



European
Commission



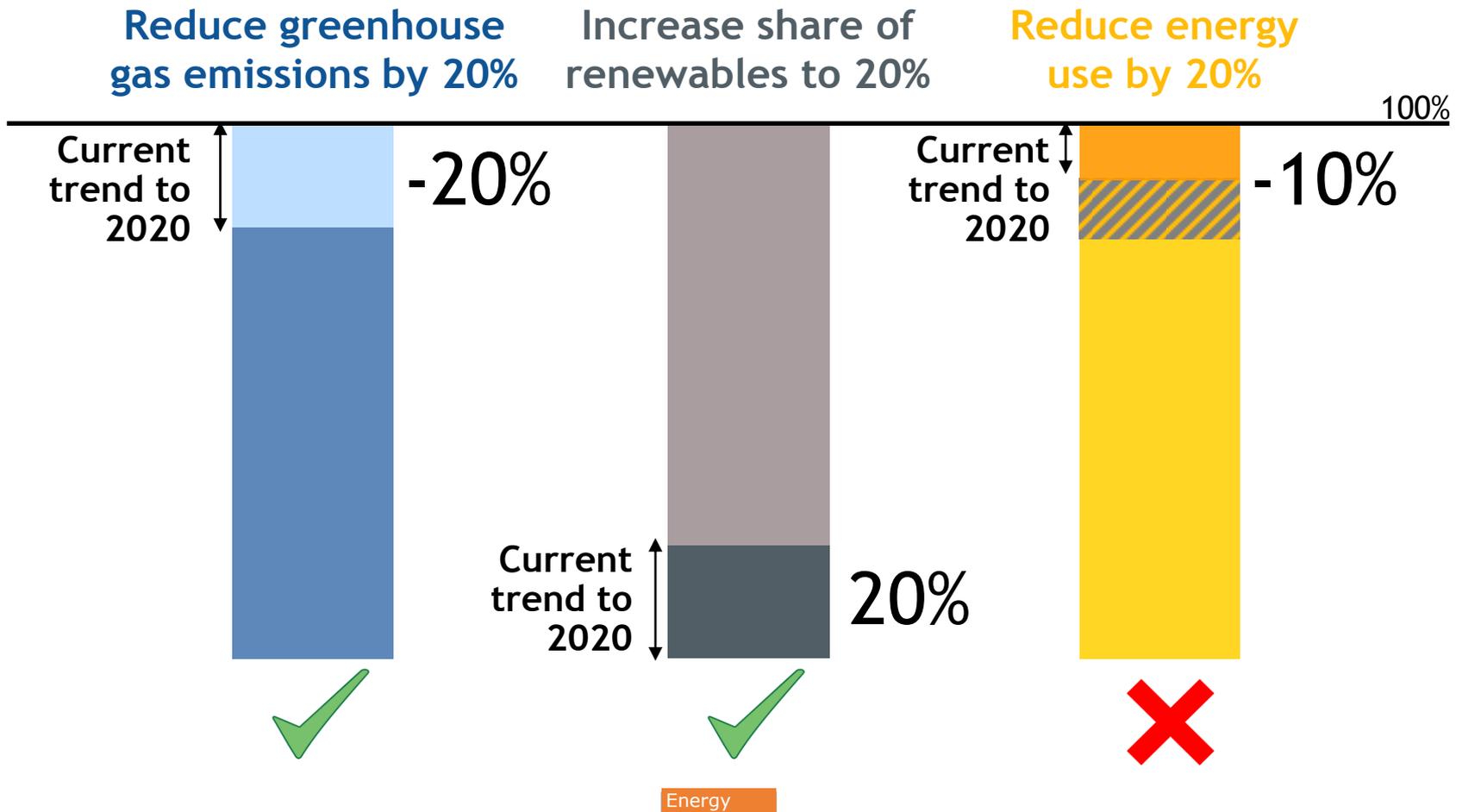
EU policies on energy efficiency

**REHVA Annual Conference
Timisoara, 19-20 April 2012**

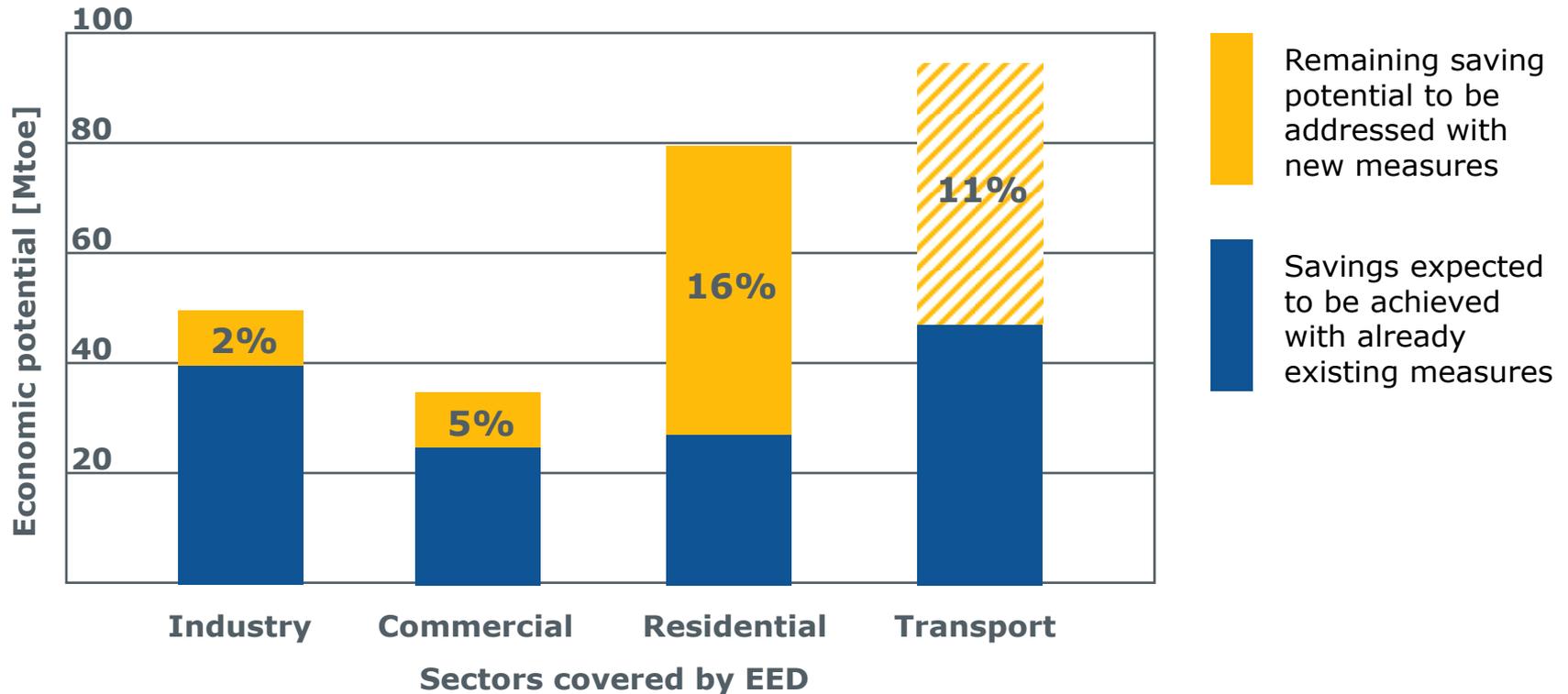
*Directorate General for Energy
Unit C3, Energy efficiency*

Clemens Haury, Dipl.-Ing. Arch.

The EU 20-20-20 targets by 2020



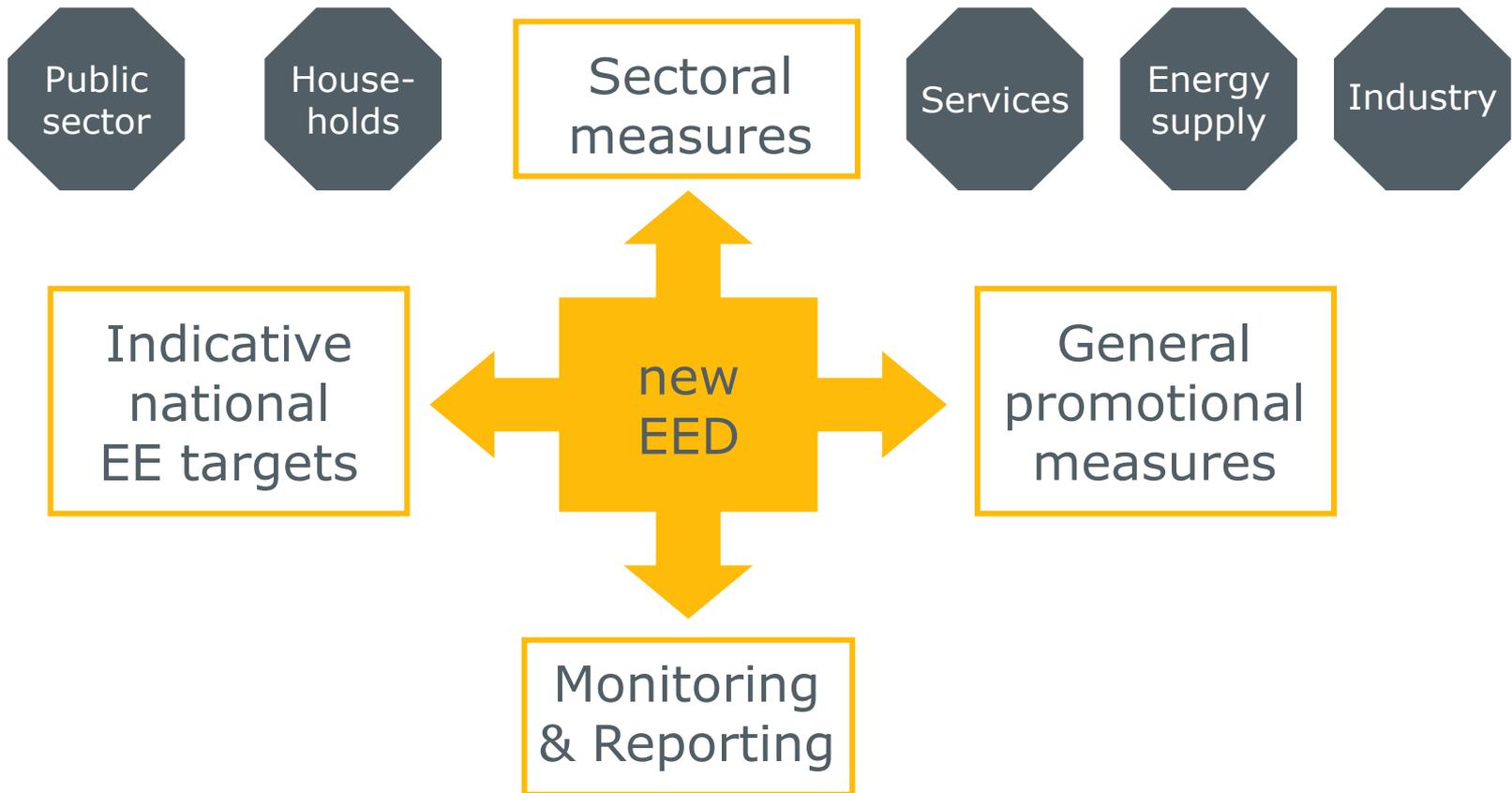
Despite untapped savings potentials across all major sectors



Energy efficiency policy–main instruments

- **Proposal for Energy Efficiency Directive**
 - of June 2011 (integrating Energy Service Directive 2006/32/EC and CHP Directive 2004/8/EC)
- **Ecodesign Directive 2009/125/EC**
- **Energy Labelling Directive 2010/30/EU**
- **Energy Performance of Buildings Directive 2010/31/EU**
- **Energy Star programme for office equipment**
- **Ecolabel Regulation (EC) No 2009/888**

A new Energy Efficiency Directive



Main elements of the EED proposal

- **2-step approach regarding targets**
- **Increased role of the public sector**
- **Energy efficiency obligation schemes or alternative approaches to be set by MS**
- **Accurate and frequent individual metering / billing**
- **Mandatory energy audits for large companies and promotion of audits for households and SMEs**
- **Heat and cooling demand plans**
- **Strong obligations for CHP**
- **Energy efficiency to be taken into account in setting network tariffs and regulations**

Ecodesign Directive 2009/125/EC

Main legal instrument for energy-related products:

- Review in 2012
- Exemption for the automotive sector regulated in the type-approval legislation

Framework Directive:

- Implementing measures, or
- Voluntary agreements

Implementing measures for products with:

- Significant environmental aspects, potential for improvement, trade and sales volume

Based on Life-cycle approach

Ecodesign Directive 2009/125/EC

Energy labelling Directive 2010/30/EU

Adopted - ED	Adopted - EL	Foreseen to be adopted 2012 – ED	Foreseen to be adopted 2012 - EL
Air-co + comfort fans	Air-co	Tumble driers	Tumble driers
Household refrigerators	Household refrigerators	Heaters	Heaters
Industrial motors		Water heaters	Water heaters
Freezers	Freezers	Domestic lighting	Domestic lighting
Dish- and washing machines	Dish- and washing machines	Water Pumps	
Televisions			
Industrial fans			
Lighting products	Lighting products		
External power supplies			
Stand-by and off mode of household equipment			

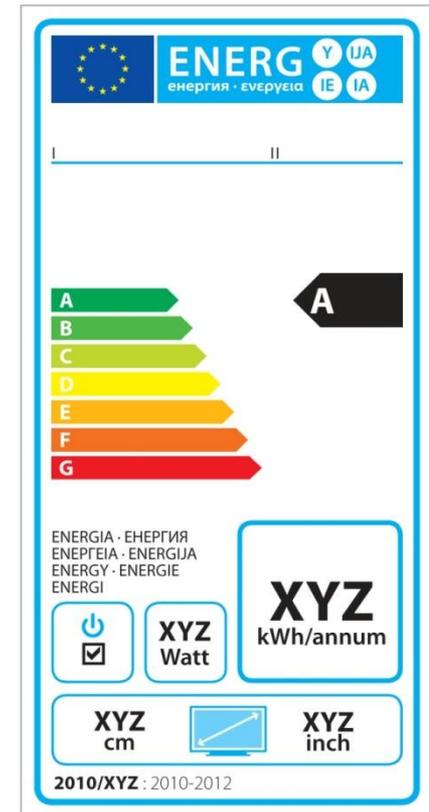
Ecodesign Directive 2009/125/EC

- **Examples of some adopted implementing measures:**
- **Total (333 TWh) → savings correspond approx. to the electricity consumption of the UK**
- **Workplans: 2009-2011
2012-2014**

Product	Estimated savings (annual by 2020)
Standby	35 TWh
Simple set-top boxes	6 TWh
Street & Office lighting	38 TWh
External power supplies	9 TWh
Domestic lighting	37 TWh
Electric motors	135 TWh
Circulators	23 TWh
Freezers/refrigerators	6 TWg
Televisions	43 TWh
Total	333 TWh

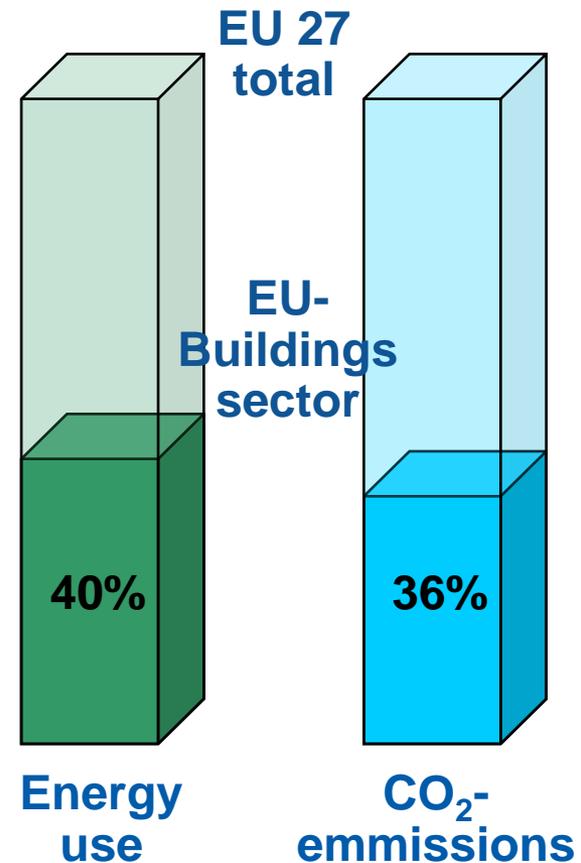
Energy Labelling Directive 2010/30/EU

- **Energy-related products (as in the revised Ecodesign Directive)**
- **Fiscal incentives and public procurement**
- **Simplification - delegated acts (Regulations) without Regulatory Committee vote**
- **Role for manufacturers, retailers, installers**
- **A-G and A+++-D scales**



Energy Performance of buildings

- **Directive 2002/91/EC was revised in 2010**
- **Directive 2010/31/EU on the energy performance of buildings (recast)**
- **Entry into force: July 2010**
- **Implementation by Member States two years after entry into force i.e. July 2012 (for most provisions)**



Key elements of the EPBD

- Framework Directive (principle of subsidiarity)
- Minimum energy performance requirements
- Energy Performance Certificates
- Inspection of heating and cooling systems
- Independency of experts
- Exemplary role of public sector

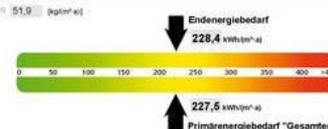
ENERGIEAUSWEIS für Wohngebäude

gemäß den §§ 16 ff. Energieeinsparverordnung (EnEV)

Berechneter Energiebedarf des Gebäudes 2

Energiebedarf

CO₂-Emissionen¹⁾ 51,9 (kg/m²·a)



Endenergiebedarf
228,4 kWh/m²·a

Primärenergiebedarf "Gesamteffizienz"
227,6 kWh/m²·a

Nachweis der Einhaltung des § 3 oder § 9 Abs. 1 EnEV²⁾

Primärenergiebedarf Gebäude im Wert	227,5 kWh/m ² ·a	Energetische Qualität des Gebäudes Gebäude im Wert ³⁾	1,30 W/m ² ·K
EnEV-Anforderungswert	113,4 kWh/m ² ·a	EnEV-Anforderungswert ⁴⁾	0,65 W/m ² ·K

Endenergiebedarf

Energieträger	Anteil am Endenergiebedarf in kWh/(m ² ·a) für Heizung	Wärmepumpe	Wärmestrom ⁵⁾	Gesamt in kWh/(m ² ·a)
Erdgas H	151,2	16,6	12,3	180,1
Strom	0,0	0,0	12,3	12,3
Holz-Pellets	40,1	6,2	0,0	46,3

Sonstige Angaben

Einsetzbarkeit alternativer Energieversorgungs-systeme

nach § 5 EnEV von Baubeginn geprüft

Alternativen Energieversorgungssysteme werden genutzt für:

Heizung Warmwasser

Lüftung Kühlung

Lüftungskonzept

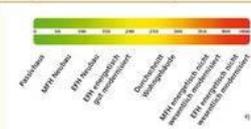
Die Lüftung erfolgt durch:

Einzel Lüftung Schieb Lüftung

Lüftungsjugale ohne Wärmerückgewinnung

Lüftungsjugale mit Wärmerückgewinnung

Vergleichswerte Endenergiebedarf

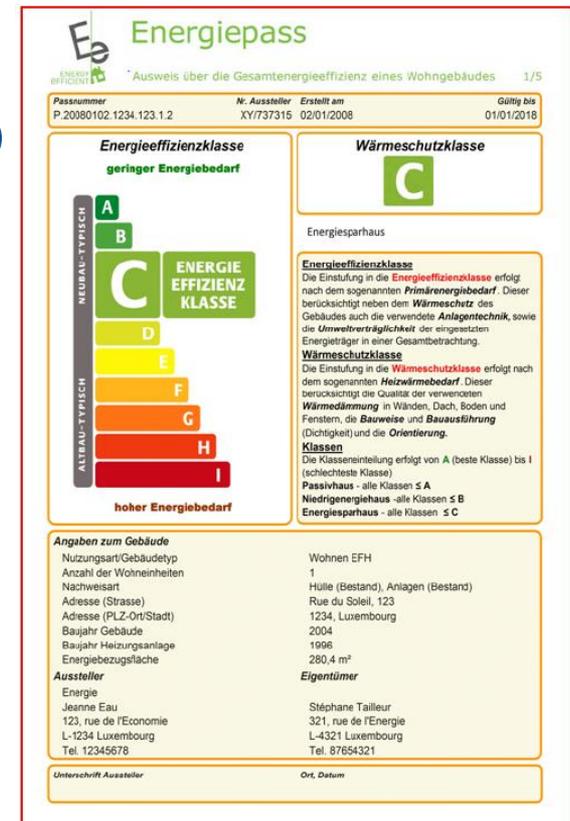


Erläuterungen zum Berechnungsverfahren

Das verwendete Berechnungsverfahren ist durch die Energieeinsparverordnung vorgegeben. Insbesondere wegen standardisierter Angaben liegen erzielbare Energieeffizienzwerte keine Rolle auf der Darstellung des Energieverbrauches. Die angegebenen Bedarfswerte sind spezifische Werte nach der EnEV pro Quadratmeter Gebäudenutzfläche (A_n).

New in the recast EPBD

- Introduction of “nearly zero-energy buildings” by 2021/2019
- “Cost-optimal methodology”
- Extension of minimum requirements to ALL buildings but no obligation to renovate
- Strengthening of Energy Performance Certificates and Inspections
- Requirements for technical building systems in existing buildings, optional for new



Energiepass
Ausweis über die Gesamtenergieeffizienz eines Wohngebäudes 1/5

Passnummer: P.20080102.1234.123.1.2 N. Aussteller: XY/737315 Erstellt am: 02/01/2008 Gültig bis: 01/01/2018

<p>Energieeffizienzklasse geringer Energiebedarf</p> <p>NEUTRAL-TYPISCH</p> <p>A B C D E F G H I</p> <p>ALTBAU-TYPISCH</p> <p>hoher Energiebedarf</p> <p>ENERGIE EFFIZIENZ KLASSE</p>	<p>Wärmeschutzklasse</p> <p>C</p> <p>Energiesparhaus</p> <p>Energieeffizienzklasse Die Einstufung in die Energieeffizienzklasse erfolgt nach dem sogenannten Primärenergiebedarf. Dieser berücksichtigt neben dem Wärmeschutz des Gebäudes auch die verwendete Anlagentechnik, sowie die Umweltträglichkeit der eingesetzten Energieträger in einer Gesamtbetrachtung.</p> <p>Wärmeschutzklasse Die Einstufung in die Wärmeschutzklasse erfolgt nach dem sogenannten Heizwärmebedarf. Dieser berücksichtigt die Qualität der verwendeten Wärmedämmung in Wänden, Dach, Boden und Fenstern, die Bauweise und Bausausführung (Dichtigkeit) und die Orientierung.</p> <p>Klassen Die Klasseneinstellung erfolgt von A (beste Klasse) bis I (schlechteste Klasse)</p> <p>Passivhaus - alle Klassen ≤ A Niedrigenergiehaus - alle Klassen ≤ B Energiesparhaus - alle Klassen ≤ C</p>
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<p>Angaben zum Gebäude</p> <p>Nutzungsart/Gebäudetyp: Wohnen EFH Anzahl der Wohneinheiten: 1 Nachweisart: Hülle (Bestand), Anlagen (Bestand) Adresse (Strasse): Rue du Soleil, 123 Adresse (PLZ-Ort/Stadt): 1234, Luxembourg Baujahr Gebäude: 2004 Baujahr Heizungsanlage: 1996 Energiebezugsfläche: 280,4 m²</p> <p>Aussteller</p> <p>Energie Jeanine Eau 123, rue de l'Economie L-1234 Luxembourg Tel. 12345678</p>	<p>Wohnen EFH 1 Hülle (Bestand), Anlagen (Bestand) Rue du Soleil, 123 1234, Luxembourg 2004 1996 280,4 m²</p> <p>Eigentümer</p> <p>Stéphane Tailleux 321, rue de l'Énergie L-4321 Luxembourg Tel. 87654321</p>
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Unterschrift Aussteller Ort, Datum

“Nearly zero-energy buildings”

Article 9: Member States shall ensure, that

- **After 31 December 2018, new buildings occupied and owned by public authorities** are nearly zero-energy buildings, and;
- **After 31 December 2020 all new** buildings are nearly zero-energy buildings
- **MS shall develop national plans** for increasing the number of nearly zero-energy buildings including a detailed application of the definition in practice
- **MS shall develop policies and take measures** to stimulate refurbishments into nearly zero-energy buildings

Commission launched a study end of 2011

Commission study on NZEB

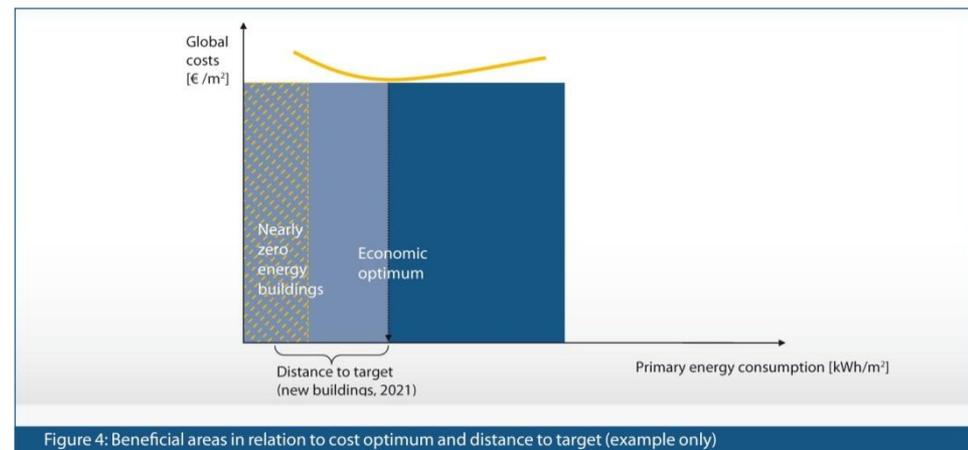
Towards nearly zero-energy buildings

- **Started end of 2011 (timeline: 12 months)**
- **Objectives:**
 1. Clarification of concepts in the definition;
 2. Facilitation of COM's monitoring and reporting tasks
 3. Develop benchmarks for nearly zero-energy buildings for different European climate zones
 4. Analysis of the differences, consistencies between and convergence of national cost-optimal levels and national nearly zero-energy buildings;

Cost optimal methodology

- **Framework on how to calculate cost-optimal minimum energy performance requirements**
- **Aim: Shift focus from upfront investment costs to life cycle costs**
- **Comparison of result with current requirements and adjust building codes if needed**

- **Adopted by Commission on 16 January 2012**
- **Act established with publication in OJ on 21 March 2012**



Financing energy efficiency in buildings

Cohesion policy funds (2007-2013):

- 4,6 billion € for energy efficiency

ELENA Facility:

- 97 million € for technical assistance to mobilise investments

European Energy Efficiency Fund (EEE-F):

- 265 million € for investments into mature, bankable efficiency/renewables projects
- 20 million € for technical assistance

Intelligent Energy Europe Programme (2007-2013):

- 735 million € for 'soft' energy efficiency/renewables projects

EU financial facilities in future

Next Multi-Annual Financial Framework (2014-2020) proposals:

- **Cohesion funding to allocate some 17 billion € to energy efficiency and renewable energy (doubling current allocations)**
- **Horizon 2020: 6.5 billion € is to be allocated to research and innovation in "Secure, clean and efficient energy"**

Energy policy beyond 2020

"Energy Roadmap 2050"

- **Published in December 2011**
- **Reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050**
- **Explore EU decarbonisation objective while ensuring security of supply and competitiveness**
- **Give more certainty to governments and investors**
- **Energy efficiency is a 'no-regrets' option**
- **Well-functioning energy markets are key**

Priorities on Energy efficiency

- **Adoption of the Energy efficiency Directive through EP and Council under Danish presidency**
- **Member States to transpose recast EPBD 2012/13**
- **Member States to develop national plans for NZEB**
- **Member States to develop policies / take measures to stimulate existing buildings to be NZEB**
- **Develop workforce skills, ideally through national strategies (e.g. "Build-UP Skills" IEE-Initiative)**
- **Deliver EE and RES technologies to the market**
- **Plan (financial) support measures to stimulate high efficient buildings and market development**
- **Ecodesign / Energy labelling: concentrate on measures that are currently in the pipeline**

Thank you for your attention



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DG Energy
http://ec.europa.eu/energy/efficiency/index_en.htm