**

- Principles of original EPBD requirements are kept for continuity – but clarified and improved
- Provides only framework – gives possibility to MS to adjust implementation to regional /local circumstances
- Offers holistic approach towards more energy efficient buildings
- Public authorities should play the leading role in the field of energy performance of buildings

**To be transposed in national legislation by July 2012**

5

D.Indriksons, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



During the transposition and implementation of the EPBD, EC became aware that some of the provisions and requirements set in the EPBD should be cleared and energy performance requirements should be strengthened. To achieve this, a new version of EPBD, the **EPBD recast** was adopted in May 2010 and MS are requested to transpose the requirements into national legislation by July 2012.

In general principles of the original EPBD requirements are kept for continuity, but clarified and improved. As common, the Directive sets the framework only, thus there is a possibility for MS to adjust implementation to regional /local circumstances. The new Directive offers holistic approach towards more energy efficient buildings. Important aspect – public authorities should play the leading role in the field of energy performance of buildings.

#### Connection to other themes:

Building physics, system engineering, energy carriers, settlement planning

#### Suggestions for presentation

Introduce plans to transpose EPBD recast in national legislation; action plans of cities having signed the Covenant of Mayors – where more stringent local policies / targets/ standards might have been introduced supporting EPBD recast. More info about the Covenant of Mayors at: <http://www.eumayors.eu>.

intense  
energy efficiency

Legislation

### EPBD recast – main changes I

- **Application of minimum performance requirements to all existing buildings (“1000 m<sup>2</sup>” threshold deleted!) when undergoing major renovations.**
- **Requirement to lay down min. energy performance levels for technical building systems and building elements when installed, replaced or upgraded.**
- **Level of minimum energy performance requirements for new buildings and renovations: benchmarking to achieve cost-optimal levels.**

6

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook

INTELLIGENT ENERGY  
EUROPE

The EPBD recast strengthens several provisions and requirements. Main points of the Directive and differences compared to the previous EPBD are the following:

- MS shall take the necessary measures to ensure that **all existing buildings** that undergo an energy relevant renovation meet minimum energy performance requirements (**the 1000m<sup>2</sup> threshold for major renovation has been deleted**) in so far as this is technically, functionally and economically feasible.
- Requirement to lay down minimum energy performance levels shall be applied to the renovated building or building unit as a whole. Additionally or alternatively, requirements may be applied to the renovated **building elements**.
- MS shall take the necessary measures to ensure that minimum energy performance requirements for buildings or building units are set with a view to achieving cost-optimal levels. ‘Cost-optimal level’ means the energy performance level which leads to the lowest cost during the estimated economic lifecycle. The Commission shall establish by 30 June 2011 a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements.

### Suggestions for presentation

Present national legal requirements for setting minimum energy performance requirements, calculation method of the energy performance of buildings.

 Legislation

### EPBD recast – main changes II

**MS shall ensure that:**

- **by 31 December 2020, all new buildings are nearly zero-energy buildings (very high energy performance);**
- **after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings.**

**Remaining energy needs to be mainly covered by RES produced by the building or nearby.**



7

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



The Directive envisages new provisions particularly for new buildings:

- All buildings built after 31 December 2020 must be 'nearly zero' energy buildings;
- Public authorities shall play an exemplary role and will have to ensure that all new buildings they own or rent - after 31 December 2018 meet the near-zero-energy standard.

'Nearly zero-energy building' means a building that has a very high energy performance and the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, produced on-site or nearby.

### Connection to other themes:

Energy carriers, building physics, system engineering

### Suggestions for presentation

Present / discuss national legislation, methodology (if already available) for calculation of the cost-optimal levels, provisions for new and existing buildings

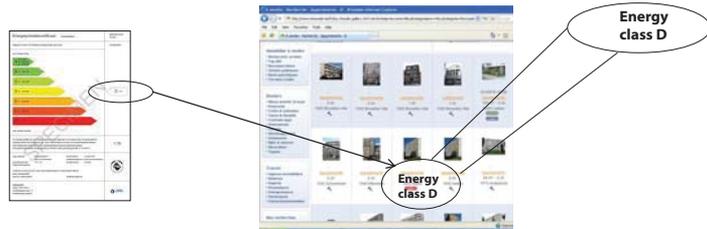
Discuss national system of penalties of non-compliance (if any) in case of not meeting minimum energy performance standards.



Legislation

### EPBD recast – main changes III

- **Strengthens the role and the quality of energy performance certificates (EPC) by:**
  - **display of EPC in public buildings > 500m<sup>2</sup>; 250m<sup>2</sup> after 5 years**
  - **quality checks and obligatory use of the performance indicator in all advertisements for sale or rent**



Source: Martin Elsberger, EC DG TREN

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



A more detailed and rigorous procedure for issuing **energy performance certificates** (EPC) will be required in MS, and a control system should be introduced to check the correctness of the certificates. MS will have to ensure that energy performance certificates are issued for any building constructed, sold or rented out to a new tenant, and also for buildings where a total useful floor area over **500 m<sup>2</sup>** (**1000 m<sup>2</sup> threshold has been deleted**) is occupied by a public authority and frequently visited by the public. Since July 2015 this threshold will be lowered to 250 m<sup>2</sup>. Energy certificates shall be displayed in a prominent place clearly visible to the public. The validity of the certificate – 10 years (provision has remained the same).

### Suggestions for presentation

Present requirements for the energy performance certification in the country – who can make energy audits, issue certificates, how to become certified energy auditor. Provide information / register of certified specialists e.g., energy auditors. Give good practice examples from your country where EPC has been displayed. Discuss with participants the main challenges related to practical implementation of EPC.

intense  
energy efficiency

Legislation

### EPBD recast – main changes IV

- **Strengthening the quality of HVAC inspections**
- **Stimulating financing mechanisms for energy efficiency investments in the building sector**
- **Encouraging introduction of intelligent metering systems**



Source: SIA "MESA Latvia"

9

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook

INTELLIGENT ENERGY  
EUROPE

Additionally Member States have to:

- strengthen the **quality of inspection** of heating and air-conditioning systems;
- draw up national plans for increasing the number of nearly zero energy buildings and by mid-2011, make a list of **financial and other incentives** for the transition, such as technical assistance, subsidies, loan schemes and low interest loans;
- encourage the introduction of **intelligent metering systems** whenever a building is constructed or undergoes major renovation.

MS will be required to introduce penalties for non-compliance with the provisions of the Directive

### Connection to other themes:

System engineering, quality control

### Suggestions for presentation

Name national requirements for inspection of heating, air conditioning systems, requirements for reports from inspection, requirements for metering, informative billing of energy consumption. Discuss current experiences with introduction of individual heat consumption metering systems (e.g., heat cost allocators) in the country, successes and challenges. Introduce the EU/national/local funds available supporting implementation of energy efficiency measures e.g., Green Investment scheme.



Legislation

---

**Energy end-use efficiency and energy services directive 2006/32/EC**

**Adopted in April 2006 → transposition by May 2008**

- **Seeks to increase energy efficiency all along the supply chain up to the retail stage when energy is sold to the end-user;**
- **Covers all forms of energy: electricity, natural gas, liquid fuels (except aviation fuels).**
- **The main target groups:**
  - providers of energy efficiency improvement measures
  - energy distributors
  - distribution system operators
  - retail energy sales companies
  - final customers

---

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



The Directive 2006/32/EC aims at enhancing the cost-effective improvement of energy end-use efficiency in the EU. MS have to:

- set minimum energy saving targets of 9% to be achieved between 2008-2016;
- prepare national energy efficiency action plans [by 2007, 2011 and 2014](#);
- provide mechanisms, incentives and institutional, financial and legal frameworks to remove existing market barriers and imperfections that impede the efficient end use of energy;
- create the conditions for the development and promotion of a market for energy services and for the delivery of other energy efficiency improvement measures to final consumers.

### Connection to other themes:

Cost benefit assessment, system engineering, energy carriers

### Background

The Directive contributes to improved security of supply, reduction of primary energy consumption and related mitigation of GHG emissions.

### Suggestions for presentation

Name the relevant national legal acts transposing the Directive.



Legislation

---

**Energy end-use efficiency and energy services directive 2006/32/EC**

- **Exemplary role of local authorities – “shining examples”:**
  - **implement cost-effective energy efficiency measures with regard to e.g., insulation, HVAC, lighting, use of RES**
  - **initiate energy-efficiency pilot projects and stimulate energy-efficient behaviour of employees**
  - **incorporate energy efficiency aspects in public procurements - energy efficient products, equipments, vehicles, buildings**
  - **exchange of information, experience and best practice**
  - **Initiate usage of different financing schemes, e.g., third party financing or energy performance contracts**
  - **inform citizens/companies emphasizing the cost benefits**

11

---

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



According to the Directive, public sector (including local authorities) shall fulfill the exemplary role in energy efficiency activities. It should set a good example regarding investments, maintenance and other expenditure on energy-using equipment, energy services and other energy efficiency improvement measures. There is a large variety of ways in which the public sector can be “the shining example”.

### Connection to other themes:

Cost benefit assessment, system engineering, energy carriers

### Suggestions for presentation

Indicate how the role of local governments is highlighted in national legislation, what are specific requirements. Provide good examples of local authorities undertaking the exemplary role in the country.



Legislation

ESD 2006/32/EC

**Other important aspects MS shall ensure:**

- **Competitively priced individual meters that reflect consumer's actual energy consumption**
- **Clearly measured, verified or estimated energy savings**
- **Availability of efficient, high-quality energy audit schemes**

12

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



There are also other important provisions set by the Directive. MS shall ensure:

- that final customers for electricity, natural gas, district heating and/or cooling and domestic hot water are provided with competitively priced **individual meters** that accurately reflect the final customer's actual energy consumption. Cost benefit aspects have to be considered.
- energy efficiency improvement measures must result in **energy savings** that can be **clearly measured, verified or estimated**. The Directive gives framework for the measurement and verification of energy savings
- availability of efficient, high-quality **energy audit schemes** which are designed to identify potential energy efficiency improvement measures, and which are carried out in an independent manner, to all final consumers, including smaller domestic, commercial and small and medium-sized industrial customers.

### Connection to other themes:

Cost benefit assessment, system engineering

### Suggestions for presentation

Name national requirements for data collection, measurement and verification of energy savings, provisions for energy audits in the country, pricing for energy audits.



Legislation

---

**Directive on promotion the use of energy from RES 2009/28/EC**

**Sets mandatory national targets for share of RES**

**With regard to building codes, MS have to:**

- **set minimum levels of energy from RES in new/ existing buildings subject to major renovation;**
- **ensure that public buildings (new/undergoing major renovation) play an exemplary role in use of RES;**
- **promote use of renewable HVAC, heat pumps;**
- **encourage biomass conversion technologies with  $\geq 70-85\%$  efficiency**



D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



The Directive establishes a common framework for the promotion of energy from renewable sources (RES). It sets **mandatory national targets** for the overall share of energy from RES in gross final consumption of energy by 2020 (reference year 2005). E.g., for Latvia the 2020 target is 40% (32.6% in 2005). MS shall adopt a national energy action plan, set national targets for the share of energy from RES in different sectors. It sets certain provisions that can influence national building codes. MS are required:

- by 31.12.2014, to set where appropriate **minimum levels of energy from RES** (i.a. through district heating, cooling) in new buildings and existing buildings subject to major renovation;
- to ensure that after 01.01.2012 **new public buildings play an exemplary role** in use of RES (also existing public buildings undergoing major renovation);
- to promote **use of renewable heating and cooling systems** as well as systems that lead to a significant reduction in energy consumption;
- to promote **use of heat pumps** that meet the minimum requirements fulfilling the minimum requirements of eco-labelling;
- to encourage **biomass conversion technologies** with at least 85% efficiency for commercial and residential applications and 70% for industrial applications.

### Connection to other themes:

System engineering, energy carriers

### Suggestions for presentation

Check national renewable energy action plans, legislation, building codes, if there are particular targets related to construction. Give good practice examples of municipalities using RES in micro-energy generation.



Legislation

### RES Directive in relation to information & training

**MS have to ensure availability of:**

- **Certification and qualification schemes for installers of e.g. solar photovoltaic, thermal systems, heat pumps**
- **Information on support measures; net benefits, cost and energy efficiency of equipment using RES; certification schemes, lists of qualified and certified installers**
- **Guidance to e.g., planners, architects to properly consider use of RES for territorial planning or building design**

**MS shall provide either priority access or guaranteed access to the grid-system of electricity produced from renewable energy sources**

14

D.Indriksone, BEF LV  
J.Balint, REC, Oct. 2010

Electronical handbook



In relation to information and training MS have to ensure that **certification or qualification schemes** are available by 31.12.2012 for installers of small scale biomass boilers and stoves, solar photovoltaic, solar thermal systems, shallow geo-thermal systems, heat pumps. MS also have to make **available information** on support measures to relevant actors e.g., builders, installers, architects, suppliers of RES equipment; net benefits, cost and energy efficiency of equipment using RES for heating, cooling and electricity generation; certification schemes, lists of qualified and certified installers. Also **guidance** has to be available to all relevant actors, notably for planners and architects so that they are able properly to consider the optimal combination of renewable energy sources, of high-efficiency technologies and of district heating and cooling when planning, designing, building and renovating industrial or residential areas. MS shall provide for either **priority access** or **guaranteed access** to the grid-system of electricity produced from renewable energy sources.

#### Connection to other themes:

System engineering, energy carriers

#### Suggestions for presentation

Check if any support schemes, guidance in the country are available for use of RES in micro-generation, lists of certified installers, requirements for certification and qualification. Check national legislation for opportunities to sell energy from RES to grid. Check national renewable energy action plan for additional information.