REHVA Seminar

Updates on EU Policies on Energy Efficiency: The Reviews of EED and EPBD

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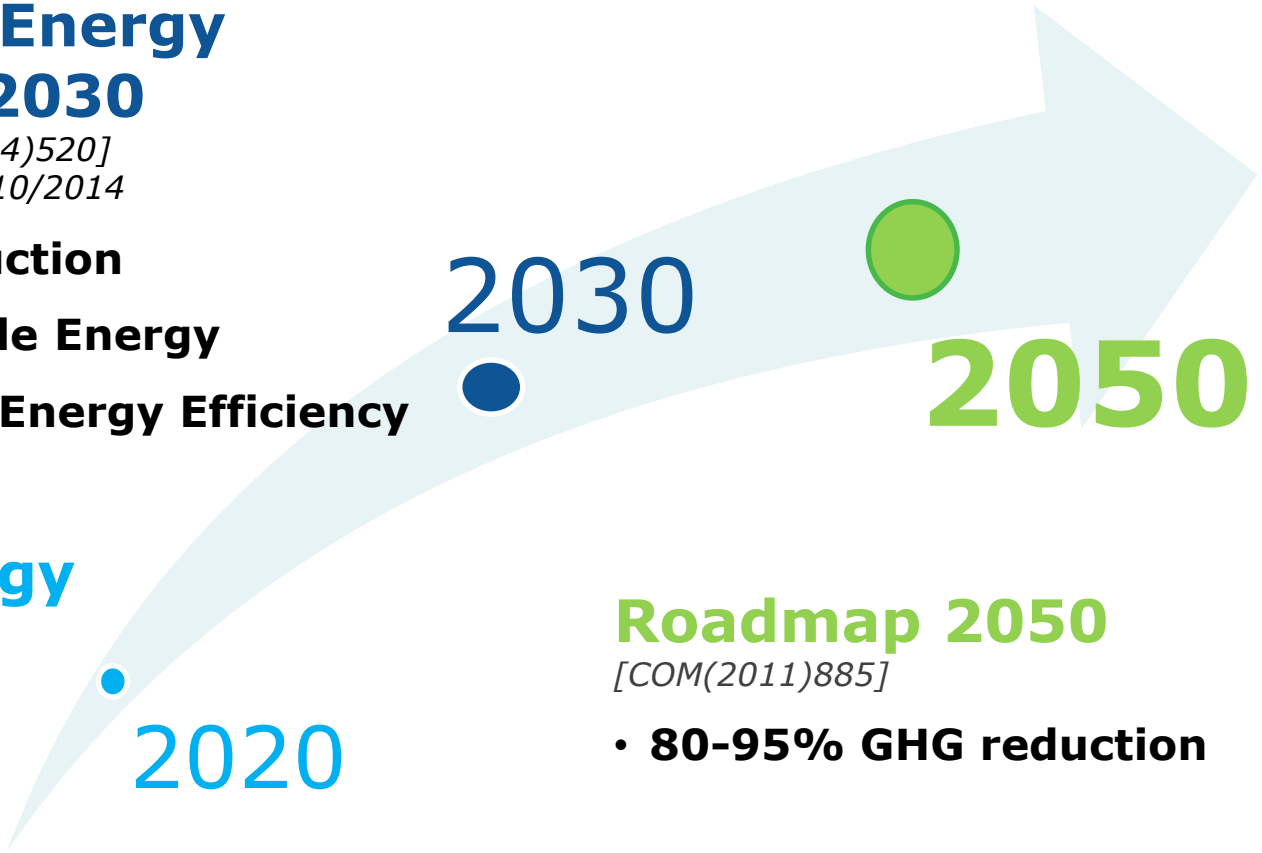
Climate and Energy Framework

Climate and Energy Framework 2030

[COM(2014)15&COM(2014)520]
European Council 23-24/10/2014

- **40% GHG reduction**
- **27% Renewable Energy**
- **27→[30%(?)] Energy Efficiency**



Climate and Energy Framework 2020

[COM(2010)639]

- **20% GHG reduction**
- **20% Renewable Energy**
- **20% Energy Efficiency**

Roadmap 2050

[COM(2011)885]

- **80-95% GHG reduction**

European Commission

Energy Union Strategy

5 GUIDING DIMENSIONS

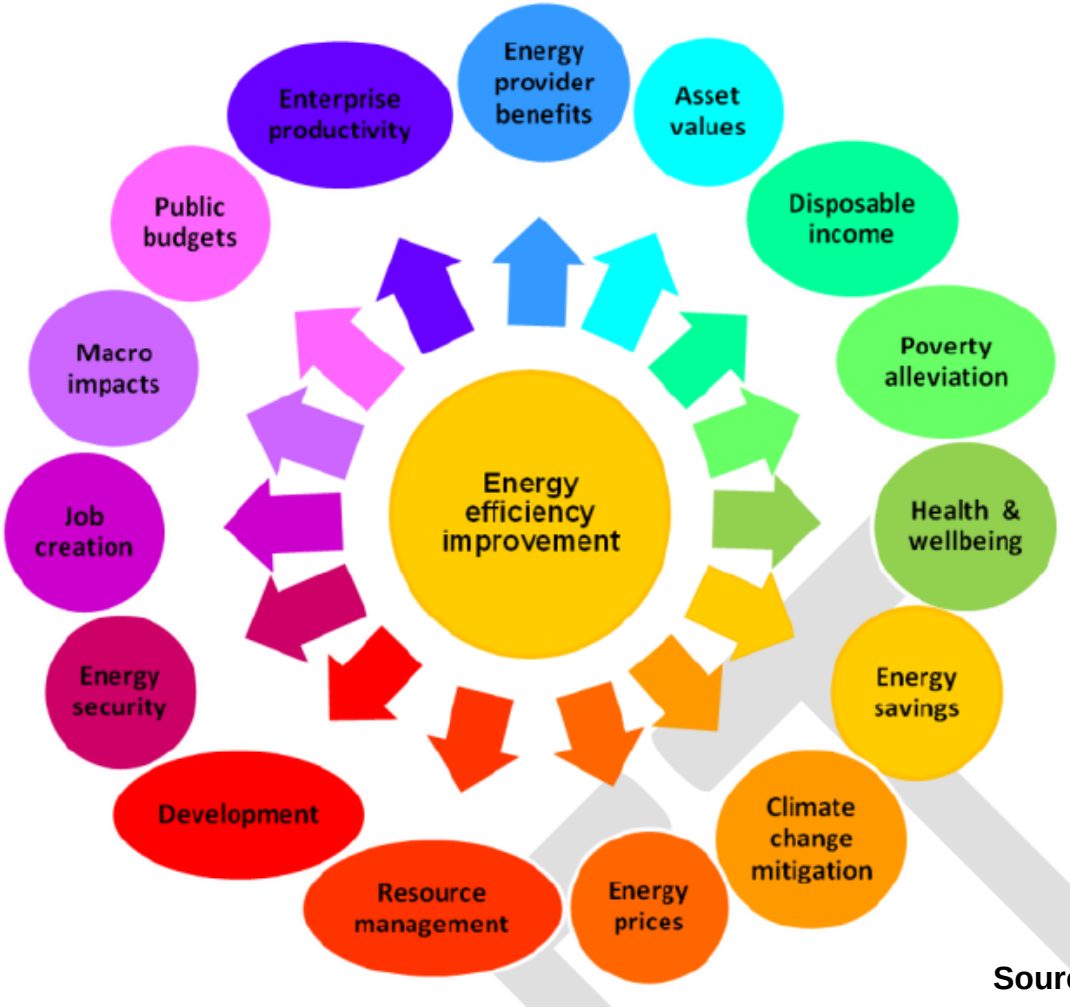
3 Energy Efficiency

Rethink energy efficiency as an energy source in its own right

This means increasing energy efficiency, in particular in the building sector, and promoting an energy-efficient and decarbonized transport sector as well as efficient products.

European Commission

Energy Efficiency



Source: IEA

EU Policy Framework for Energy Efficiency

Energy Efficiency
Directive 2012/27/EU

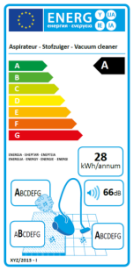
Energy Performance of Buildings
Directive 2010/31/EU

Ecodesign

Directive 2009/125/EC

Energy Labelling

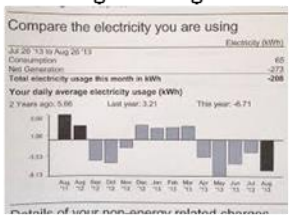
Directive 2010/30/EU



Financing Energy Efficiency

European Structural Investment Fund; Horizon 2020; LIFE + funding; European Fund for Strategic Investments; Member State programmes; etc.

Which policies tackle which problems?

Energy Efficiency Headline Target	Ensuring that new investments are energy efficient	Informing consumers & economic operators about energy efficient investments	Increasing the rate of investment	Research and innovation
EED Art 3 	Ecodesign  Building Requirements  Nearly Zero Energy Buildings 	Energy labeling   Energy Performance Certs Energy audit  Metering & Billing 	EED Art 7 – Energy efficiency obligation scheme seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND Financing (public & private) 	SET Plan 

European Commission

Market Failures Addressed by Energy Efficiency Policies

- Information failures;
- Split incentives;
- Short investment horizons, difficult to justify on economic grounds, in both firms and households;
- Lack of knowledge on the "business case behind EE investments";
- High transaction costs/small projects;
- Capital market failures; and
- Need for clear signals for companies to become actors in this new market.

Two Energy Union Packages

- Adopted on 18 November 2015.
- Three Communications: Energy Union, Road to Paris and Achieving 10% Electricity Interconnections.
- **The Report on the energy efficiency 20% 2020 target.**

- Adopted on 16 February 2016.
- One regulation on security of supply, one decision on gas inter-governmental agreements; one strategy on LNG.
- **The EU Strategy on Heating and Cooling.**

Report on Energy Efficiency

Article 24 (3) of the Energy Efficiency Directive

"The Commission shall evaluate the annual reports and the National Energy Efficiency Action Plans and assess the extent to which Member States have made progress towards the achievement of the national energy efficiency targets […]. Based on its assessment […] the Commission may issue recommendations to Member States."

Energy Union indicators – A first attempt

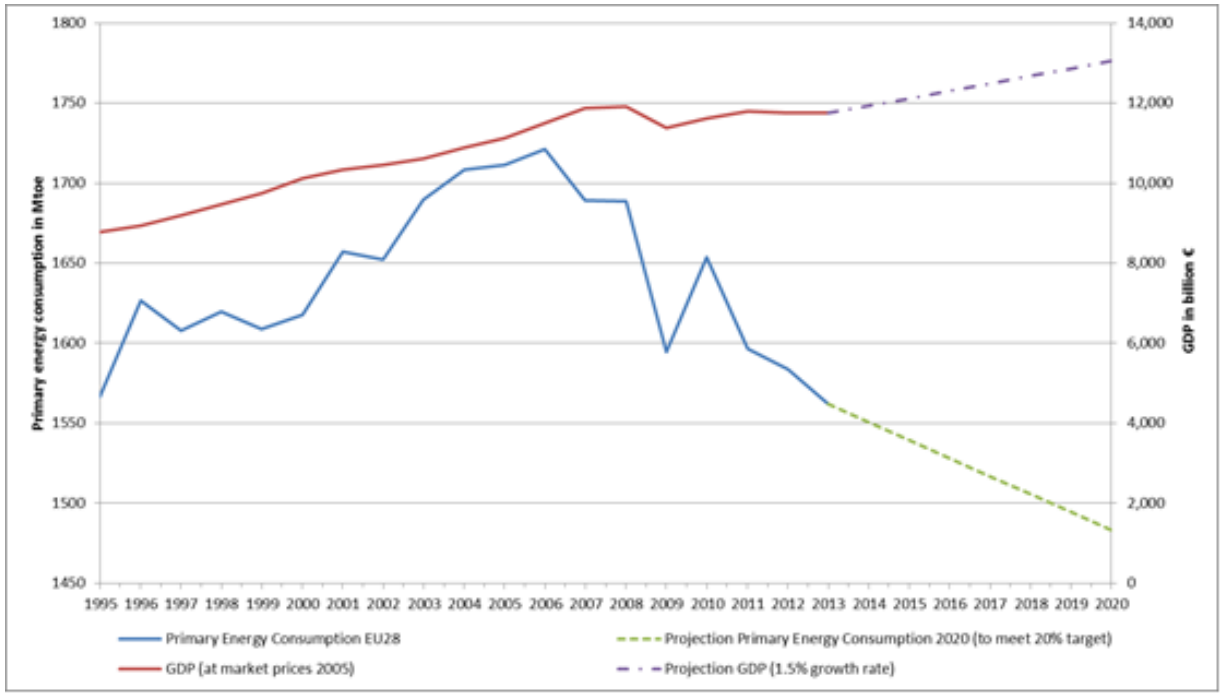
Energy security, solidarity and trust	Internal energy market	Energy efficiency and moderation of demand	Decarbonisation of the economy	Research, innovation and competitiveness
Import dependency	Electricity interconnection capacity	Primary energy consumption trends	Gap between trends in GHG emissions in the non-ETS sector and targets	Share of energy and environment in total public civil R&D spending
Energy import supplier concentration index	Market concentration on wholesale gas and electricity markets	Primary energy intensity of the economy	RES share in gross final energy consumption	Low-carbon technologies patents
N-1 rule - gas infrastructure	Wholesale electricity and gas prices	Final energy intensity in industry	GHG intensity of the economy	Real unit energy costs for manufacturing sector
	Switching rates on retail electricity and gas markets	Final energy consumption per m2 in residential sector		
	Energy poverty index	Average CO_2 emissions from new passenger cars		

Not a definitive list – an ongoing and evolving process in close cooperation with EU Member States.

State of play: Energy Efficiency

The energy efficiency of the EU economy is steadily increasing.

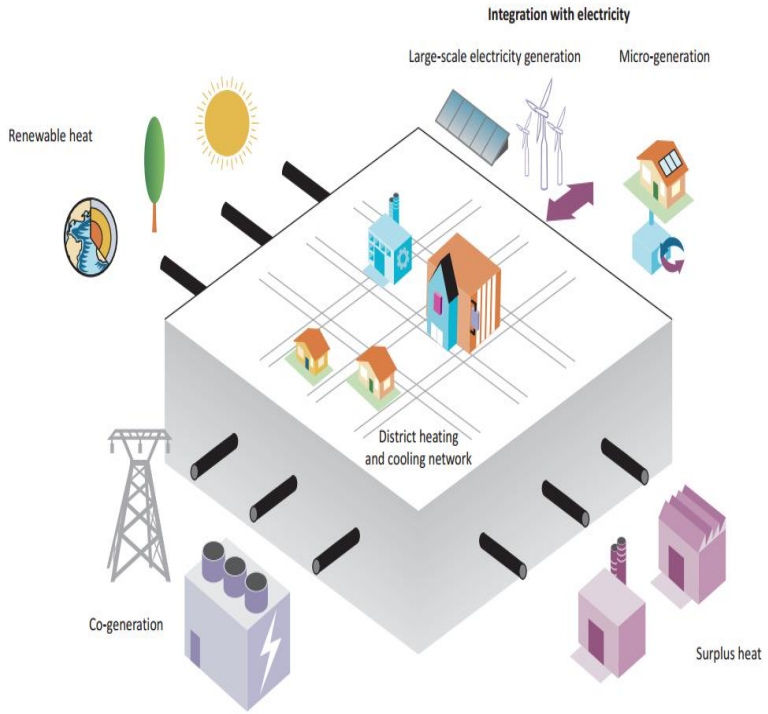
Economic growth is being decoupled from energy consumption.



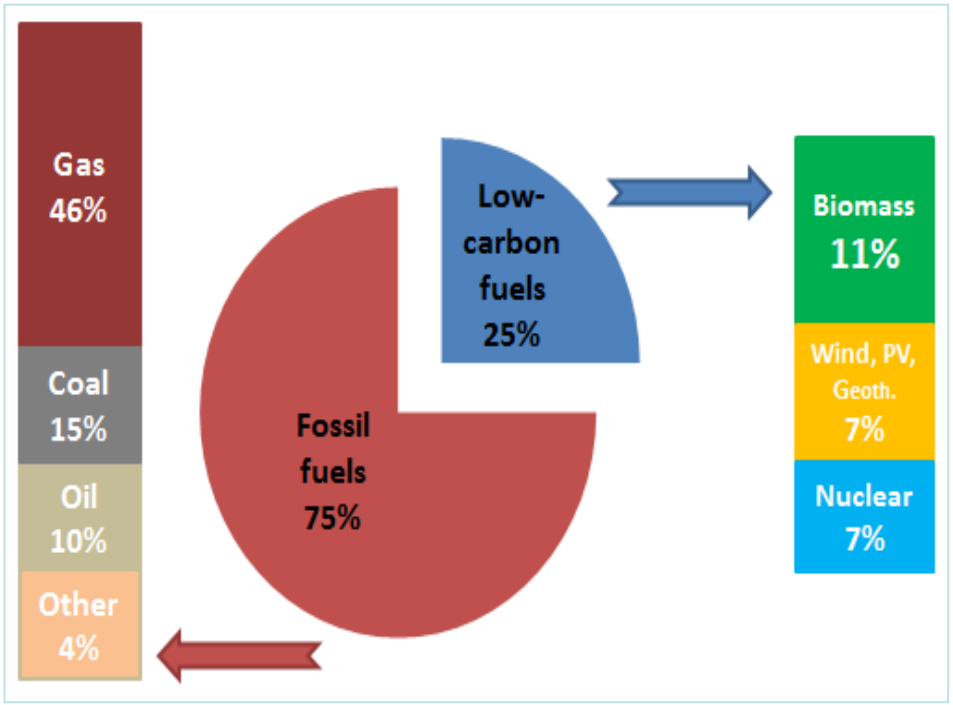
Source: Energy Efficiency Communication 2014 – COM(2014) 520

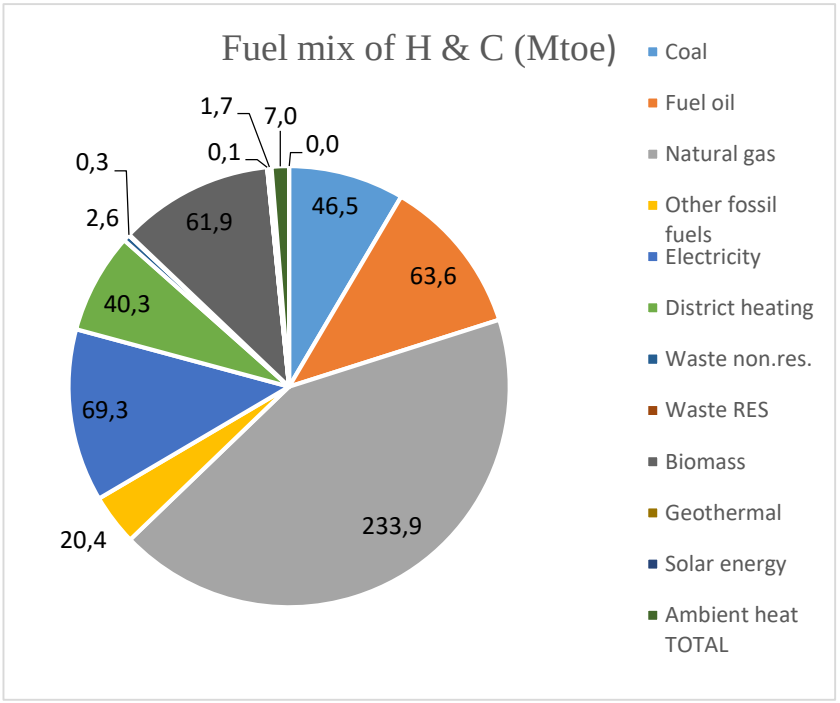
Why a Strategy for Heating and Cooling ?

- Poorly known, neglected, fragmented sector. No comprehensive/strategic overview.
- Largely inefficient: 75% of EU building stock is inefficient.
  - This EU Strategy is the first to describe heating and cooling comprehensively.
  - It outlines how to integrate heating and cooling into EU energy policies.



Heating and Cooling: 50% of EU's Final Energy Consumption (546 Mtoe in 2012)





Natural gas is the dominant fuel

Key focus

- Buildings (residential, tertiary) → renovation and deployment of efficient, sustainable supply (renewables, waste heat/cold).

- Industry (energy intensive sectors, all enterprises, SMEs) → energy efficiency and renewable energy, recovery of waste heat & cold.

Follow-up Actions

- Legislative reviews: EU Energy Efficiency framework; Renewable Energy Directive; new electricity market design in 2016.
- Intensified implementation of the current legislation (e.g. Article 19 of the EED on split incentives).
- New non-legislative actions (e.g. industrial round tables for energy industries).
- Intensification of current non-legislative actions (e.g. BUILD UP Skills, SET plan, Covenant of Mayors, etc.).

Energy Efficiency 2016 Proposals

Reviews of the

- ✓ **Energy Efficiency Directive (EED);**
- ✓ **Energy Performance of Buildings Directive (EPBD).**

'Smart Financing for Smart Buildings' initiative to make existing buildings more energy-efficient, facilitating access to existing funding instruments.

EED & EPBD Reviews 2016: Process

- **Public consultations** in 2015 and early 2016.
- **Evaluation** of certain Articles of the EED and **evaluation** of the whole of the EPBD.
- **Stakeholder event** on the Energy Efficiency Package: 14 March 2016.
- **Impact assessments** finalised in May 2016.
- **Legislative proposals** to be adopted in October 2016.

- **Coordination of different initatives** (RES, Market Design, governance, non-ETS, etc.).
- **Consistent PRIMES modelling**.

"The EED plays a major role in achieving the 2020 energy and climate targets."

EED Public consultation, 2016

"The EED as such has been a major headache."

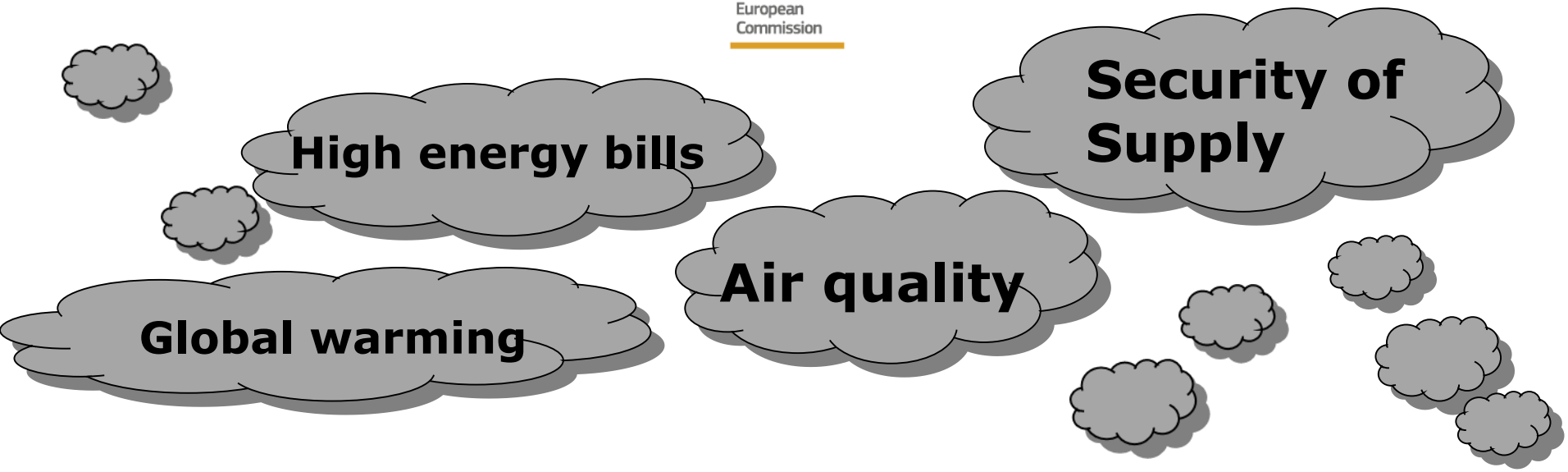
EED Public consultation, 2016

"The requirements of the EPBD give some unnecessary regulatory burden."

EPBD Public consultation, 2015

"The EPBD has created (more) effectiveness in achieving its goals."

EPBD Public consultation, 2015



But wouldn't global warming, high energy bill, cold buildings due to possible energy interruptions and fuel poverty, high greenhouse gas emissions and bad air quality cause a more serious headache for more European citizens in the long run?

Evaluation of EED and EPBD

Assessment of past and current performance, based on five criteria:

- ✓ Effectiveness.
- ✓ Efficiency.
- ✓ Relevance.
- ✓ Coherence.
- ✓ EU-added value.

EED Impact Assessment

- **What is the problem?** What is the optimal level of ambition.
- **Baseline:** EUCO27, the minimum common denominator between the three institutions.
- **Other policy options:** More ambitious targets (30; 33; 35; 40), including sensitivities for RES, while respecting overall consistency with Council Conclusions and EP opinions.
- **Multi-dimensional assessment of costs and benefits**: Investments (CAPEX), energy purchases (OPEX), energy imports, macro-economic effects (GDP, employment), air quality, etc.

EPBD Impact Assessment

Problem definition:

- **EU building stock is transforming too slowly:**
- **WHY?**
  - Contextual.
  - Market failures.
  - Regulatory failures.

- **Looking forward 2030/2050: cost-effective saving potential.**

2016 Energy Efficiency Package

EED

Main objectives:

- **Optimal level of energy savings target** for 2030 (at least 27% target, having in mind 30% EU target).
- Set a **framework for beyond 2020** that will ensure 2030 targets are met.
- Review of Articles 6 and 7.
- Also elements of Articles 9-11/Annex VII on metering and billing.

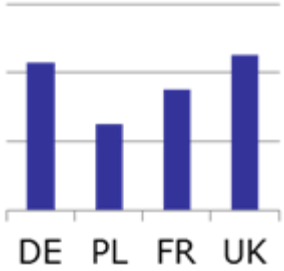
EPBD

Main objectives:

- **General review** in light of experience gained (Article 19).
- Additional **measures needed for 2030-2050** to ensure it is fit for the future.
- Tap **untapped potentials**:
  - **Existing buildings** (renovation rate, reliable consumer information);
  - **Enforcement/compliance**;
  - Progress in **smart technologies**.

EED Review: Main Objectives

- **Articles 1 and 3:**
  - Optimal energy efficiency target for 2030.
- **Article 7 on energy savings obligations and alternative measures:**
  - Extension of the obligation period post 2020;
  - Clarification and streamlining of existing requirements;
  - Ambition level.
- **Articles 9-11 on metering and billing.**
- **Articles 15 and 24:**
  - Adapting to the new Governance and Market Design Initiatives.



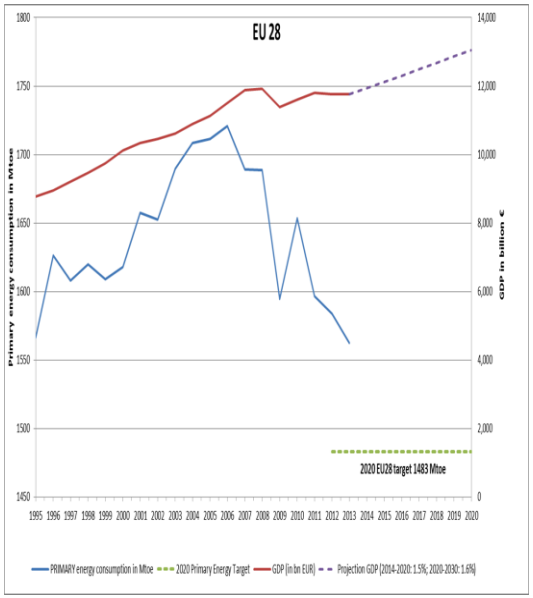
2030 Energy Efficiency Target Level

European Council set in 2014 an indicative 2030 target at EU level of at least 27%, to be reviewed by 2020, having in mind an EU level of 30%.

The European Parliament asked in 2014 and 2015 for a binding 2030 target of 40%.

1. The baseline will be a scenario with GHG 40%, RES 27% and EE 27% in 2030.
2. Analysis of four EE target levels: 30%, 33%, 35%, 40%.
3. Benefits: Saved energy per sector, reduced imports, employment, GDP, air quality.
4. Costs: Energy system costs and investment needs per sector.

2030 Energy Efficiency Target



1. Nature

a) Indicative;
b) Binding.

2. Characteristics

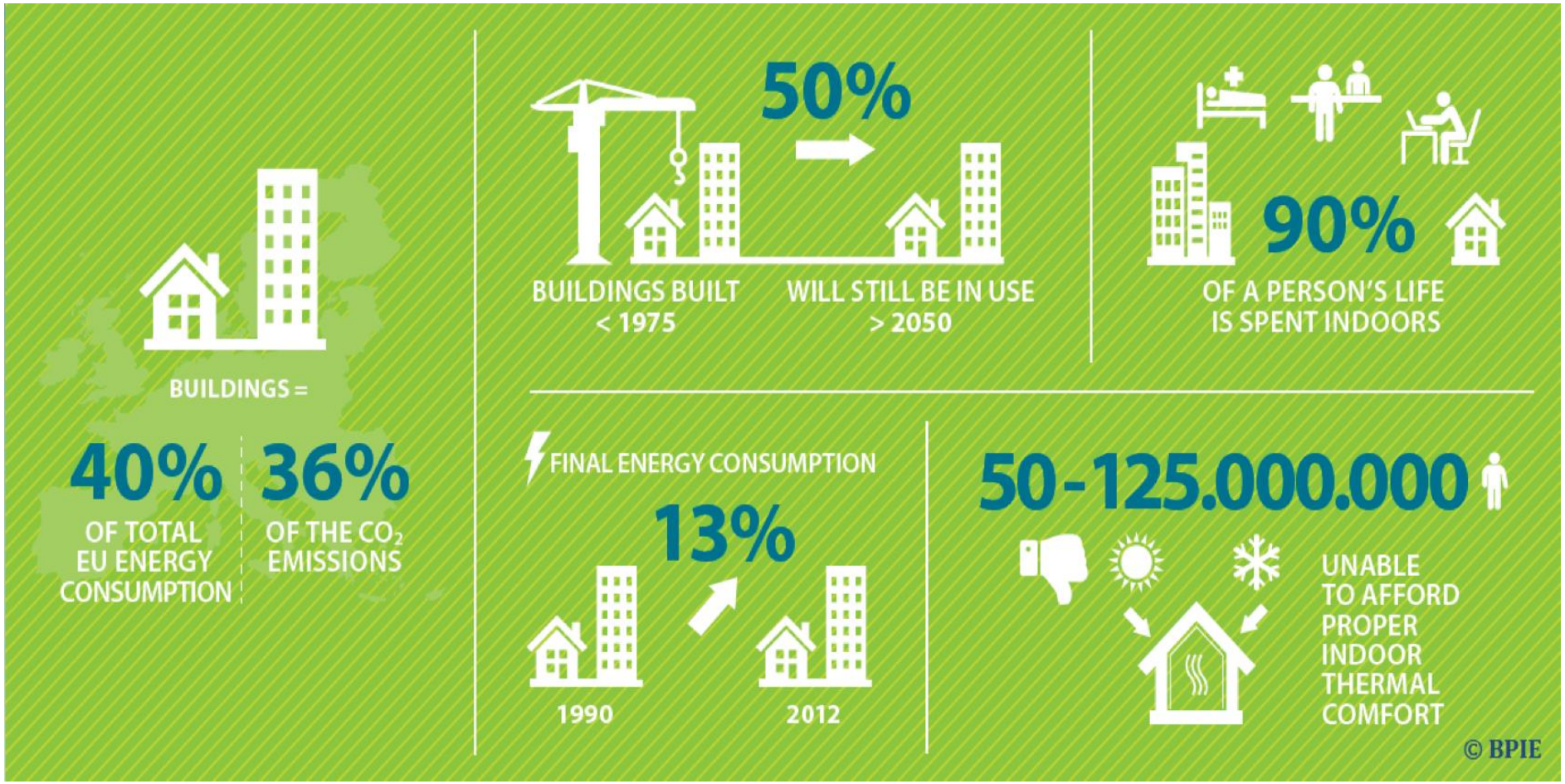
a) Intensity;
b) Absolute energy savings;
c) Primary and final energy consumption;
d) Only primary energy consumption;
e) Only final energy consumption.

3. Ways to express energy consumptions

a) Regardless of the energy source (as it is happening now);
b) As avoided non-renewable energy use;
c) As avoided fuels consumption (*i.e.*, including biomass).

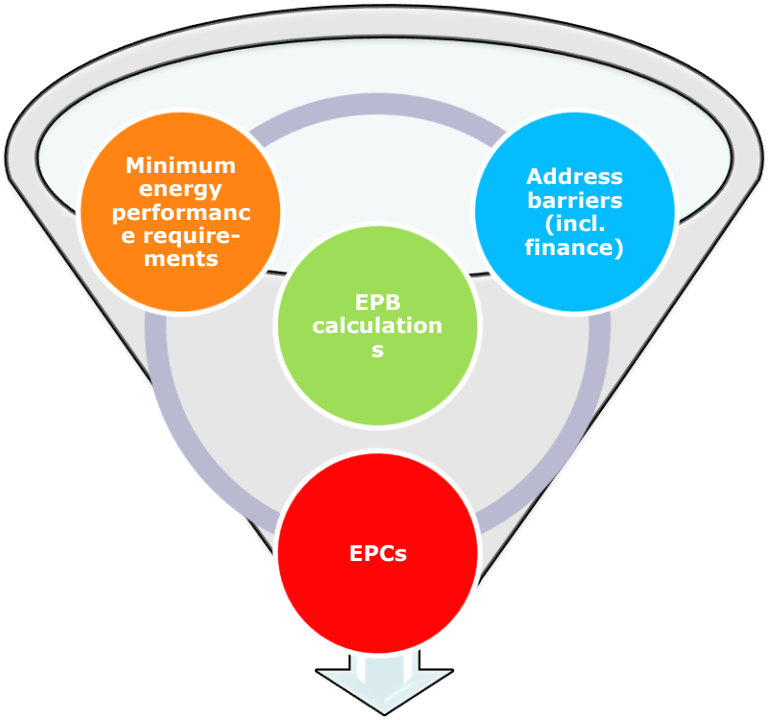
European Commission

Buildings in the EU



EPBD Review: Main Objectives

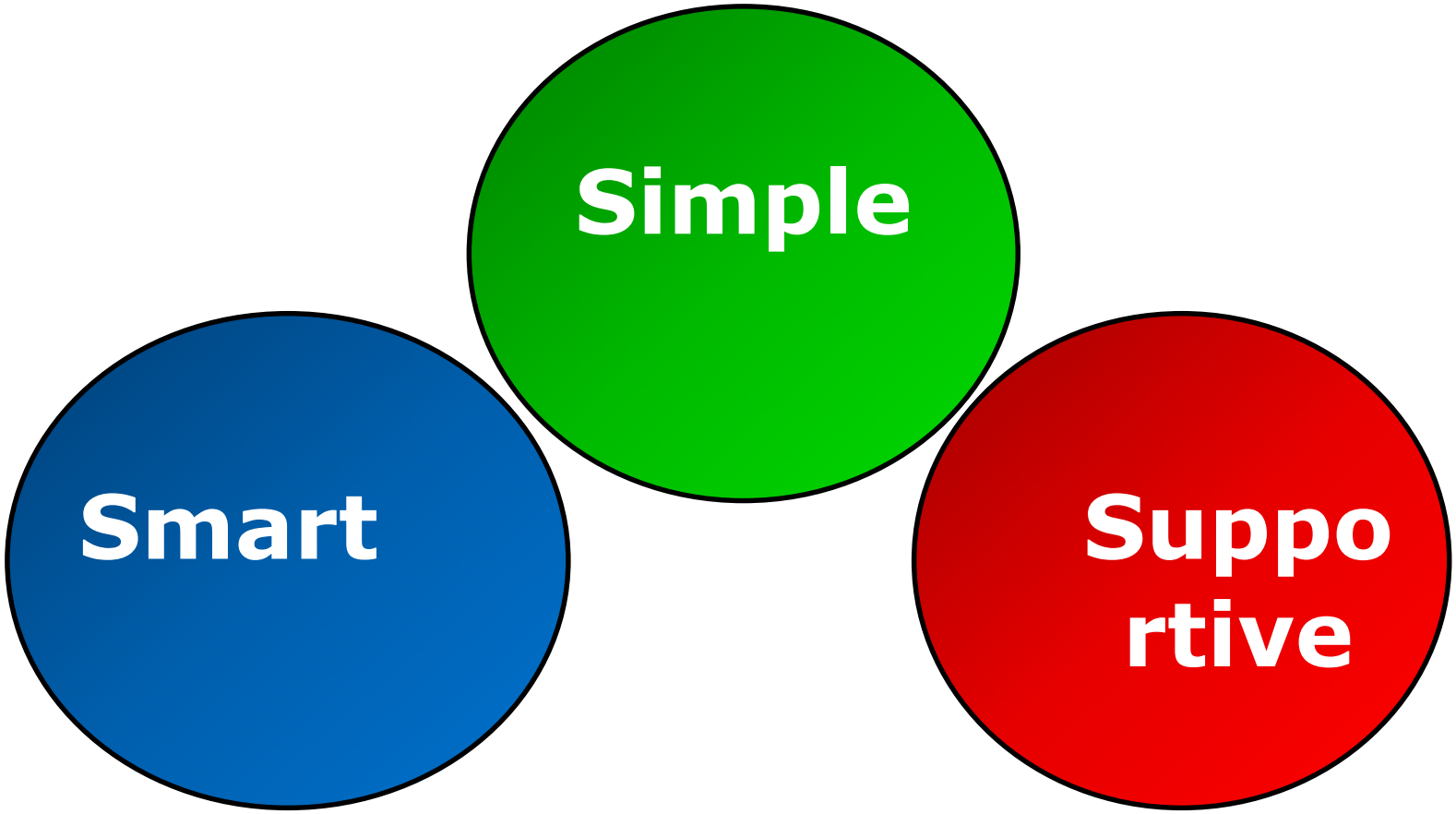
Make sure that the Directive remains fit for purpose…



… including with a **2030 perspective**

Improving the energy performance of buildings

The EPBD Review



Smart Finance for Smart Buildings Initiative

Aggregation

e.g. Project development assistance

De-risking

e.g. Performance data, risks/benefits implications, market evolution & benchmarking

Market-based culture

e.g. financial instruments, better use of public finance

The Adoption Date

The **Energy Efficiency Package (EED + EPBD)** is expected to be adopted on:

12 October 2016!

EU energy efficiency policy ready for 2030!

European Commission

EU Building Stock Observatory

EU Buildings Datamapper

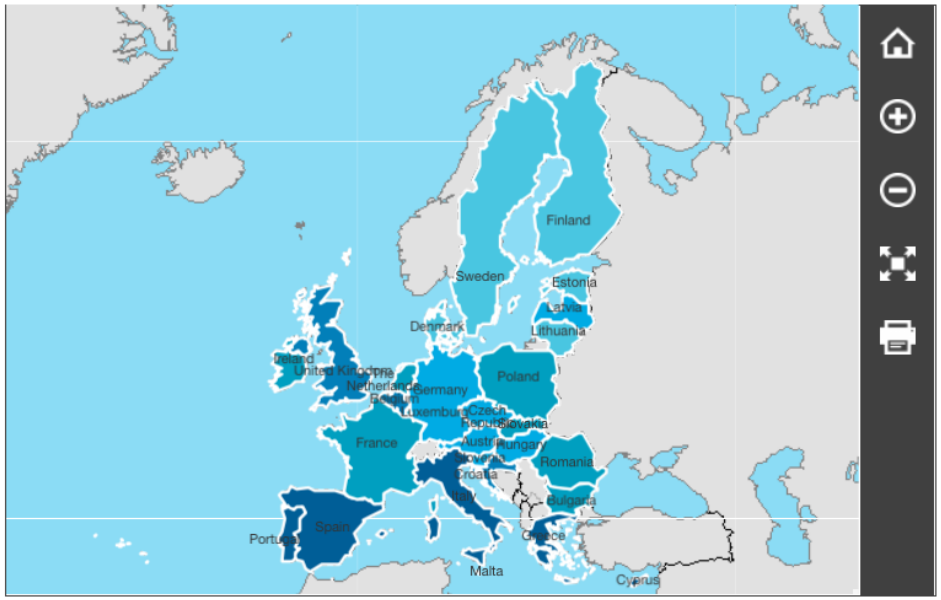
- Building stock characteristics
- Envelope performance
  - Building enveloppe
  - Floors
  - Walls
  - Roofs
  - Windows
- Technical building systems
- Nearly-zero energy buildings
- Energy consumption
- Certification
- Energy poverty
- Energy market

Back to Buildings Observatory Home

U-value for building envelope in residential

Year: 2014

Export Data (xls) | Sources



Leaflet | @Eurogeographics, © EuroGeographics for the administrative boundaries

No values mean non-available or non-relevant information

Unit: W/m2°C

Below 1 | 1 to 1.3 | 1.3 to 1.8 | 1.8 to 2 | Above 2

Indoor Environment Quality (I)

- (Subsidiarity) The EPBD explicitly leaves to Member States the **responsibility to take into account** *"general indoor climate conditions, in order to avoid negative effects such as inadequate ventilation"*.

- **EPBD review**: transparency and consistency determined at **national or regional level**.

Indoor Environment Quality (II)

Findings from the evaluation…

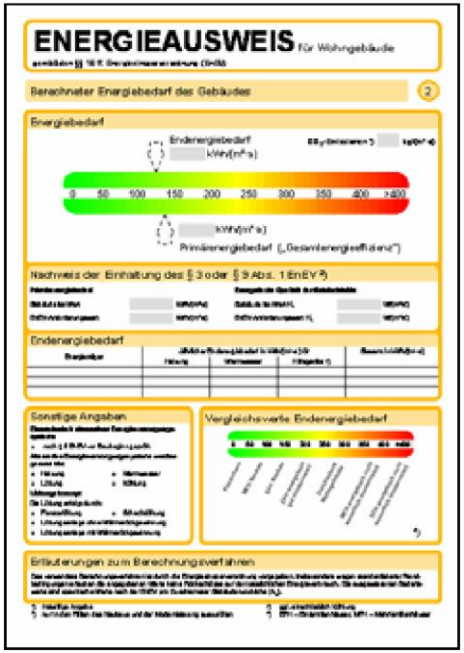
- **EPBD** and **Indoor Environment Quality** are not in contradiction.
- Gaps in the national regulatory framework.
- For existing buildings, mandatory minimum **Indoor Environment Quality** requirements can hardly be found in **national/regional building codes**.

European Commission

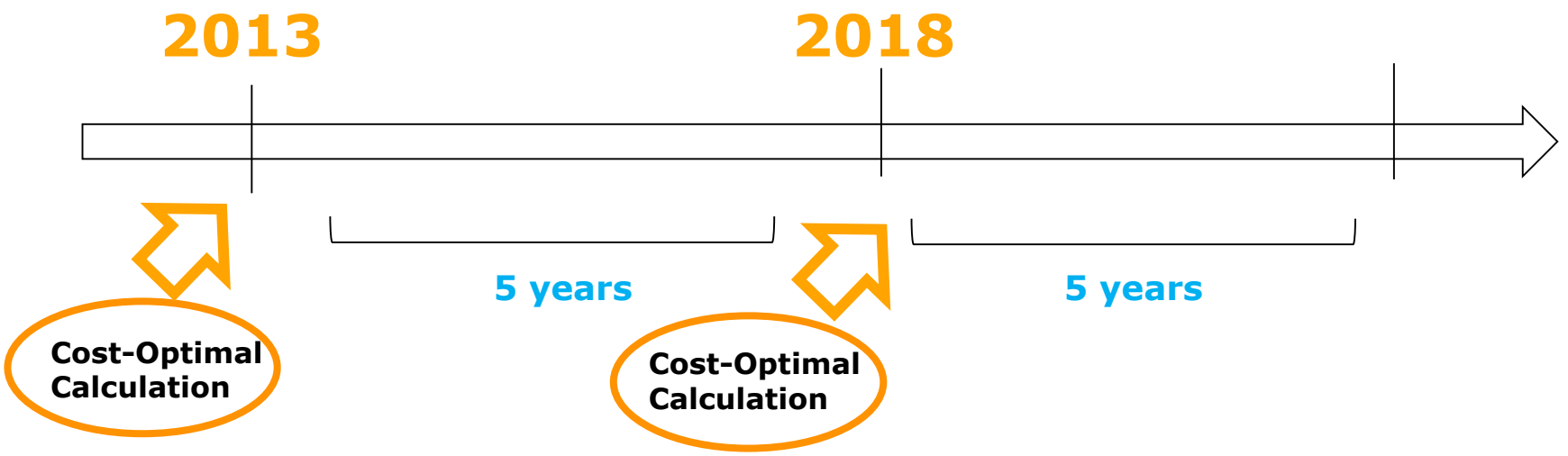
Building Energy Codes

Common obligations, different national implementation

Subsidiarity



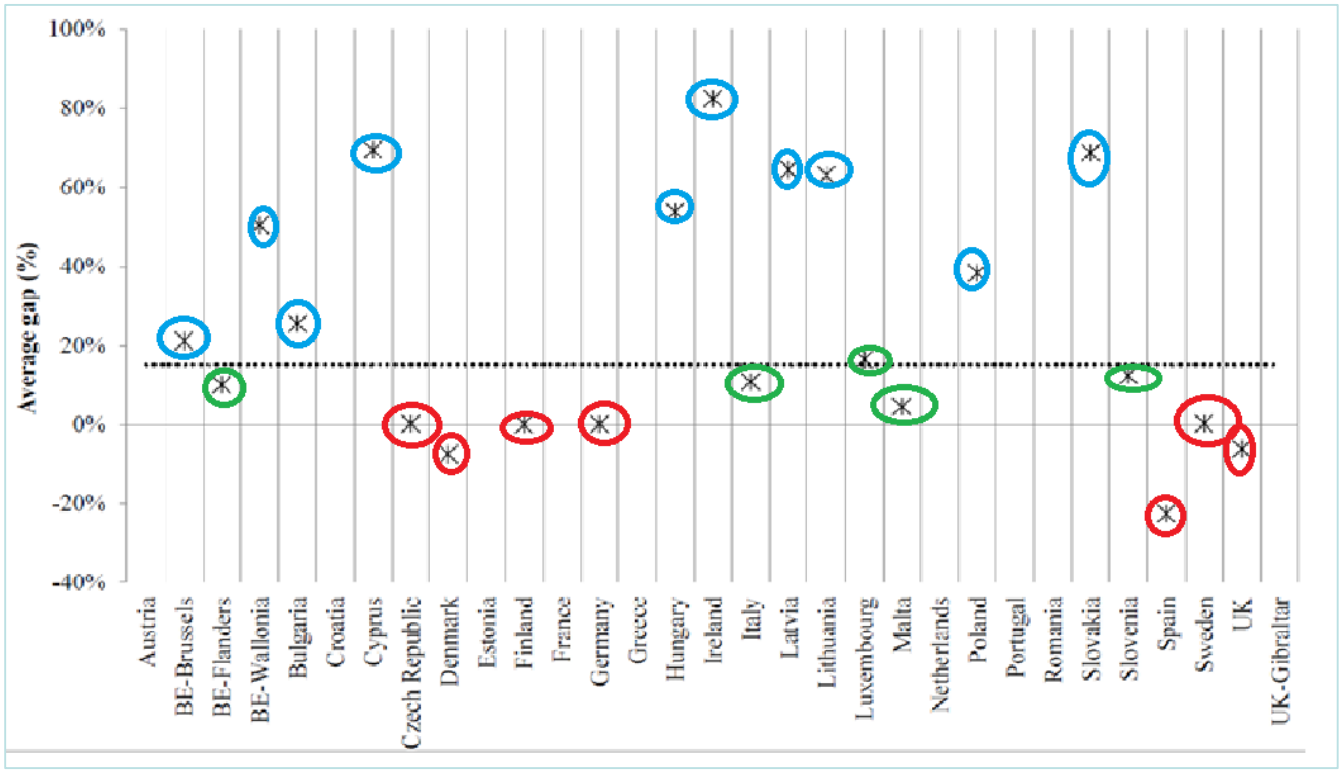
Methodology Energy Performance



→ **29/7/16 : COM (2016) 464 final**: *Progress by MS in reaching cost- optical levels of minimun energy performance requirements*

Methodology Energy Performance

(%) Average gap between minimum energy performance requirements and cost optimal levels



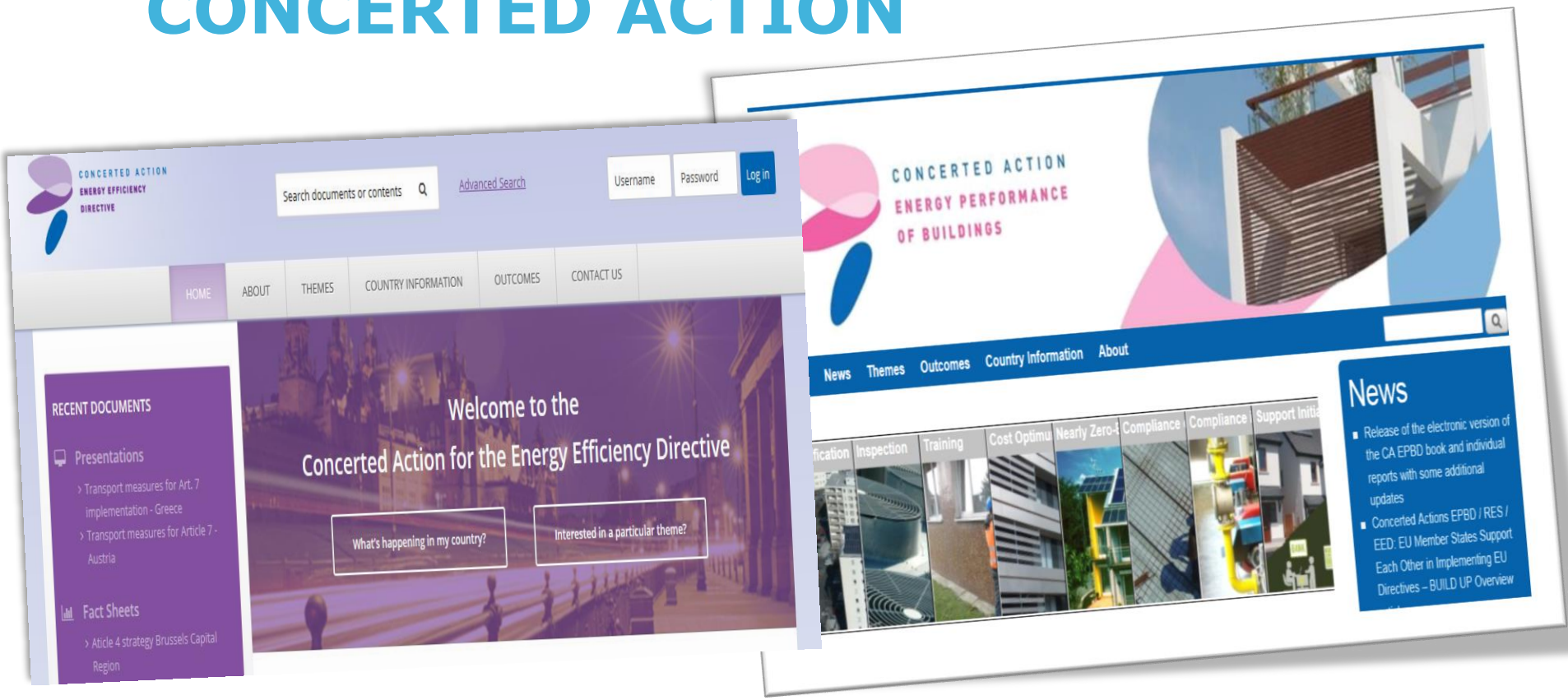
MS's achieved better Cost Optimal than the one required

MS's under the 15% not need to take actions

MS's need to take actions to reduce the significant gap

European Commission

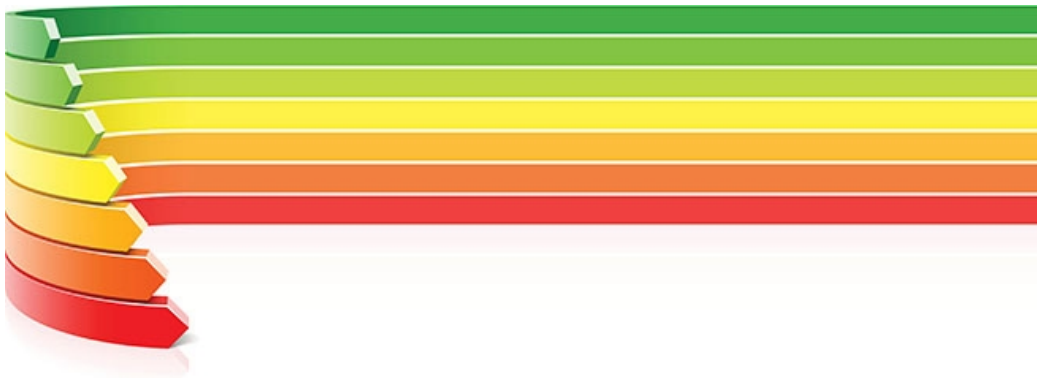
Implementation: CONCERTED ACTION



http://www.epbd-ca.eu

http://www.ca-eed.eu/

Many thanks for your attention



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