EXPO 2015
High-level Workshop on Energy Efficiency and Sustainability

Energy Efficiency in the EU: Where We Are; Where We Will Be

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EXPO, Auditorium Palazzo Italia

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Agenda

1. European Energy Union
2. Energy Efficiency: Where we are
   a) Energy Efficiency in industry
3. Energy Efficiency: Where we will be

Energy in the EU

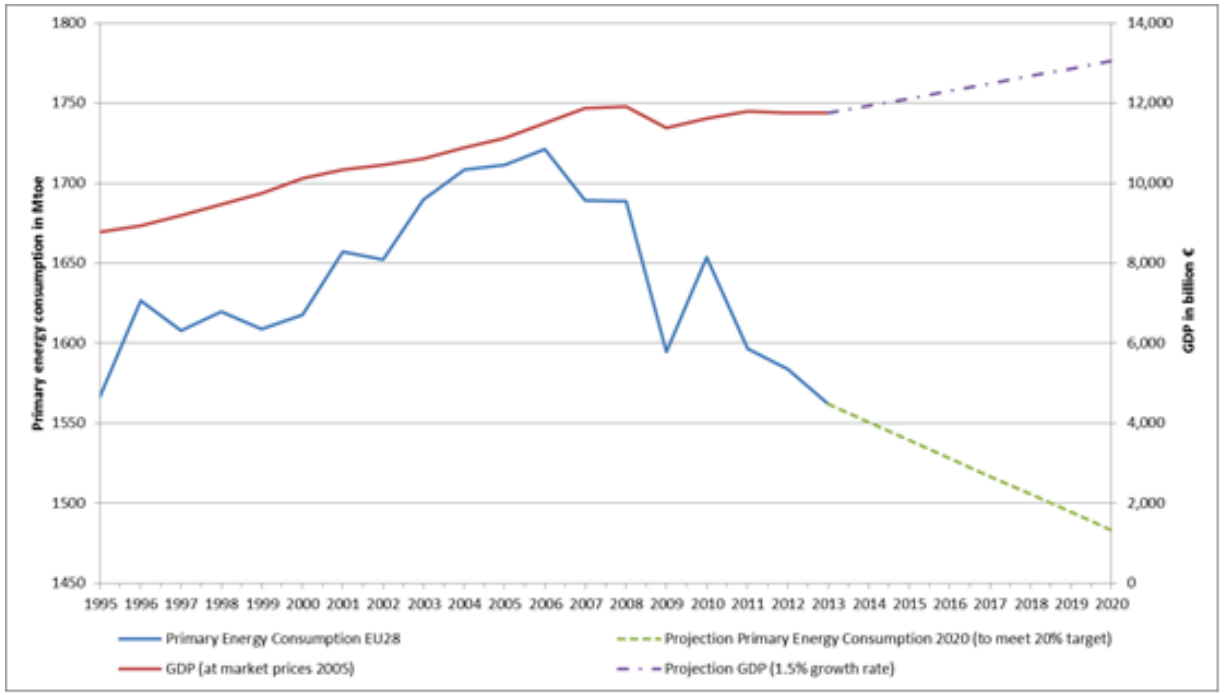
Results achieved... (I)

- Greenhouse gas emissions **fell 18%** (1990-2011).
- **Energy efficiency** savings: 15.5 % (2013).
- Share of **Renewables**: 15.0% (2013).
- European renewable energy businesses have a combined annual turnover of €129 billion, **employing over 1 million people**.

Energy in the EU

Results achieved… (II)

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



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

Energy in the EU

To be improved…

- EU: the **largest energy importer** in the world.
- **Competitiveness** of energy prices (higher than in the US).
- Internal energy market **not yet completed**.
- 12 Member States still **insufficiently connected**.
- **Transparency** of gas markets.
- **Overdependence** on single supplier.

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

Jean Claude Juncker

European Commission

The way towards:

The Energy Union

Where we want to go:

A secure, sustainable, competitive, affordable energy for every European

What this means:

Energy security, solidarity and trust
A fully integrated internal energy market
Energy efficiency first
Transition to a long-lasting low-carbon society
An Energy Union for Research, Innovation and Competiveness

How we want to reach it:

Our vision of an Energy Union

- True **solidarity and trust**; speaking with **one voice** in global affairs.
- An **integrated** continent-wide energy system.
- Sustainable, low-carbon and climate-friendly **economy**.
- Strong, innovative and **competitive** European economy.
- **Citizens** taking ownership of the energy transition.

1 Secure supplies
2 Internal energy market
3 Energy efficiency
4 Emissions reduction
5 Research & Innovation

1 Secure supplies

We have to become less dependent on energy from outside the EU

This means increasing transparency on gas supply; diversifying sources, supplies and routes; working together on security of supply and developing a stronger European role in global energy markets.

2 Internal energy market

5 GUIDING DIMENSIONS

Energy should flow freely across the EU – without any technical or regulatory barriers

This means connecting markets through interconnections and implementing and upgrading the internal market's software while enhancing regional cooperation and empowering consumers.

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.

4 Emissions reduction

An ambitious climate policy is an integral part of our Energy Union

The next challenge will be to enforce the 2030 energy and climate framework, while becoming the number one in renewables.

5 Research & innovation

Developing EU technological leadership in low carbon technologies

This will reduce energy consumption, empower consumers, create huge industrial opportunities and boost growth and jobs.

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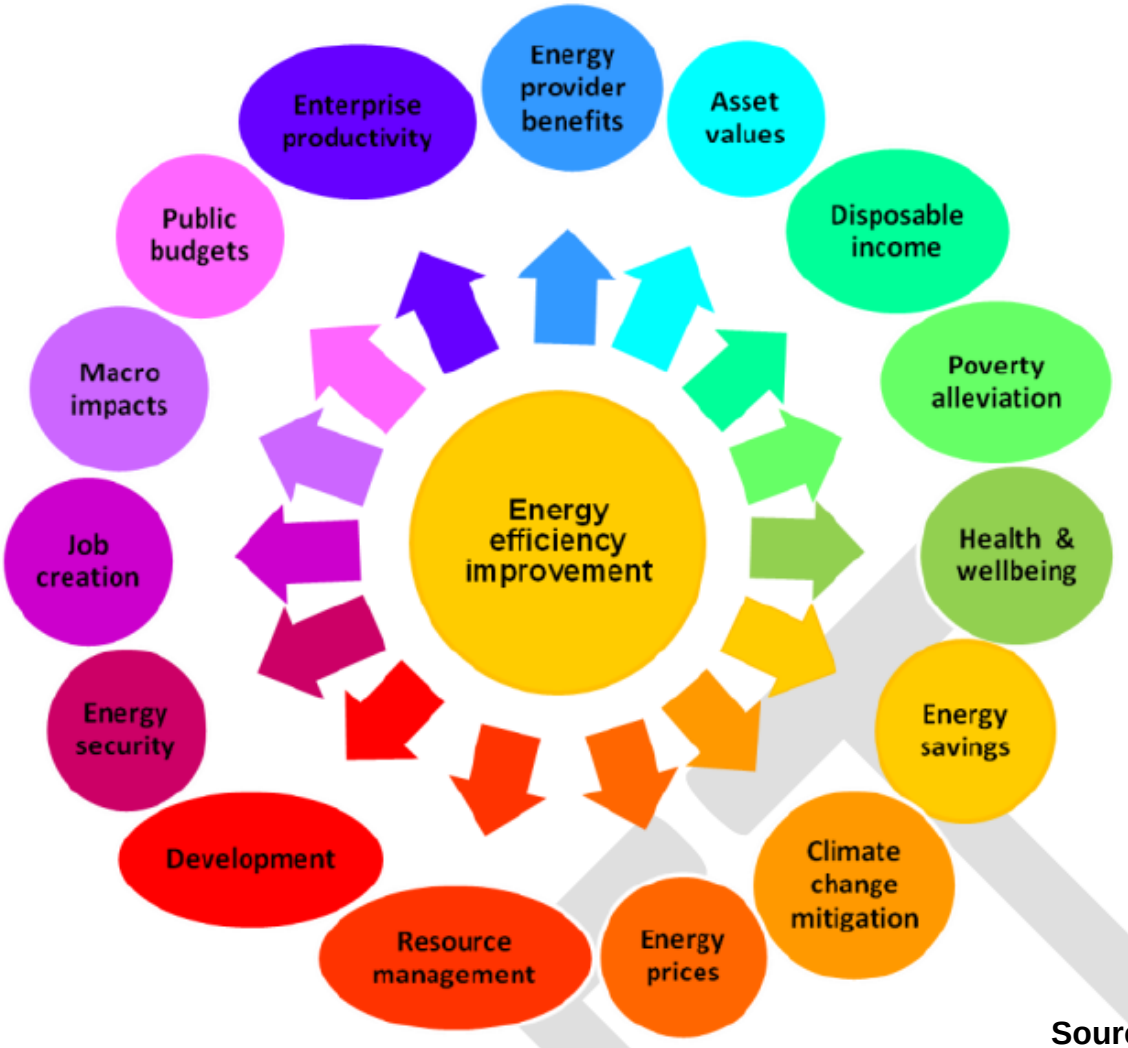
Energy Efficiency



Source: IEA

Energy efficiency progress can be observed across all sectors

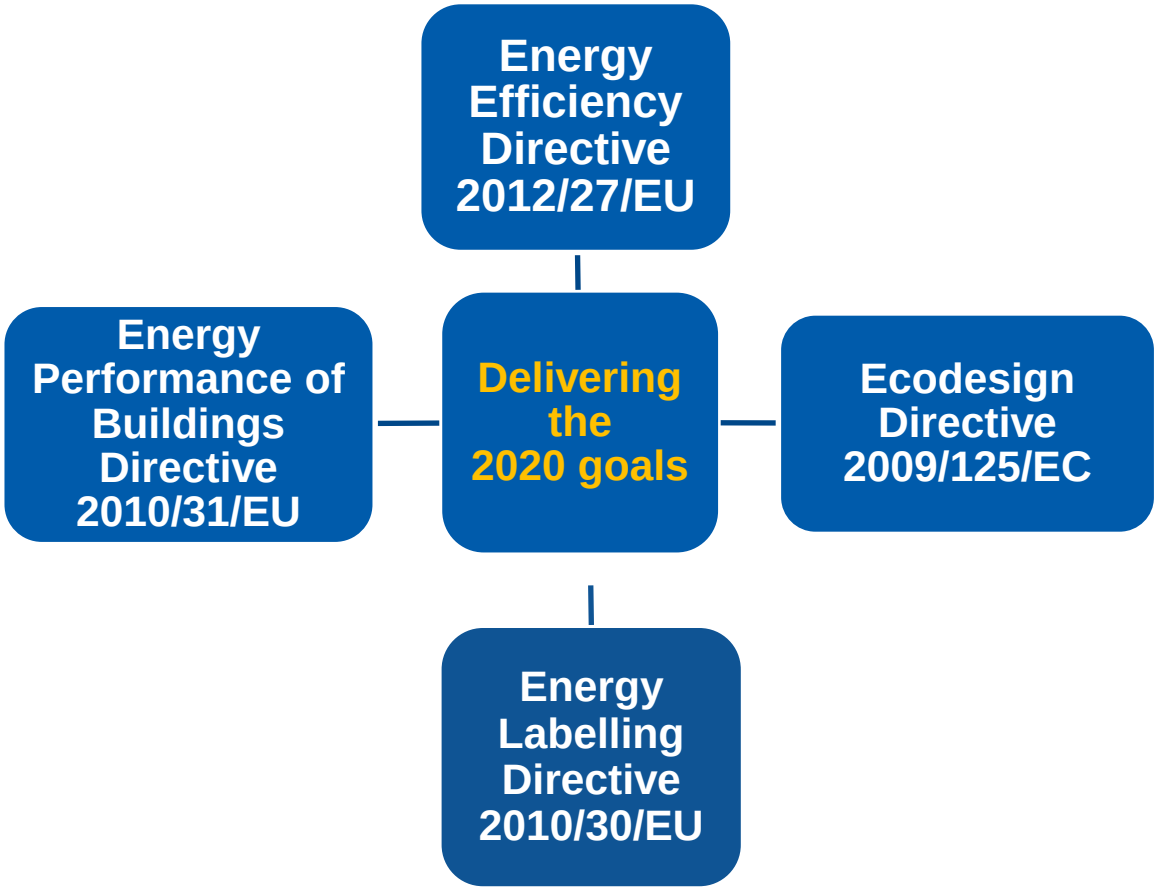
The share of refrigerators meeting the highest energy efficiency labelling classes (A and above) increased from less than 5% in 1995 to more than 90% 15 years later.

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.

Framework Energy Efficiency Policies



Energy Efficiency Directive 2012/27/EU

Transposition deadline was 5 June 2014

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Legislation

Volume 55

14 November 2012

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 (1) 1

★ 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 57

★ 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,

http://ec.europa.eu/energy/en/topics/energy-efficiency

Energy Efficiency Directive 2012/27/EU

Article 3: National energy efficiency targets

Article 4: Long term building renovation strategies

Article 5: Renovation of central government buildings

Article 6: Public procurement

Article 7: Energy efficiency obligations (or alternatives)

Article 8: Energy audits and energy management systems

Articles 9-11: Smart metering and billing

Article 14: CHP and district heating and cooling

Article 15: Energy efficiency in grids and demand response

Article 16-17: Qualification, training and information

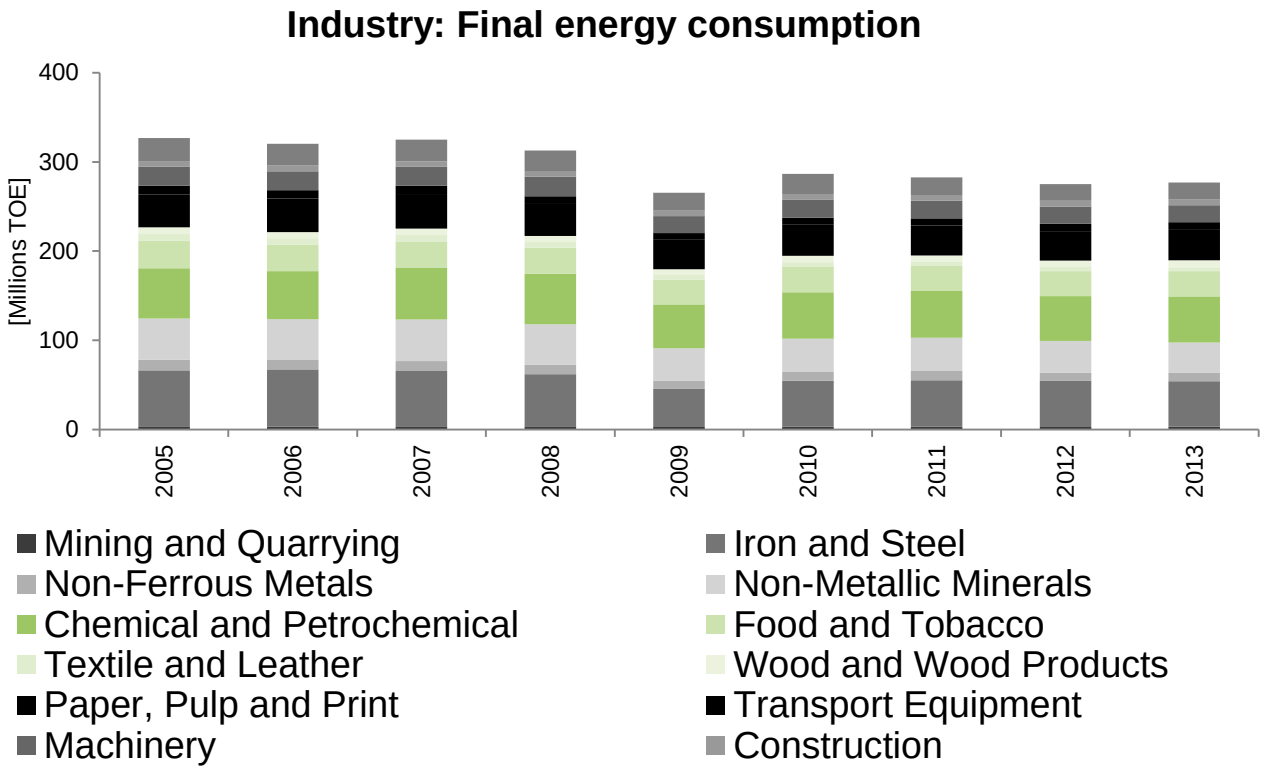
Article 18: Energy service markets

Energy Efficiency in Industry (I)

- Industry is one of the **largest consumers of energy** in Europe.

- **Several barriers** prevent the exploitation of the full energy efficiency potential in industry.

Energy consumption in industry (I)



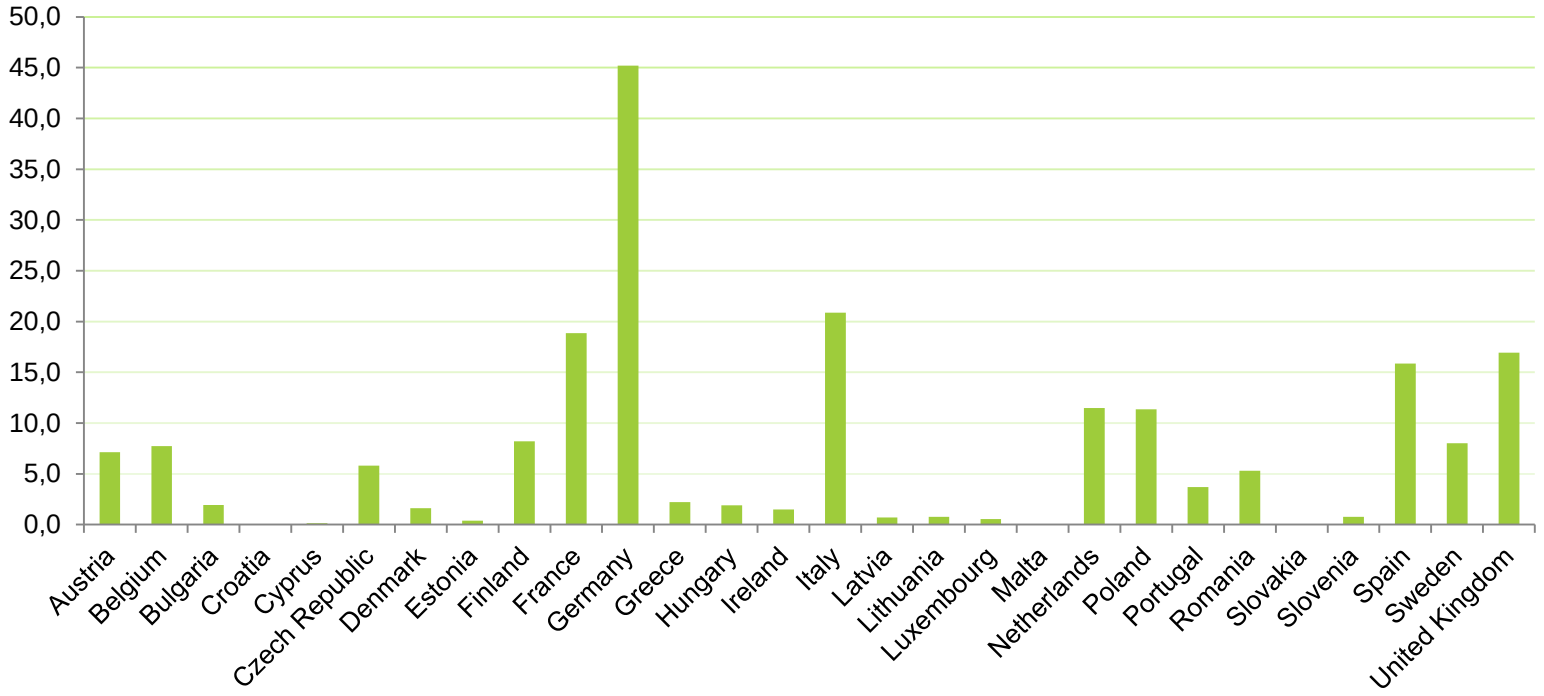
- 22%
technical potential

- 5 to 8%
2 years payback

Source: European Commission based on Eurostat data, ICF (2015 – ongoing)

Energy consumption in industry (II)

Heating and cooling consumption in industry, EU28 (2012), Mtoe



Source: European Commission based on Fraunhofer (2015 –ongoing)

Energy Efficiency in Industry (II)

- Policies and programmes to support EE **investments**:
  - **Article 8 EED** tackles information barriers by requiring that large entreprises undertake **energy audits** every 4 years;
  - Numerous initiatives exist at **national and local level** (e.g. voluntary agreements, efficiency networks, SMEs instruments);
  - Specific instruments and topics to support **Research & Innovation** in **Horizon 2020**.

Article 8

Obligations for large entreprises

- All sectors:
  - Not only industry;
  - No exclusion of ETS sectors.
- Harmonised EU definition of large enterprises (= those that are not SMEs).

Sustained energy efficiency improvements

- Energy or Environmental Management Systems
  - **Awareness at all levels of the organisation;**
  - **Regular energy review process;**
  - **Continuous improvement.**
- High quality, expertise and adequate supervision.

Article 8

Broad scope of national promotion activities (compulsory for Member States)

- **Training programmes** for auditors;
- Programmes encouraging **SMEs** to undergo energy audits and implement their recommendations;
- Programmes raising awareness among **SMEs** of energy managements systems.

These may encompass support schemes

For SMEs

- ✓ To cover the costs of an energy audit;
- ✓ To support the implementation of the recommendations from an energy audit.

General incentive or support schemes

- ✓ For the implementation of recommendations from energy audits and similar measures.

Horizon 2020

European Commission

Code	Call 2015 Topics	Type	Budget (M€)	Deadline
EE-02	*Design for new highly performing buildings*	*IA*	*9*	*4 Feb.*
EE-18	*Heat recovery in large industrial systems*	*RIA*	*10.6*	*4 Feb.*
EE-06	Demand response in blocks of buildings	IA	8	4 June
EE-11	ICT for energy efficiency	RIA	8.5	
EE-13	District heating and cooling	RIA	5.3	
EE-05	Buildings renovation	CSA	59.3	4 June
EE-07	Capacity building of public authorities	CSA		
EE-09	Empowering stakeholders	CSA		
EE-10	Consumer engagement	CSA		
EE-14	Efficient heating and cooling	CSA		
EE-15	EU product efficiency legislation	CSA		
EE-16	Energy efficiency in industry	CSA		
EE-17	Innovation through large buyer groups	CSA		
EE-19	Attractiveness of investments	CSA		
EE-20	Project development assistance	CSA		
EE-21	Energy services and financial schemes	CSA		

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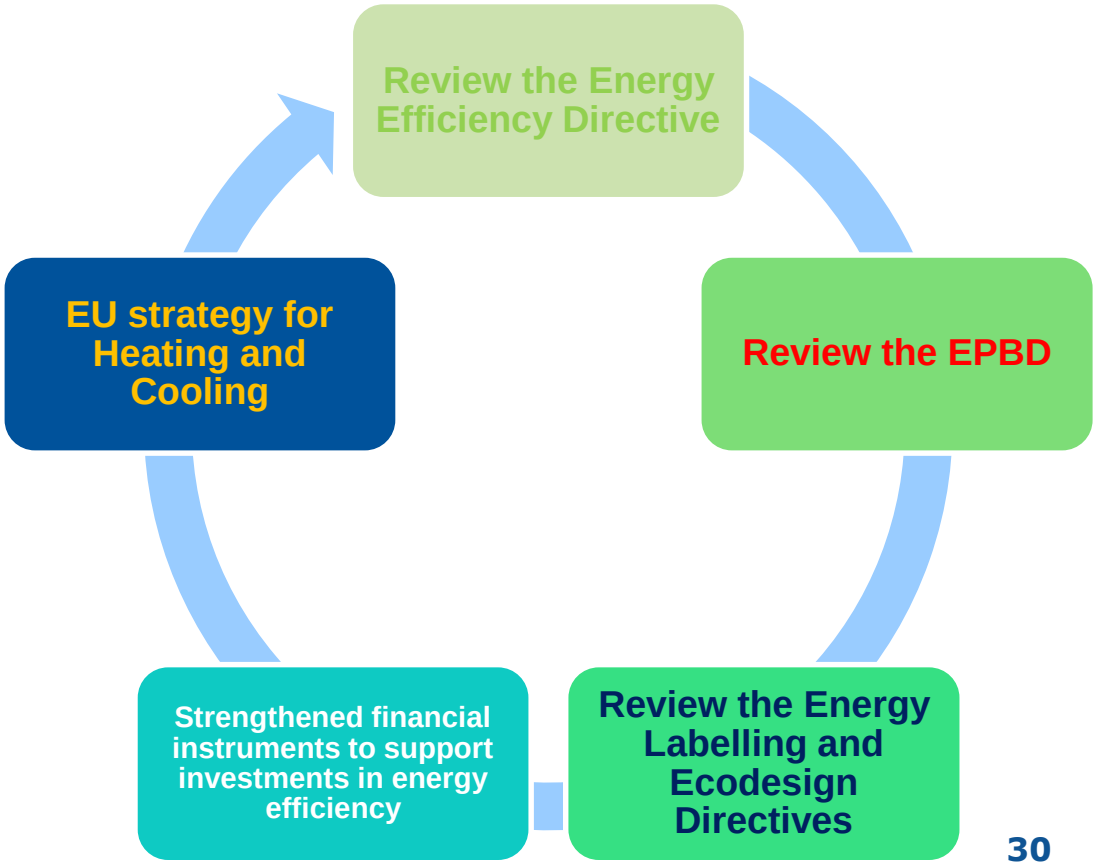
3 Energy efficiency

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.

Energy efficiency
Concrete actions



Source: Directorate-General for Energy

July 2014 Communication: Proposal of the European Commission

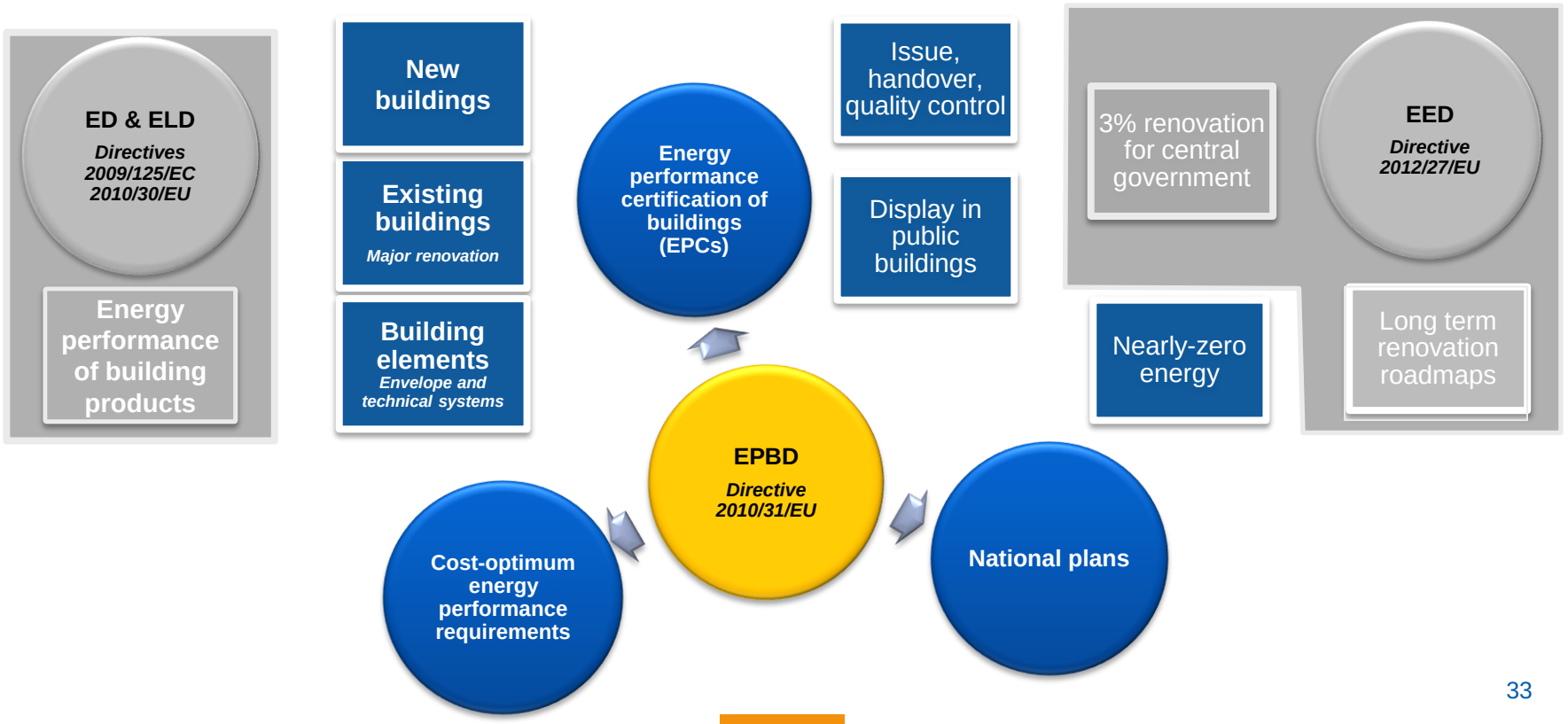
30% savings target by 2030 (vs. 2007 reference):

- EU target; flexibility for Member States;
- Based on absolute primary energy consumption;
- Review in 2017.

European Council Conclusions (October 2014)

- The indicative target at the EU level of at least 27% should
  - Be delivered in a cost-effective manner;
  - Respect the effectiveness of the ETS-system in contributing to the overall climate goals;
  - Be reviewed by 2020, **having in mind an EU level of 30%.**
- European Commission to propose
  - Priority sectors in which significant energy-efficiency gains can be reaped;
  - Ways to address them at EU level, with the EU and the MS focusing their regulatory and financial efforts on these sectors.
- EE targets will not be translated into nationally binding targets
- Member States are free to set their own higher national targets

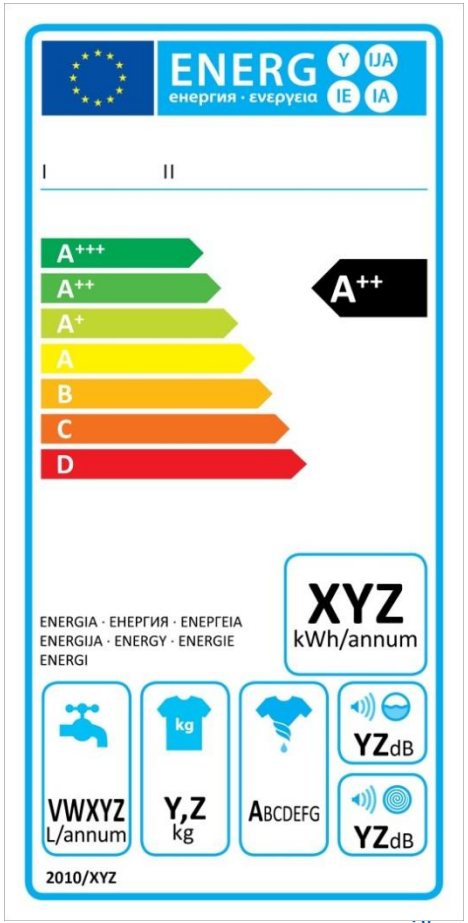
Energy efficiency instruments in buildings



Ecodesign and Energy Labelling: Results Achieved

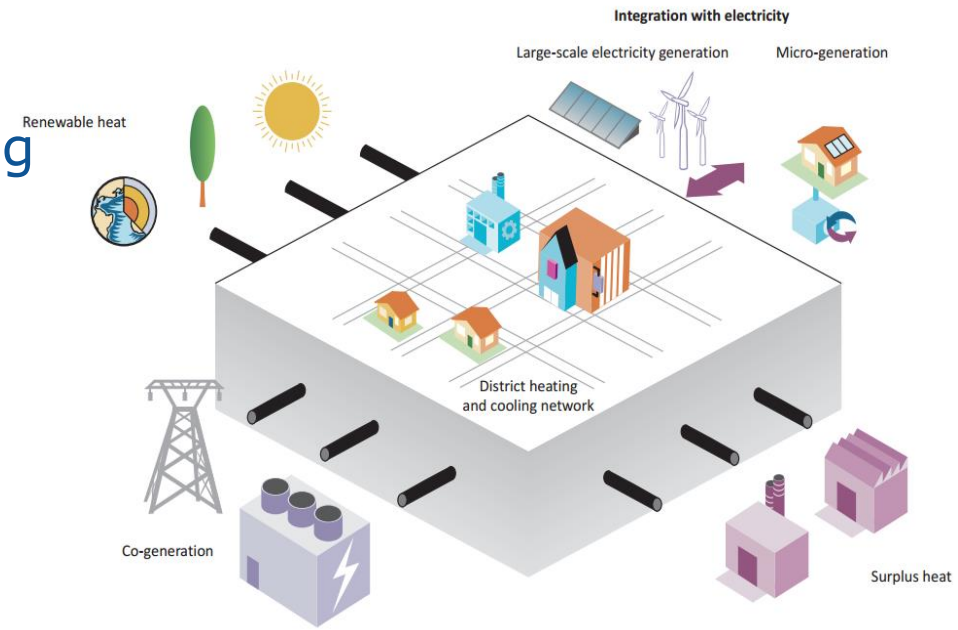
Next steps on Energy Labelling

- Review Energy Labelling Directive and some parts of Ecodesign Directive:
  - » Improve **effectiveness of the label** (e.g. back to A to G, including rescaling);
  - » **Strengthen compliance** (e.g. through better market surveillance and product registration).

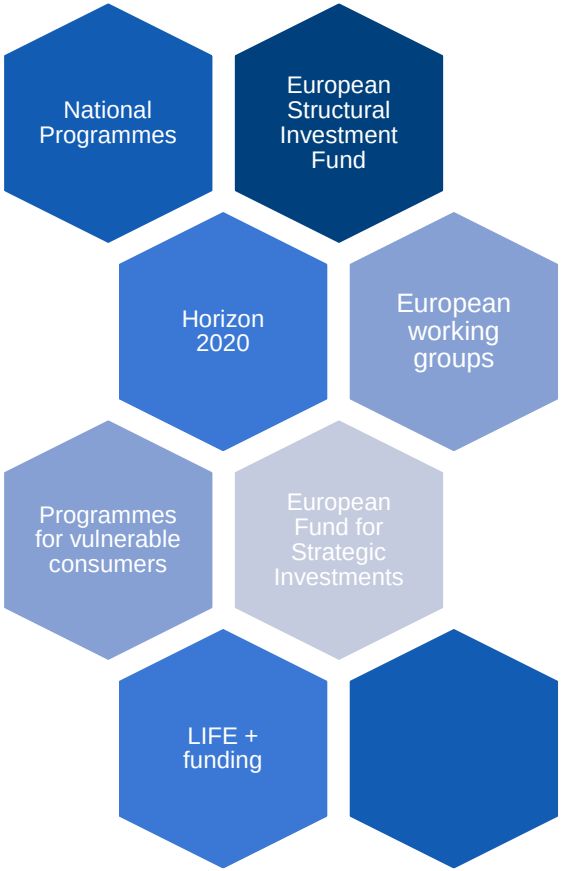


Heating and Cooling Strategy

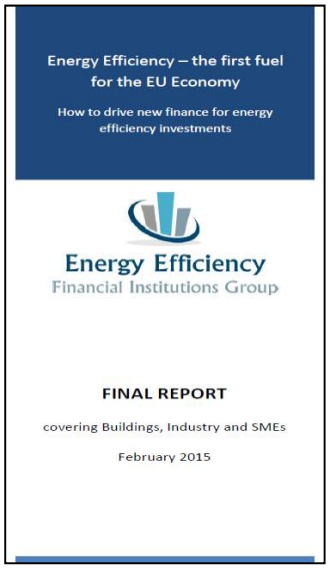
- Communication foreseen by **end of 2015**.
- Broad **consultation of stakeholders**.
- Will tackle heating and cooling consumption in **buildings**, **industry**, linking with **electricity** system, **waste heat**.
- **Input to the review** of ongoing initiatives (Energy Efficiency Directive, the Energy Performance of Building Directive and the Renewables Energy Directive).



Strengthened financial instruments to support investments in energy efficiency



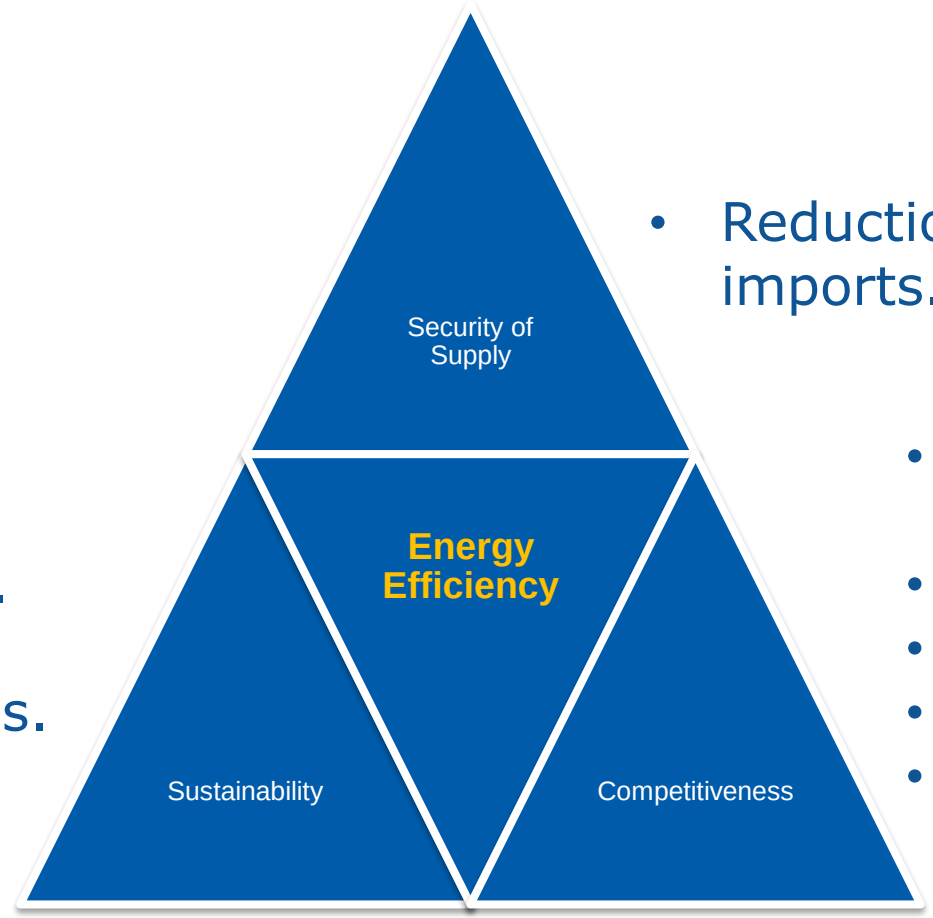
- **EEFIG** work continues – regional targeted events.
- **Efforts to enhance the project development facilities** – speeding up the development of project pipelines.



Smart Finance for Smart Buildings Initiative:

- Development of a **robust project database** for tracking and interpretation of projects' energy and financial performance;
- Development of the **common "language" to understand the energy efficiency investment** fundamentals based on evidence;
- Joint work with the financial sector and market participants towards the **commonly accepted framework** (standard underwriting procedures, contract elements, protocols, etc.).
- Voluntary agreement?

- Reduction of imports.



- Reduction of energy consumption.
- Reduction of CO_2 emissions.
- Health impacts.

- Electricity price effects.
- GDP.
- Employment.
- Research.
- Increased amenity value of EE buildings.

Thank you!

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