



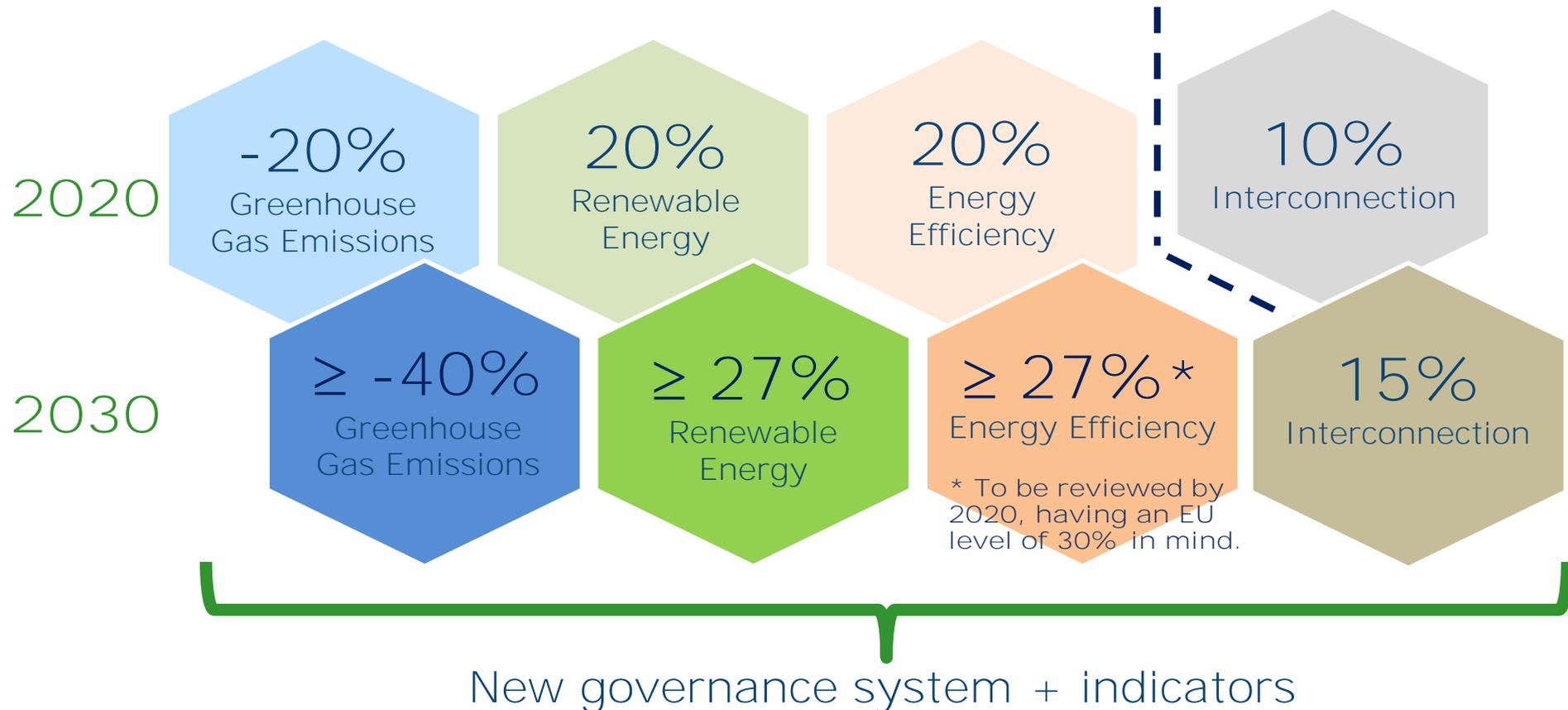
## Conference: Energy Union Implications and Implementation in the Nordic Countries and Baltic States

Energy efficiency and  
the Energy Union:  
where we are. Where  
we will be.

Tallinn, 11 May 2016

Claudia Canevari  
Deputy Head – Energy Efficiency Unit  
DG ENER, European Commission

# Agreed headline targets: 2020 and 2030 Framework for Climate and Energy



# Energy and Climate policies: A short recap

2008

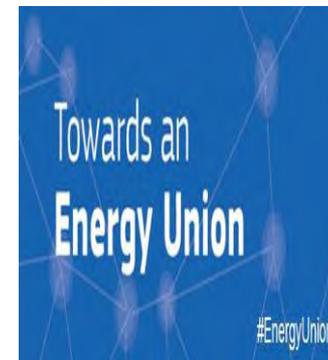
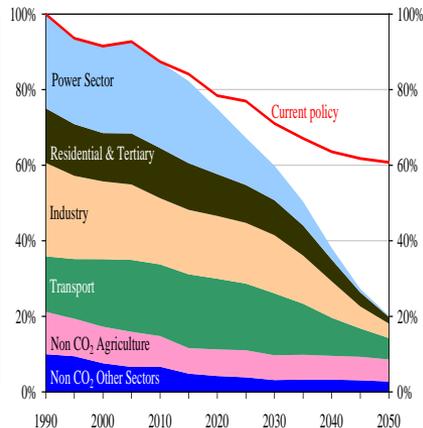
2011

2014

2015

2016

The 2020 EU climate and energy package



Effort Sharing Decision

LULUCF

Energy efficiency

Transport decarbonisation

Renewable energy

Market Design

Governance

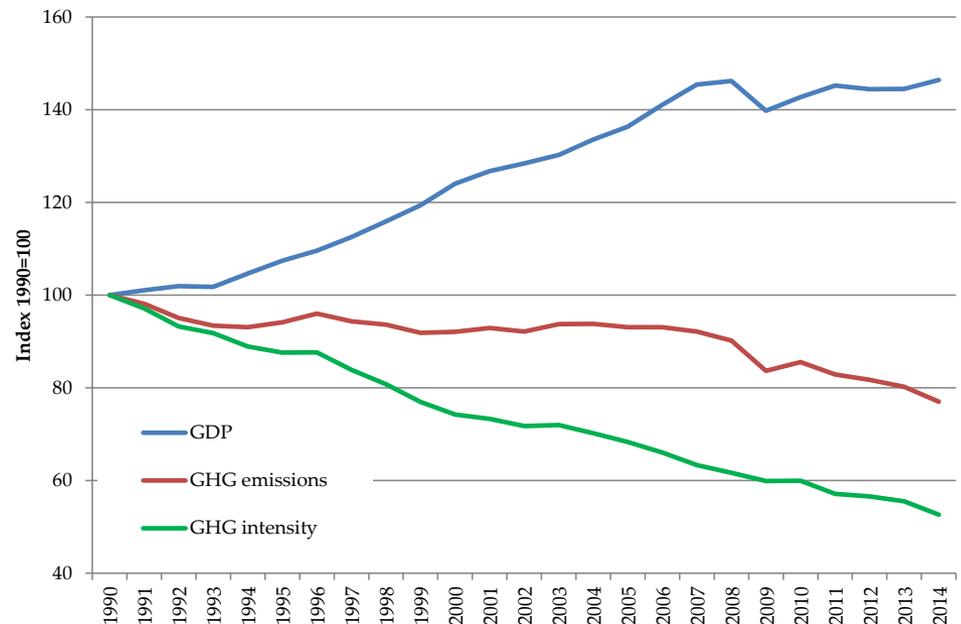
# State of play: GHG emissions

## Achievements

- Long term decoupling of GHG emissions from GDP growth.
- Target for 2020 already achieved (-23% in 2014).
- Well-functioning ETS market as central EU-wide instrument.

## Challenges ahead

- Fair and equitable effort sharing for other sector, while preserving cost-effective approach.



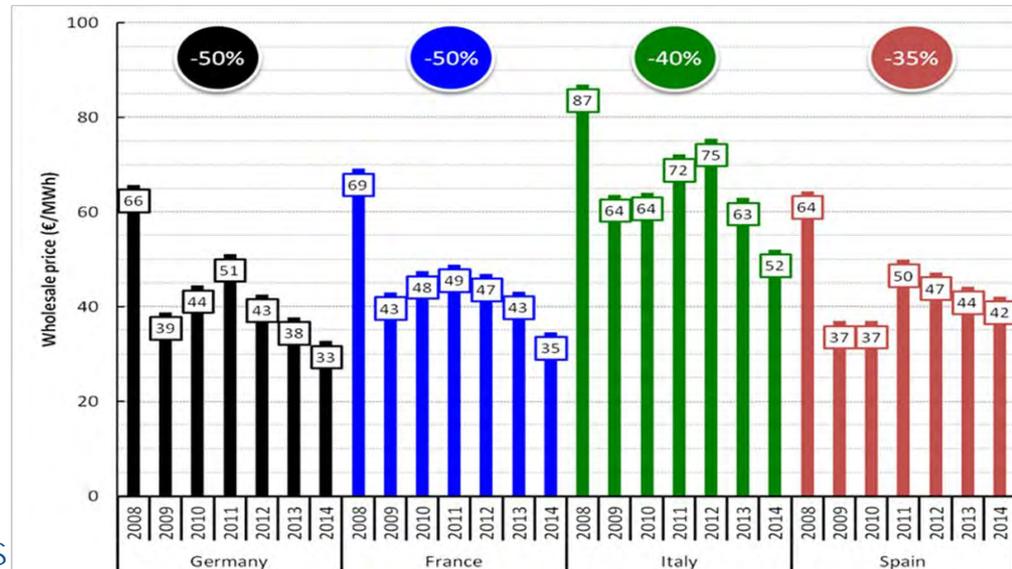
# State of play: Internal market for electricity and gas

## Achievements

- Market coupling.
- Increased competition.
- Convergence in wholesale prices.

## Challenges ahead

- Need for flexibility (generation, demand response, storage, interconnections) in a world with more RES and market rules fit for RES.
- Markets to deliver the right signals for necessary investments.
- Uncoordinated developments of capacity mechanisms.



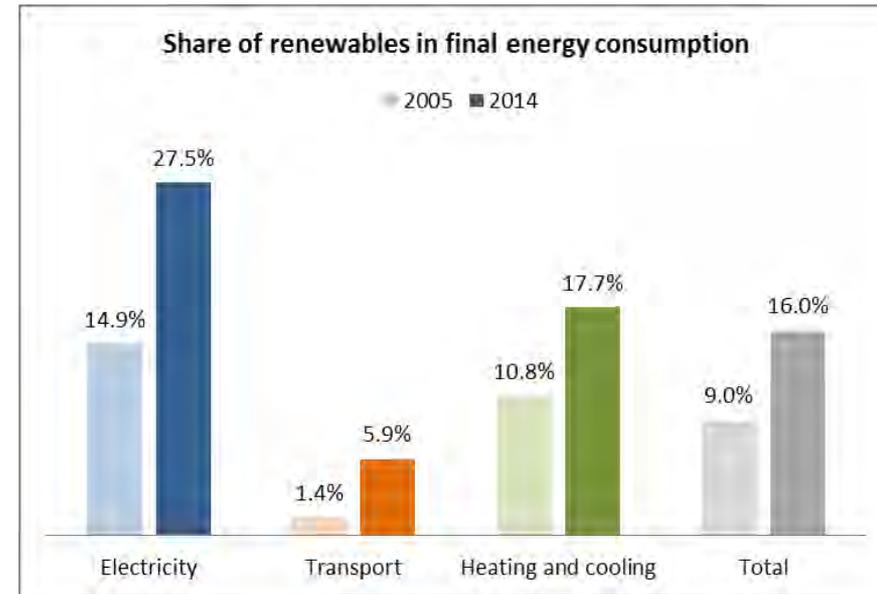
# State of play: Renewables Policy

## Achievements

- Drove down costs key technologies (PV, wind).
- Accelerated deployment – strong impact on investments patterns.
- Important effects in terms of emission reductions and enhanced energy security.

## Challenges ahead

- EU leadership in RES (e.g. EU as RES technology provider).
- Cost efficient achievement at EU level and market integration.
- Accelerating progress in heating & cooling.



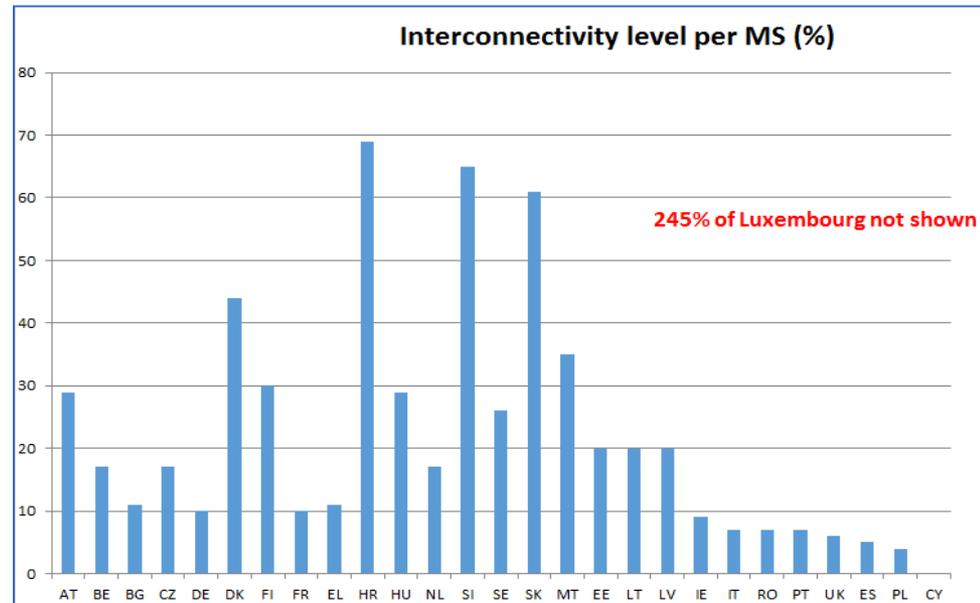
# State of play: Infrastructure

## Achievements

- TEN-E: Dynamic selection of projects of common interest (PCI);
- TEN-E: Measures to ensure timely implementation.
- CEF (+ EFSI): Financing instrument.

## Challenges ahead

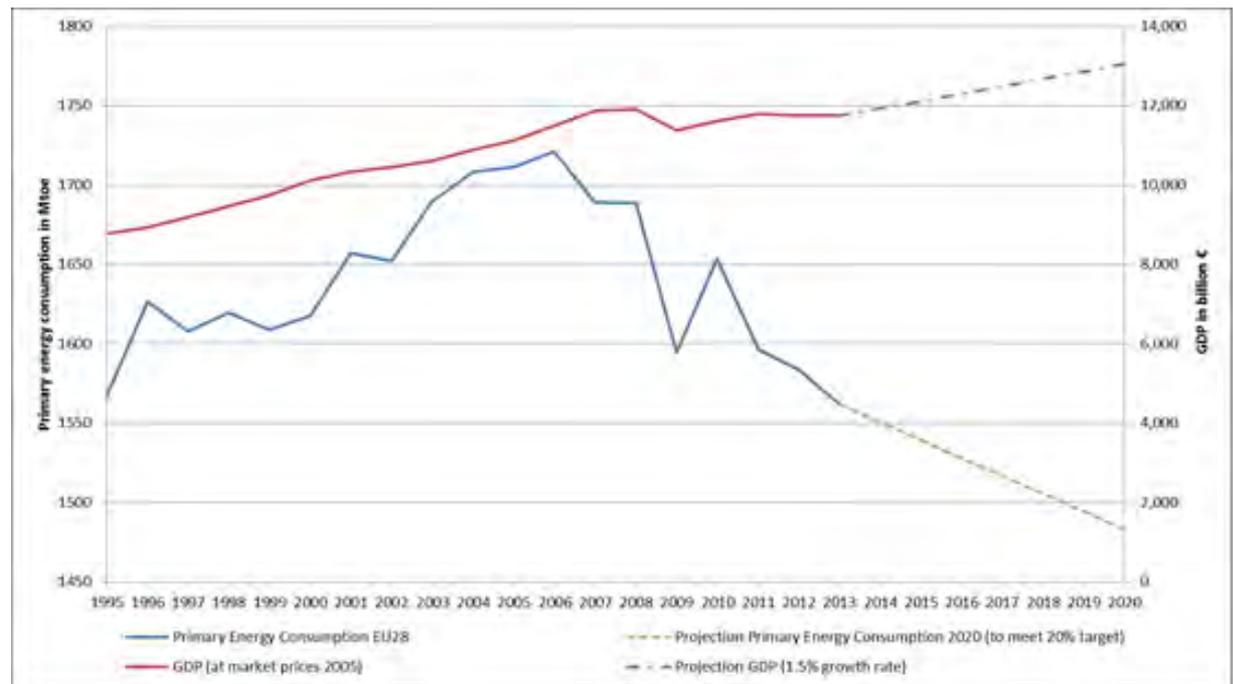
- Building infrastructure to underpin the energy transition at the required pace.
- Implementing an interconnection target of 15% taking into account cost factors and potential trade flows.
- Ensuring market rules that allow for best possible use of infrastructure.



# 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



***"I want to reform and reorganise Europe's energy policy in a new European Energy Union."***

Jean Claude Juncker  
President of the European  
Commission



# Energy Union Strategy



**5**  
GUIDING  
DIMENSIONS



# 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.

# Energy efficiency progress can be observed across all sectors



The share of refrigerators meeting the highest energy efficiency labelling classes (A and above) increased from less than 5% in 1995 to more than 90% 15 years later.



EU industry improved its energy intensity by almost 19% between 2001 and 2011, compared with 9% in the US.



Between 1995 and 2010 the average consumption of new cars in the EU decreased by 27%.



New dwellings built today consume on average 40% less than dwellings built 20 years ago.

# 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 <sub>2</sub> emissions from new passenger cars		

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



# Progress of implementation (18.11.2015)

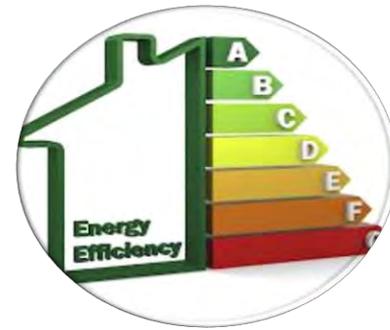
Significant progress in reducing the energy consumption at EU level.

Primary energy consumption decreased by 8% and final consumption 7% between 2005 and 2013.

Preliminary estimates suggest that primary energy consumption continues declining to 1516 Mtoe in 2014.

 Sum of national indicative 2020 primary energy targets: only 17.6%.

**We need to do more!!!**



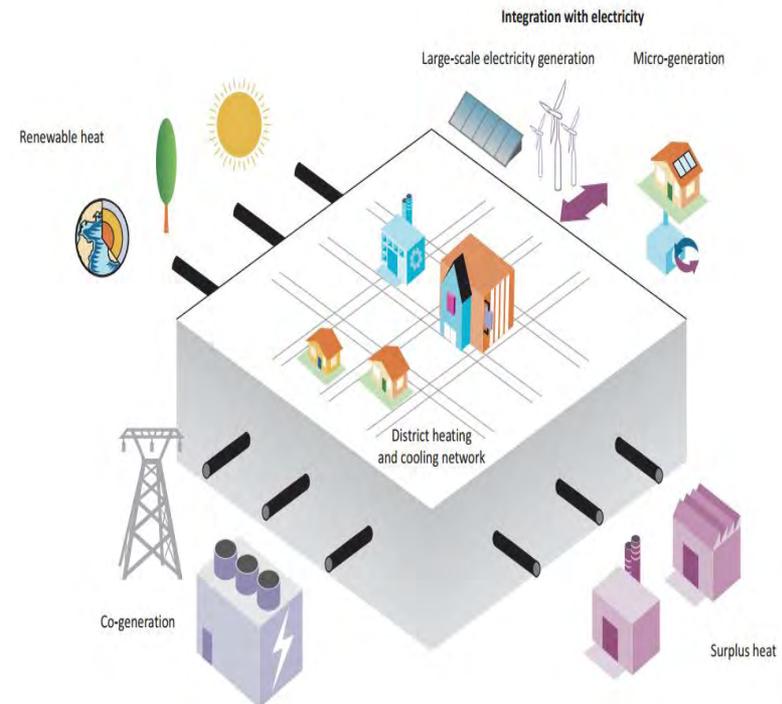
# EU Strategy for Heating and Cooling (I)

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

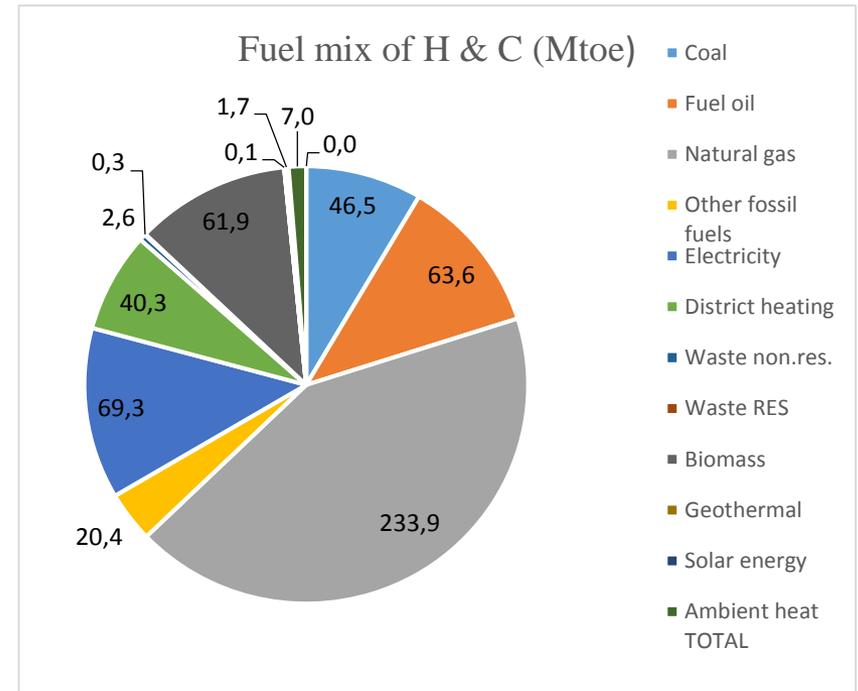
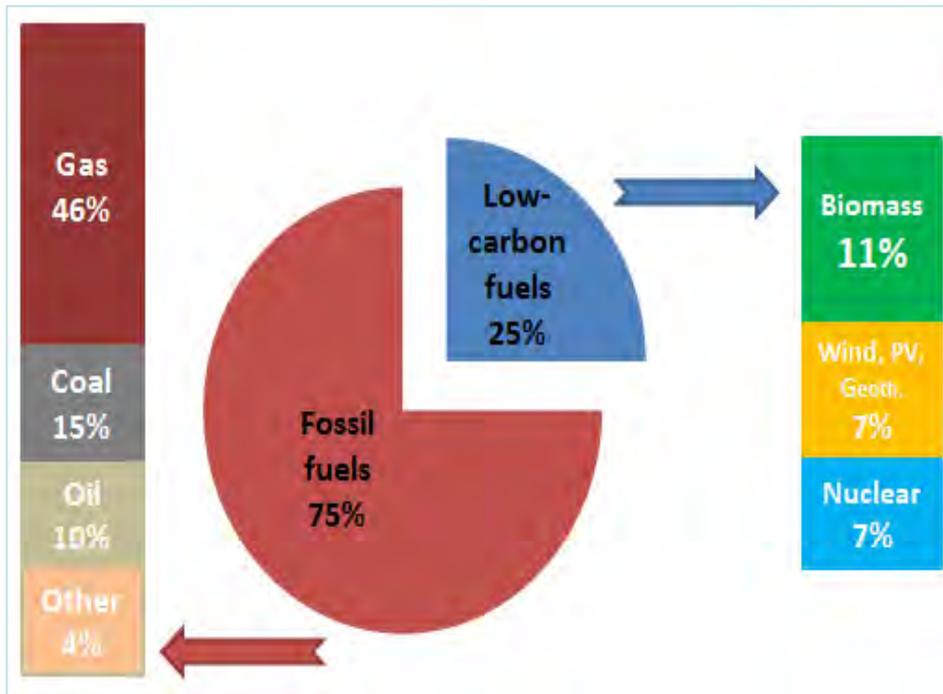


# Why a Strategy for Heating and Cooling ? (I)

- One of the actions under the Energy Union Strategic Framework and Roadmap of 25 February 2015.
- 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)



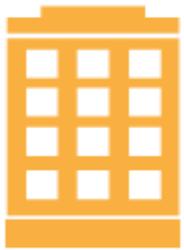
Natural gas is the dominant fuel

# Why a Strategy for Heating and Cooling? (II)

- Poorly known, neglected, fragmented sector, without a comprehensive overview and strategic approach so far.
- Largely inefficient: 75% of EU building stock is inefficient.



## 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.



## 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).

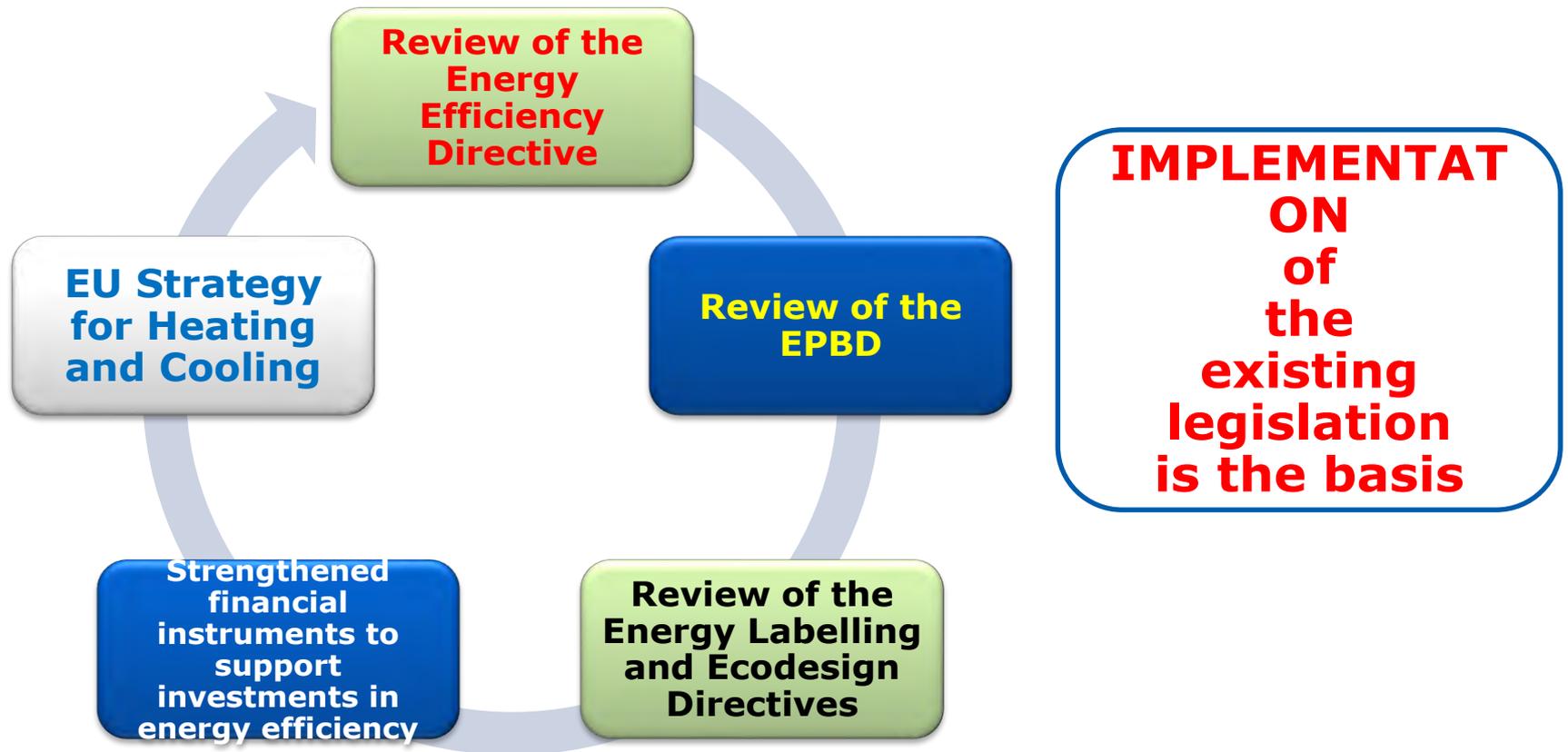


## Political context – Energy Union

**"... 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.

# Energy efficiency – Concrete actions



## 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.

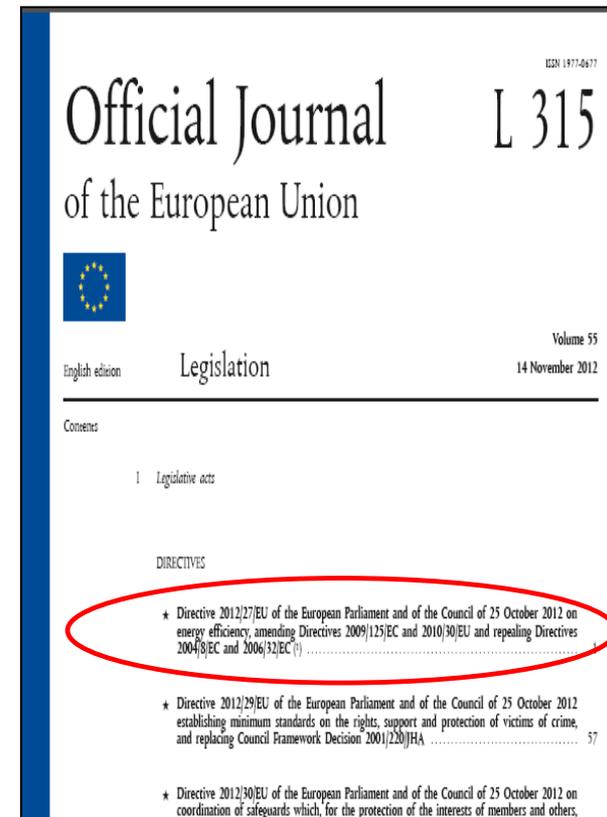




# Objectives of the EED Review 2016

To respond to:

- ❖ 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%
- ❖ The EP vote of December 2015 for a 40% binding target.
- ❖ The legal obligations of the EED to assess the effectiveness of Article 6 and the implementation of Article 7 in line with Article 24(8) and (9).





# Specific objectives of the EED Review 2016

1. Assessing (and confirming) the optimal energy efficiency target for 2030 (27%, 30%, 33%, 35 and 40%).
2. Reviewing specific aspects of the EED to reflect the 2030 perspective:
  - Articles 1 and 3 (2030 target).
  - Article 7 (energy efficiency obligations and alternatives).
  - Articles 9-11 (metering and billing) and 15(8) (demand response).
  - Article 24 (reporting).



## EED Review 2016: Process

- ❑ Public consultation until 29 January 2016.
- ❑ Evaluation of certain Articles of the EED to contribute to the Impact Assessment process.
- ❑ Stakeholder event on the Energy Efficiency package: 14 March 2016.
- ❑ Impact assessment finalised early May 2016.
- ❑ Legislative proposal ready in September 2016.
  
- ❖ Coordination of different initiatives (RES, Market Design, non-ETS, etc.).
- ❖ Consistent PRIMES modelling.

# Energy and Climate policies: A short recap

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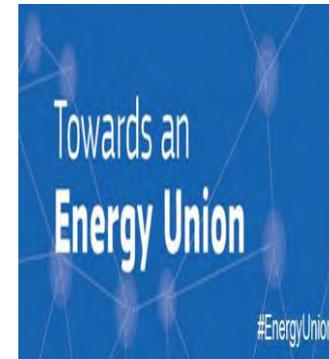
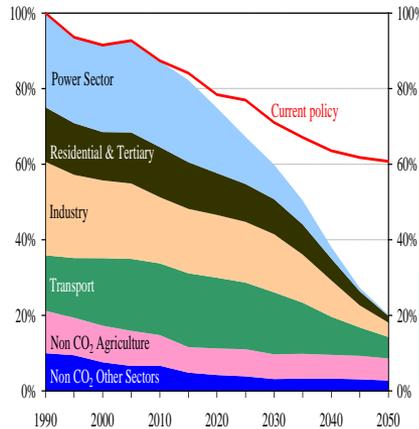
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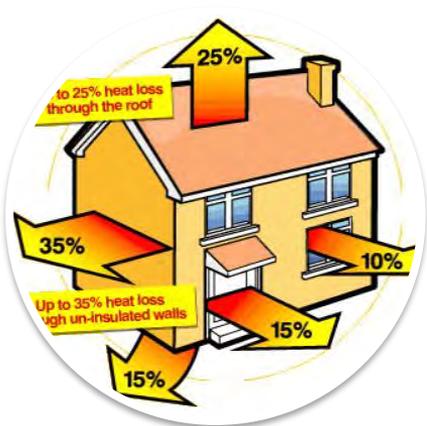
- Effort Sharing Decision
- LULUCF
- Energy efficiency
- Transport decarbonisation
- Renewable energy
- Market Design
- Governance

# 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.



# Objective of the EPBD Review

## Main targeted improvements:

- Extension of the scope for **minimum performance requirements** for buildings and building elements.
- Enhance **renovation rate** to achieve decarbonising buildings by 2050.
- '**Future proof**' in a technology neutral way, *i.e.* smart buildings.
- **Simplified** operation.



## 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 approximately 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: key actions

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.

## *Ex-ante* Impact Assessment – Key issues and 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)



# Financing Energy Efficiency



100 billion euro investments/year needed to achieve energy efficiency targets.

## Existing framework

- European Structural and Investment Funds.
- HORIZON 2020.
- European Fund for Strategic Investment and Investment Plan for Europe.
- Smart Finance for Smart Buildings.
- European Energy Efficiency Fund.



# To bridge the investment gap, we need:

Projects and  
projects promoters



Functioning  
market



Large scale capital  
and investors



Driving the demand  
for finance

Driving the supply  
of finance

Investment-friendly legislative framework  
EE investments financing – a boring exercise?  
**NOT THERE YET!**

# Smart Finance for Smart Buildings Initiative

## Aggregation

e.g. Project development assistance



## De-risking

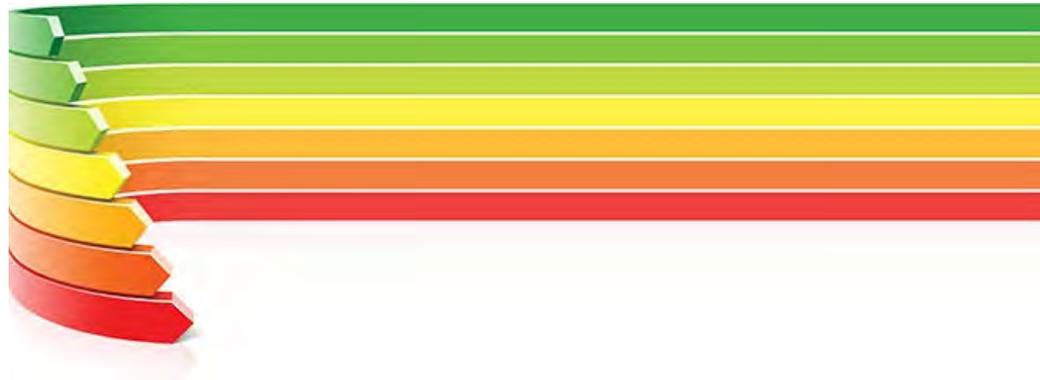
e.g. Performance data, risks/benefits implications, market evolution & benchmarking



## Market-based culture

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

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)*