



# Energy Community – Energy Efficiency Coordination Group

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## Recent Developments in the EU

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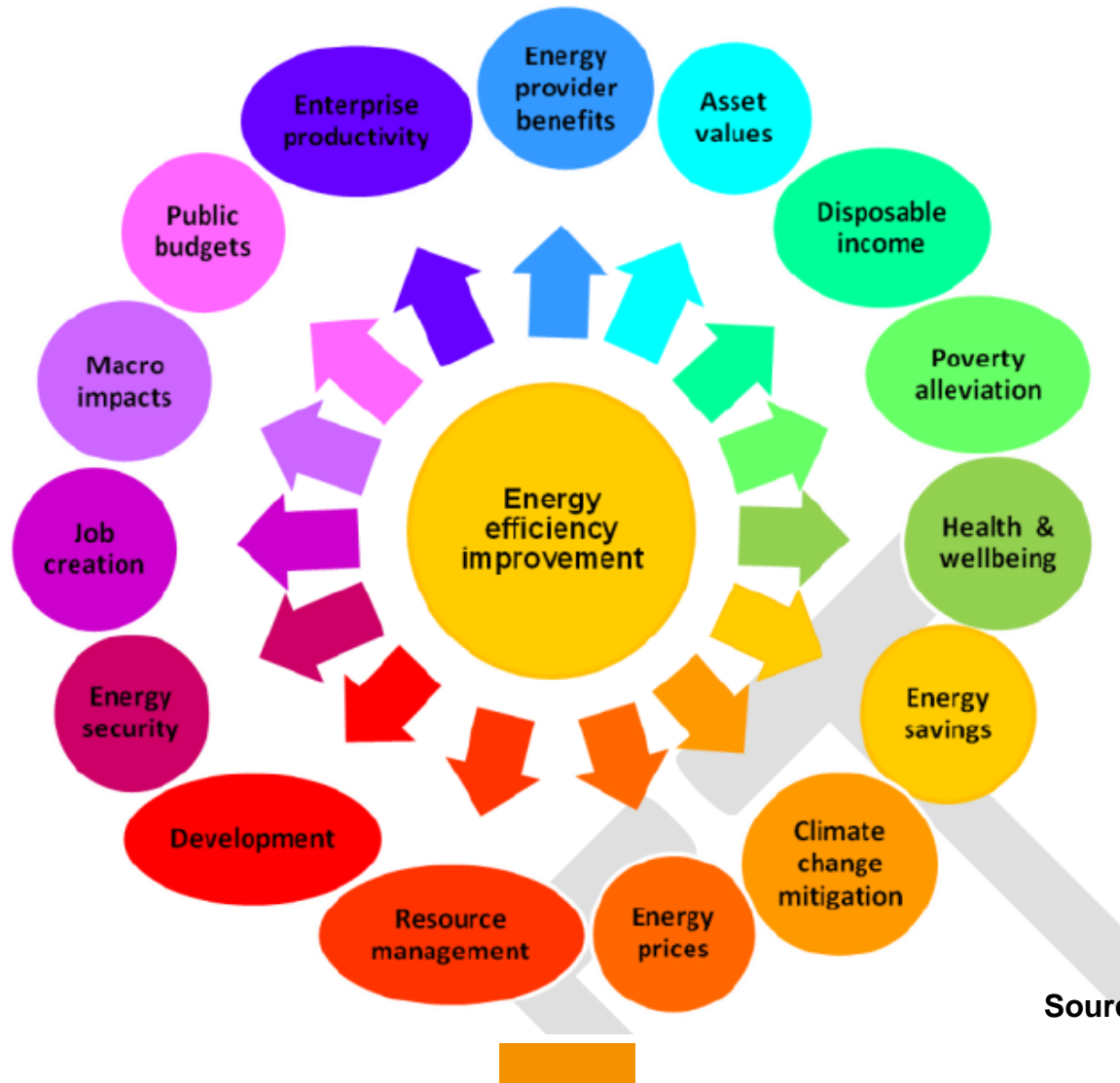
# Energy Union Strategy



**5**  
GUIDING  
DIMENSIONS



# Energy Efficiency



Source: IEA



# General objective: Reduction!

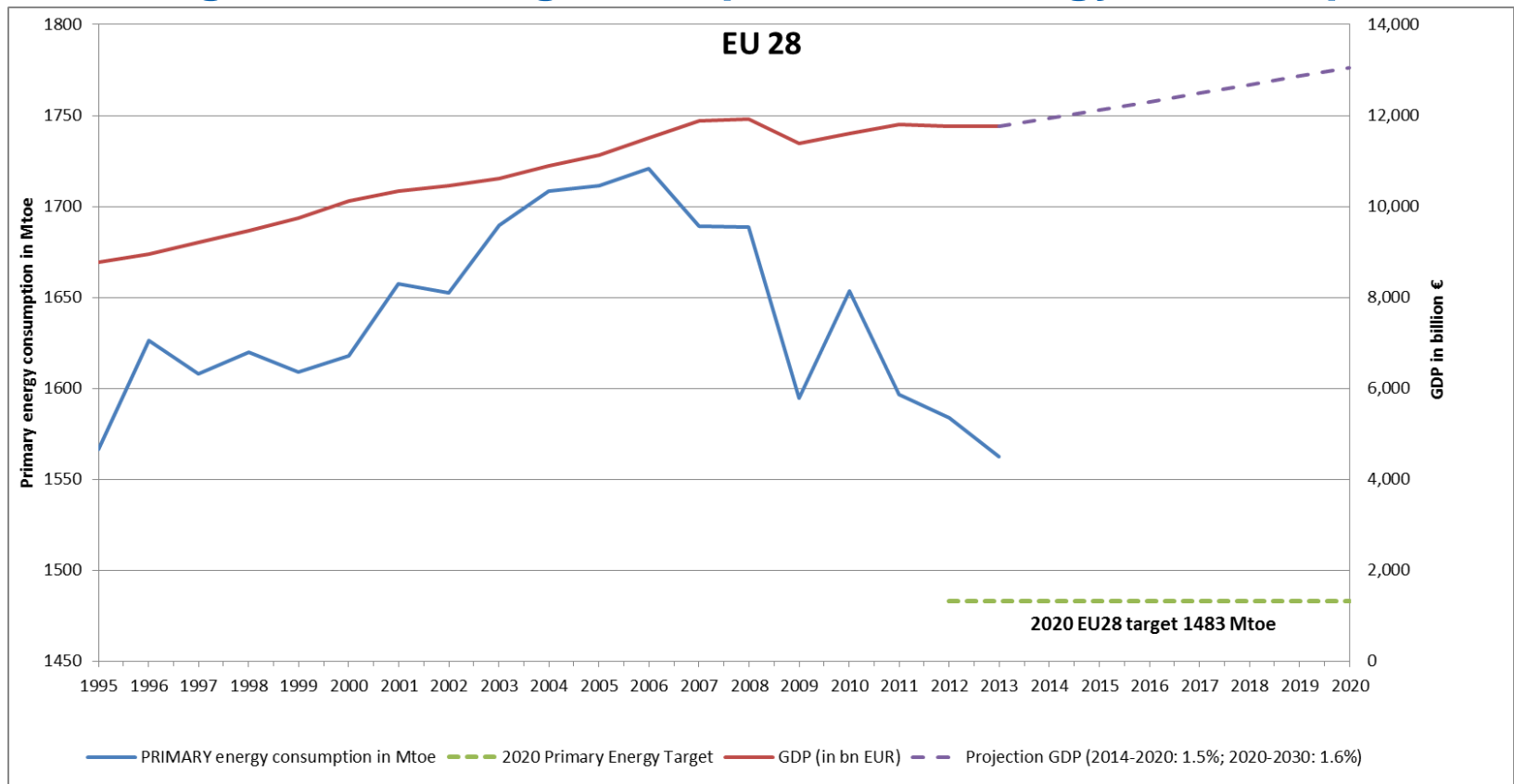
Progress so far:

Based on an analysis of the performance of Member States and additional forecasts, the EU will achieve **energy savings** of only around **18-19% in 2020**.

**More is needed!**

# Trends

Energy efficiency of the EU economy is steadily increasing; and economic growth is being decoupled from energy consumption



# Energy Union Package

- Adopted on 18 November 2015.
- Three Communications: Energy Union, Road to Paris and Achieving 10% electricity interconnection.
- Report on the energy efficiency 20% 2020 target.
- Heating and Cooling Strategy: adopted on 16 February 2016.

# 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."

## Key elements

- Progress Report published on 18 November 2015.
- 2 indicators on the level of ambition for 2020.
- 15 backwards-looking performance indicators for 5 sector.
- Based on official Eurostat data 2005-2013\*.
- SWD(2015)245 with detailed description of indicators.

\* Only the indicator 'Energy consumption per square meter' is taken from the Mure-Odyssee database.



# General trends

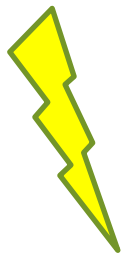
- 8% reduction of primary energy consumption from 2005 to 2013.
- 7% reduction of final energy consumption from 2005 to 2013.
- Reduction of final energy consumption from 2005 to 2013 in all sectors, except the services sector.
- 2013 primary energy consumption equals a 15.5% reduction compared to the baseline 2020 projections.
- Sum of national indicative 2020 primary energy targets: only 17.6%.



## Ambition level 2020

Indicators to compare indicative national targets 2020 (final and primary) set by Member States with Commission's GDP forecast 2014-2020:

- Final energy target 2020: 7 Member States not ambitious;
- Primary energy target 2020: 4 Member States not ambitious.



These countries could increase their primary or final energy consumption at a rate higher than their expected GDP development in 2014-2020.

# Performance indicators (I)

- Long-term indicator: Comparison of energy consumption trends 2005-2013 with the rate of decrease that would be needed in 2005-2020 to reach the indicative national target.
  - In 8 Member States the past energy reduction rate 2005-2013 would not be sufficient to reach their target 2020 expressed in final energy consumption (7 Member States for PEC).
- Short-term indicator: 2012 compared to 2013 primary and final energy consumption.

## Performance indicators (II)

- **Energy intensity** indicator for the **whole economy**
  - 27 Member States improved in the period 2005-2013.
- **Energy intensity** indicator for **industry only**
  - 23 Member States improved in the period 2005-2013.
- **Households** trends 2005-2013
  - Final energy consumption per capita\*: 20 Member States improved;
  - Final energy consumption per m<sup>2</sup>\*: 25 Member States improved.
- **Services sector** trends 2005-2013
  - Energy intensity: 20 Member States improved.

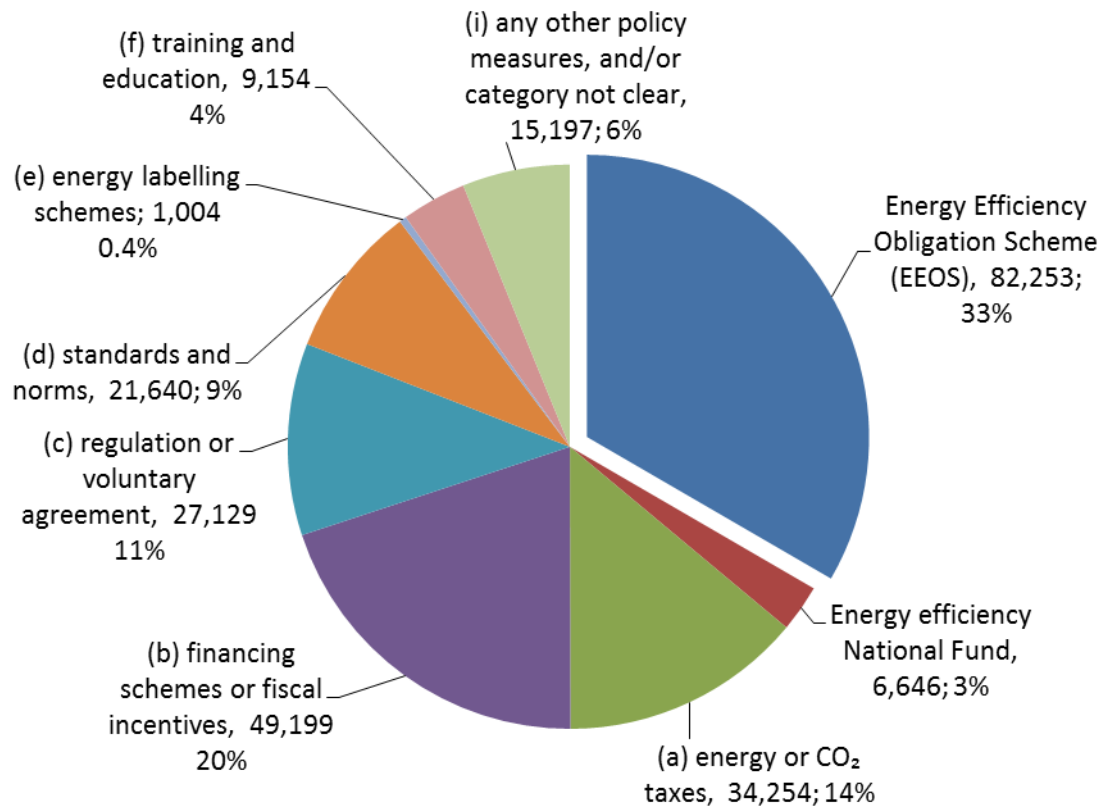
## Performance indicators (III)

- **Transport** sector trends 2005-2013:
  - Total final energy consumption: decrease in 18 Member States.
  - Share of collective passenger transport means: increase in 12 Member States.
  - Share of railway and inland waterway freight transport: increase in Member States.
- **Generation** sector trends 2005-2013:
  - Heat generated from CHP plants: increase in 12 Member States.
  - Transformation output of district heating plants: increase in 10 Member States.
  - Transformation output/input ratio for thermal generation: improvement in 17 Member States.

## Contribution from Article 7

- **Article 7** is expected to contribute with more than half of energy savings estimated from the EED.
- By 5 December 2013 Member States notified the national measures and methodologies under Article 7.
- The sum (EU-28) of notified savings to be achieved by 2020 is **230 Mtoe** (sum of savings from measures is 246.5 Mtoe).
- Evaluation of Article 7 shows that it **is too early to assess the achievement of the Article 7 objective** – analysis indicates that Member States will reach the required savings by 2020 if the requirements are correctly applied.
- **Energy efficiency obligation schemes** to be used by 16 Member States (33% savings notified for this measure alone).

# Notified savings per measure type (ktoe)



# EU Strategy for Heating and Cooling (I)

- Adopted on 16 February 2016: COM(2016) 51 final.
- Communication: Key issues, facts and directions for follow-up actions.
- Staff Working Document: Sets out data and facts, evidence base and good practices.





# EU Strategy for Heating and Cooling (II)

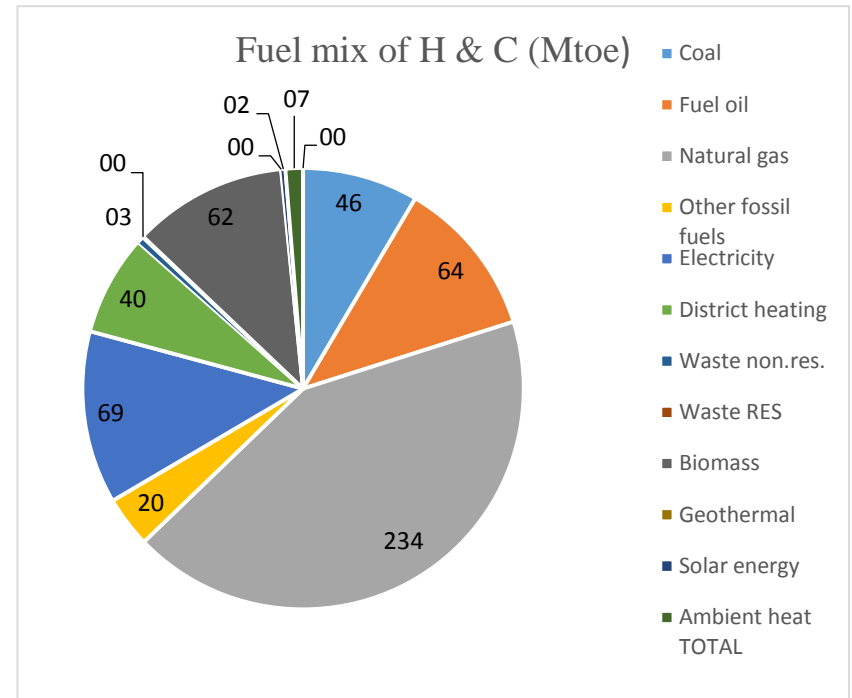
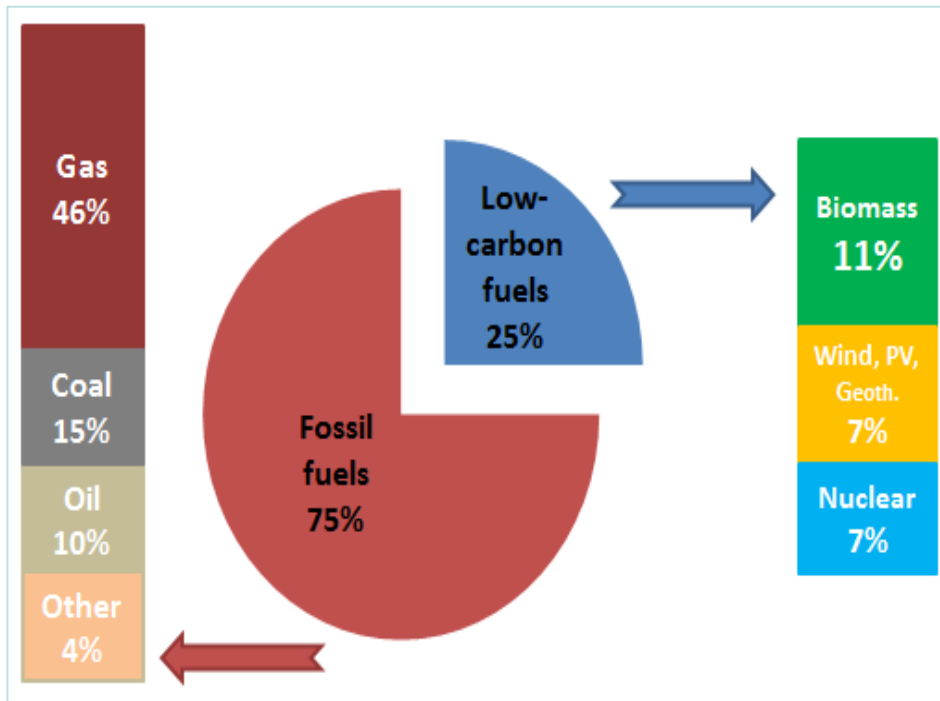
- One of the actions under the Energy Union Strategic Framework and Roadmap of 25 February 2015.
- Poorly known, neglected, fragmented sector without a comprehensive overview and strategic approach so far.
- This EU Strategy is the first to describe heating and cooling comprehensively. It outlines how to integrate heating and cooling into EU energy policies.



# Why a Strategy for Heating and Cooling?

- Heating and cooling are the largest energy use (half the EU's final energy consumption) and will remain so on the long-term (by 2050).
- Fragmented, poorly understood sector – even basic data is missing.
- Largely based on fossil fuels (16.6% is generated from RES).
- Largely inefficient: 75% of EU building stock is inefficient; industry has significant untapped saving and renewable potentials.
- Heating and cooling are key to achieve the EU energy and climate objectives and contribute to the Energy Union's goal.
- EU instruments only address partial aspects; to harness the full potential a comprehensive strategy is needed.

# Heating and cooling: 50% of EU's final energy consumption (546 Mtoe in 2012)



Natural gas is the dominant fuel



# Key issues

- How to make heating and cooling contribute to **demand reduction, decarbonisation and renewable energy?**
  - How this helps **security of supply, cost savings** of citizens and industry, tackling **energy poverty, EU technology leadership** (innovation deployment and development of new technologies) – *i.e.* the four out of the five dimension of the EU Energy Union?
- How to speed up the **deployment of new technologies** (energy efficiency, RES, low-carbon, smart)?
- What are the **challenges and barriers?**
- What are the **tools and solutions?**



# 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.
- 3 key synergies (comprehensive integrated approach):
  - Linking energy savings with the **deployment of sustainable** (renewable-based, low carbon) **supply**;
  - Linking heating & cooling with the **electricity systems**;
  - Linking heating & cooling of buildings with **industry for the use of waste heat and waste cold**.

## New areas

- Cooling.
- District heating and district cooling.
- CHP as central to increase generation efficiency, linking heating and cooling with electricity (flexibility), deploy renewables and alternative fuels, self-generation.
- Thermal storage (buildings, heat networks).
- Smart buildings (demand response, storage, self-consumption).
- Waste heat and waste cold.
- Integrated heat planning & mapping (building renovation and energy savings and the deployment of sustainable supply and of energy infrastructure are coordinated).

# Challenges and barriers (I)

- Buildings: **split incentives** in condominiums and owner-tenant relationships, lack of information-knowledge-expertise, lack of **trained professionals**, lack of capacity in national (local) authorities, **financing** (bundling, investibility).
- Industry: **lack of information-knowledge-expertise**, lack of trained professionals, **financing** (lack of accounting for benefits).
- District heating & cooling: a potential instrument of decarbonisation, negative image from some old legacy systems, **lack of capacity** of national (local) authorities to develop it (energy planning and heat mapping), **financing**.

## Challenges and barriers (II)

- Cooling: **lack of data**, new fast growing area.
- Waste heat & cold: lack of capacity of national (local) authorities, lack of **business models** and coordination between industrial and D & H companies and authorities, **financing**.
- CHP: **electricity market integration** barriers and lack of accounting for benefits.
- Storage: lack of regulatory framework.





# Tools and solutions: Buildings

- Tools and drivers across building types to build the business case for each actor to invest.
- Information-provision, capacity-building and access to financing for owners, tenants, building operators and public authorities.
- Training of professionals (architects, installers and builders).



# Tools and solutions: Industry

- Mainstreaming energy audits, energy management systems and the implementation of their results into business practices, with easier access to financing as an additional help.
- Support developing the business models for the utilisation of waste heat and waste cold (e.g. link with district heating).
- Industrial sectoral round tables to help develop company focussed energy efficiency and renewable energy benchmarks/practices and identifying areas for further technological innovation.
- Innovation support for deploying renewable energy in low and medium temperature processes, and for developing new technologies for high-temperature processes.



# Tools and solutions: District heating and cooling

- Capacity building of national authorities to develop new networks and/or refurbish old networks for the deployment of renewable energy and the recovery of waste heat/cold to heat and cool buildings and establish links with building renovation.
- Business case for industrial and district heating & cooling companies to supply waste heat and cold through thermal networks to buildings.
- Financing through smart financing and EU funds.
- Innovation support through EU programmes.

## Follow-up actions

- The legislative reviews of the EU Energy Efficiency framework (Energy Efficiency Directive, Energy Performance of Buildings Directive, Eco-design and energy labelling framework), of the Renewable Energy Directive and 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.).

## Political context – Energy Union

"... Increasing energy efficiency, in particular in the building sector [...]"

9. In 2015 and 2016, the Commission will **review all relevant energy efficiency legislation.**
10. The Commission will develop a **Smart Financing for Smart Buildings** initiative to **make existing buildings more energy-efficient**, facilitating access to existing funding instruments.

# Review of the EED

Transposition deadline -  
5 June 2014



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Contents

I Legislative acts

DIRECTIVES

- ★ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (\*)
- ★ Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA
- ★ Directive 2012/30/EU of the European Parliament and of the Council of 25 October 2012 on coordination of safeguards which, for the protection of the interests of members and others,



## Objective

To respond to the agreement of the **European Council** of October 2014 on an EU-level energy efficiency target of at least 27% by 2030 to be reviewed by 2020 having in mind an EU level of 30%.

Also to respond to the legal obligations of the EED, namely to assess the implementation of Article 6 and Article 7 in line with Article 24(8) and (9).



## Specific objectives

- ❑ Confirming the **optimal energy efficiency target** for 2030 (27%, 30%, 33% ...).
- ❑ **Review the relevant aspects** of the EED to reflect the 2030 perspective.

**Scope: Targeted approach addressing Articles 1, 3, 6, 7, 9-11, 15(8), 20 and 24**

**NB: Articles 9-11 and 15(8) are being analysed in the context of the Market Design Initiative.**





## Process

- ❑ **Public consultation** open until 29 January 2016.
- ❑ **Evaluation** of certain Articles of the EED to contribute to the IA process.
- ❑ **Stakeholder event** on the Energy Efficiency package – 14 March 2016.
- ❑ **Impact assessment** to be finalised by end of April.
- ❑ **Legislative proposal** ready in the early autumn.



# EPBD review

## *Article 19*

### **Review**

The Commission, assisted by the Committee established by Article 26, shall evaluate this Directive by 1 January 2017 at the latest, in the light of the experience gained and progress made during its application, and, if necessary, make proposals.

## What is the challenge?

An European building stock that is old and inefficient.

Around 40% of primary energy is consumed in Europe's buildings, which use approx. 60% of all gas imports for heating and cooling.

More than two thirds of buildings standing today are expected to remain in use in 2050.

# Review of the EPBD, main instrument tackling energy efficiency in buildings

Data collection and evidence gathering.

Broad consultation and involvement of stakeholders.

Ex-post evaluation of the Directive.

Ex-ante analysis of policy options in the Impact Assessment.

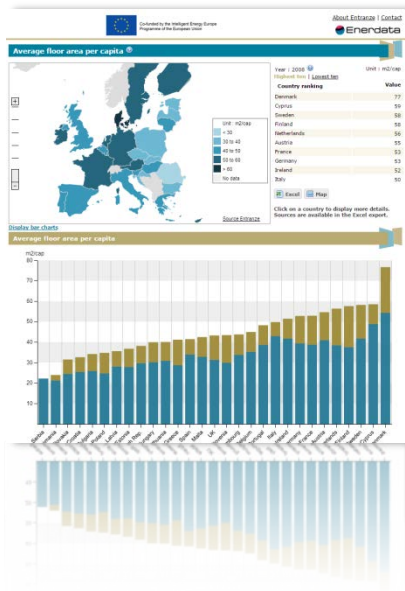
Preparation of the legal proposal.

Adoption of the package, together with the review of the Energy Efficiency Directive.



# Data on the building stock across the EU 28 Member States is key...

The EU Building Stock Observatory will tackle the lack of quality data on characteristics and energy performance of the building stock



**TABULA**

**IEE Project TABULA (2009 - 2012)**

**"Typology approach for Building Stock Energy Assessment"**

Information about the international research project performed from 2009 to 2012 with the support of Intelligent Energy Europe

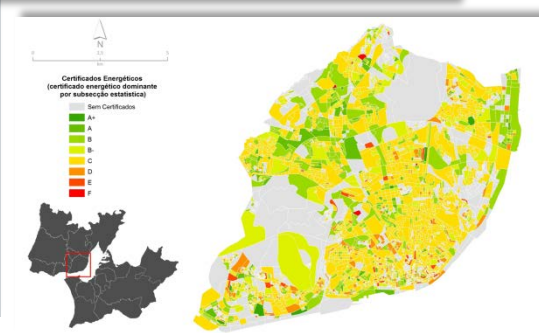
Co-funded by the Intelligent Energy Europe Programme of the European Union

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New monitoring systems - How to provide insight about the current state of the housing stock?

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# Ex-post evaluation of the EPBD

**Online public consultation from 30 June to 31 October 2015**

Member States targeted consultation on 25-27 November 2015 – Concerted Action EPBD.

In-depth technical workshops on specific topics in December 2015.

## Evaluation: Some of the questions under examination

- To what extent has the Directive achieved its objectives?
- What main factors have influenced, or stood in the way, of achieving its objectives?
- To what extent are there any gaps that could prevent the objectives of the EPBD to be met?

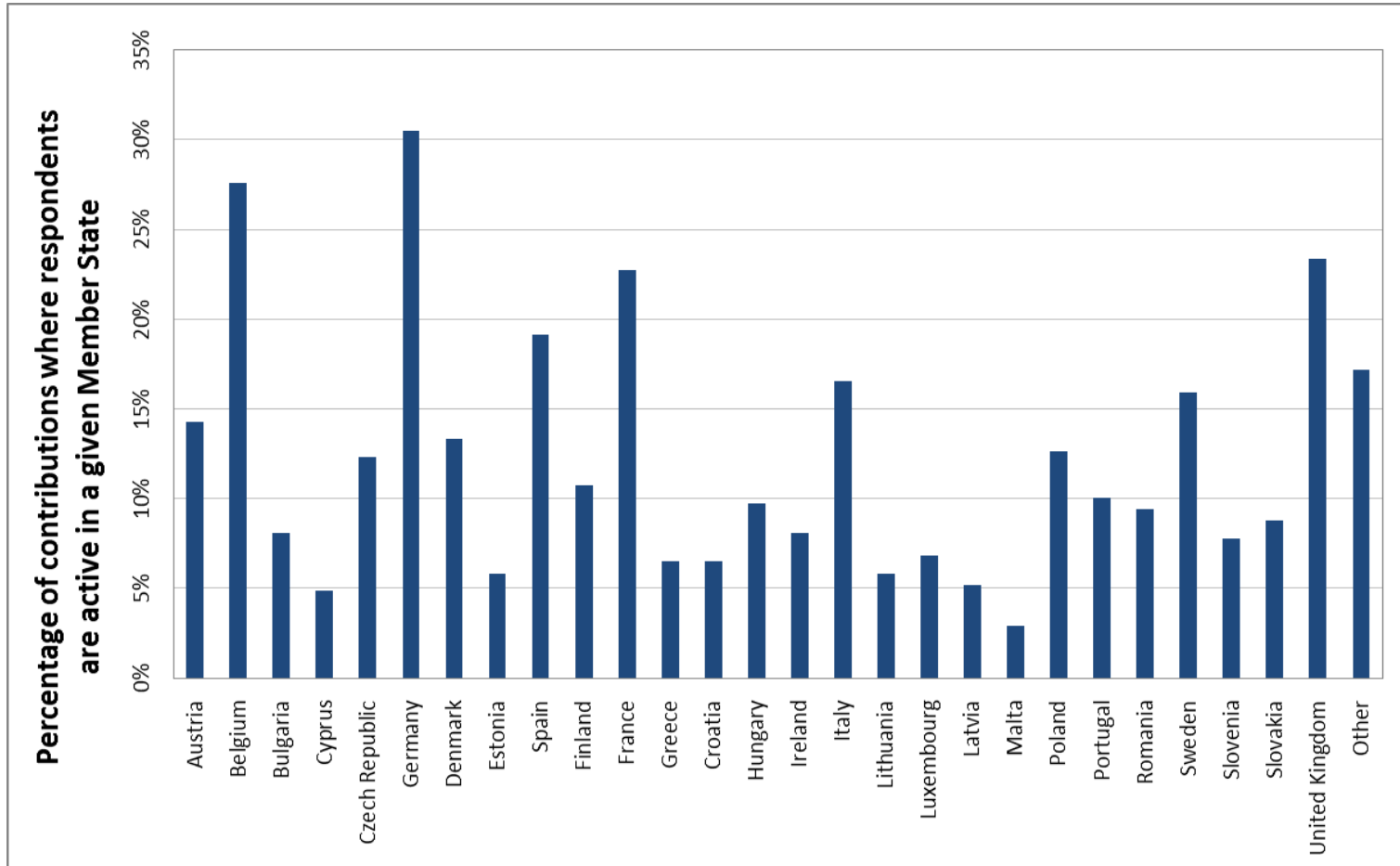
[http://ec.europa.eu/smart-regulation/roadmaps/index\\_en.htm](http://ec.europa.eu/smart-regulation/roadmaps/index_en.htm)

# On-line public consultation

Focus on the current EPBD	Additional areas to be explored
<ul style="list-style-type: none"><li>• Overall assessment.</li><li>• Facilitating enforcement and compliance.</li><li>• Energy Performance Certificates and stimulating energy efficient renovation of the building stock.</li><li>• Financing energy efficiency in buildings and creation of markets.</li><li>• Ensuring new highly efficient buildings using a higher share of renewables.</li></ul>	<ul style="list-style-type: none"><li>• Energy poverty and affordability of housing.</li><li>• 'Smartness' of the building.</li><li>• Links between the EPBD and district and city levels, smart cities, and heating and cooling networks.</li><li>• Awareness, information and building data.</li><li>• Operational management and maintenance.</li></ul>



# More than 300 replies





# Outcome of the public consultation

In general terms, the Directive:

- Good framework for improving energy performance of buildings.
- Most successful in improving energy performance for new buildings but insufficient incentives for energy efficiency renovations.
- Not as effective as it could be. Why? Because of:
  - **Slow implementation;**
  - **Poor compliance and enforcement;**
  - **Low renovation rate.**

# To be followed by an *ex-ante* Impact Assessment – Options mapping

- Baseline scenario: no EU policy change.
- Improved implementation and enforcement.
- Alternative policy approaches.
- Options that take account of new technological developments – 'smartness'.

[http://ec.europa.eu/smart-regulation/roadmaps/docs/2016\\_ener\\_001\\_epbd\\_smart\\_buildings\\_en.pdf](http://ec.europa.eu/smart-regulation/roadmaps/docs/2016_ener_001_epbd_smart_buildings_en.pdf)

# In parallel to ongoing support to better implementation and enforcement

- Transposition and implementation:
  - **Support** Member States;
  - **Infringement** procedures.
- *Ex-ante* conditionalities for European Structural and Investment Funds:
  - **Dialogue** with the Member States;
  - **Articles 3, 4 and 5 and Article 11** of the EPBD.

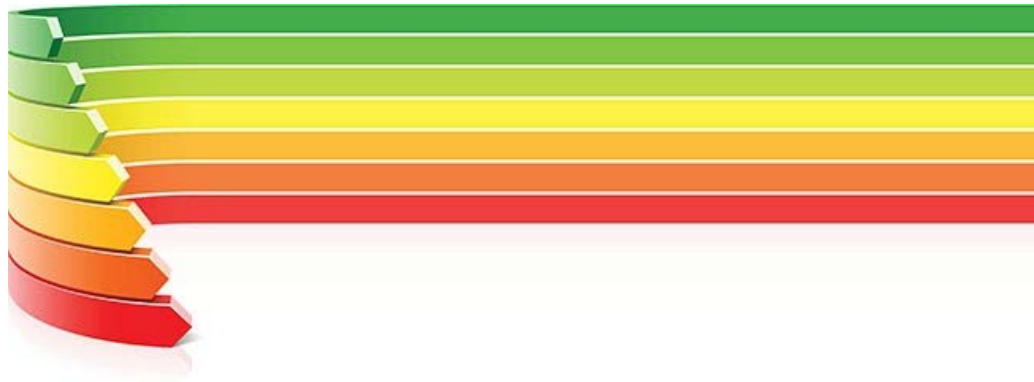
# What else in buildings, beyond the legislative reviews?

Support correct transposition and implementation – getting ready for the **NZEB targets**.

Progress towards standardised instruments and EU-wide certification in the non-residential sector:

- **Non-residential buildings: development of the **European Voluntary Scheme**;**
- **More transparency on the calculation of energy performance and on minimum requirements.**

# Thank you for your attention!



***Claudia Canevari***

*DG ENER, European Commission*

*Website: [http://ec.europa.eu/energy/efficiency/index\\_en.htm](http://ec.europa.eu/energy/efficiency/index_en.htm)*