

Towards an integrated EU energy system:

Policy Context

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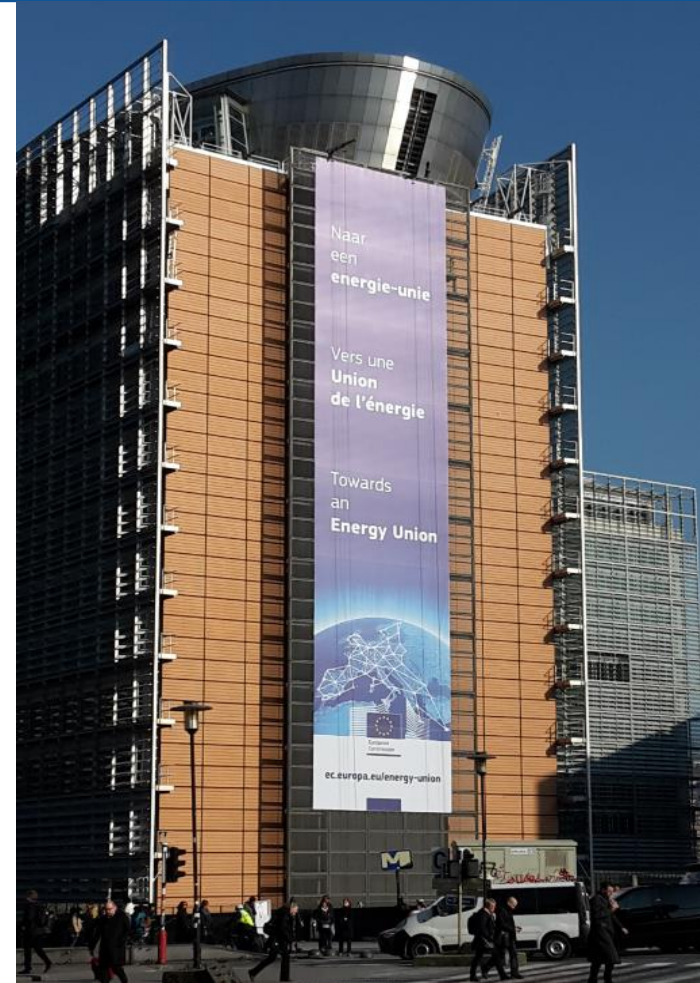
New Energy Technologies, Innovation and Clean
Coal



Torino, 27th of September 2016

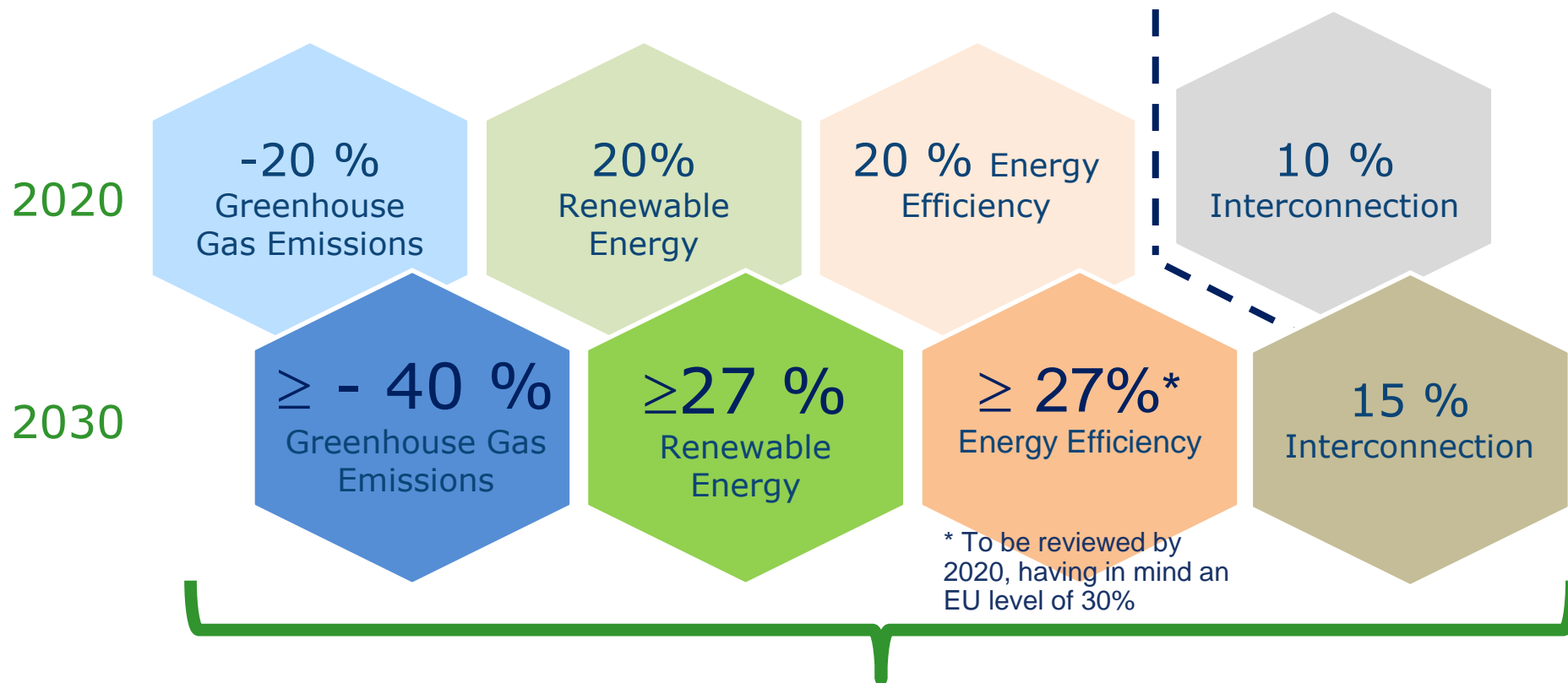
Main Policy Elements

- 🇪🇺 **2030 Climate & Energy Package**
- 🇪🇺 **Energy Union 5 pillars**
- 🇪🇺 **Research, Innovation & Competitiveness pillar**
- 🇪🇺 **Integrated SET-Plan**



Agreed headline targets

2030 Framework for Climate and Energy



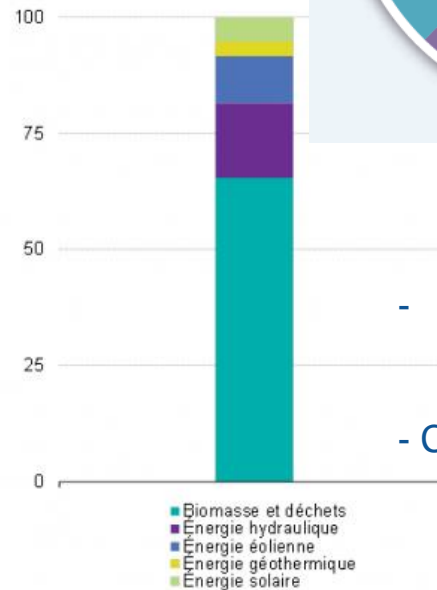
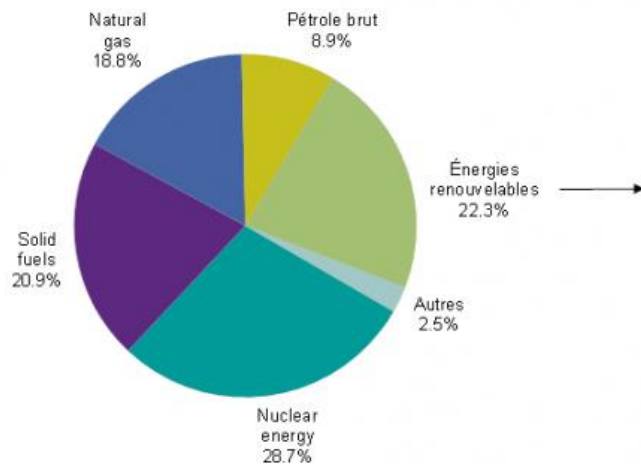
New governance system + indicators

The European Union Energy System

Key figures

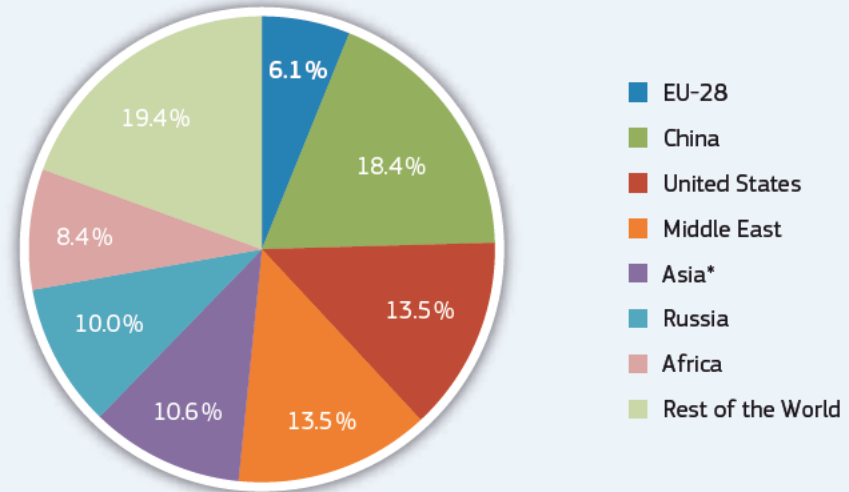


Production and imports (2014)



World Energy Production by Region (%)

Total 2011 = 13 202 Mtoe

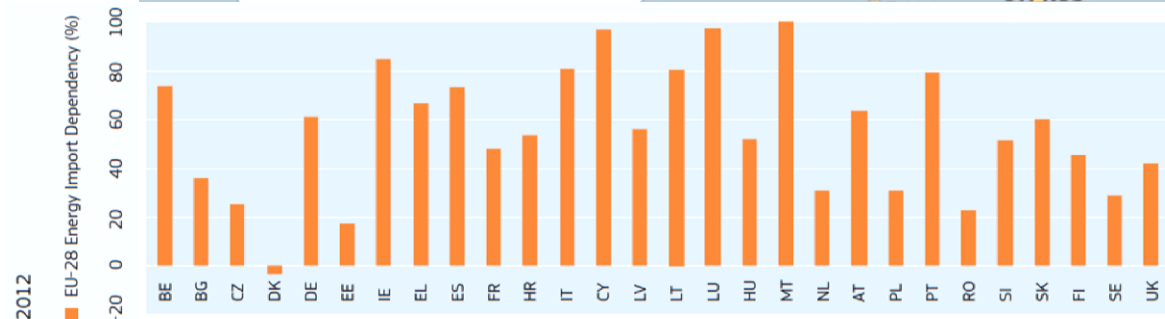


- Still a strong reliance on hydrocarbon
- Continuously increasing share of RES

The European Union Energy System (ii)

Diverse and fragmented

- + 2015: 28 Member States
- + EU legal framework but national regulations
- + Different energy production sources
- + Different histories, INCO relationship, sources of imports and dependencies
- + Different political priorities (green, shale gas, etc.)
- + Liberalisation makes good but unequal progress
- + Missing corridors between countries

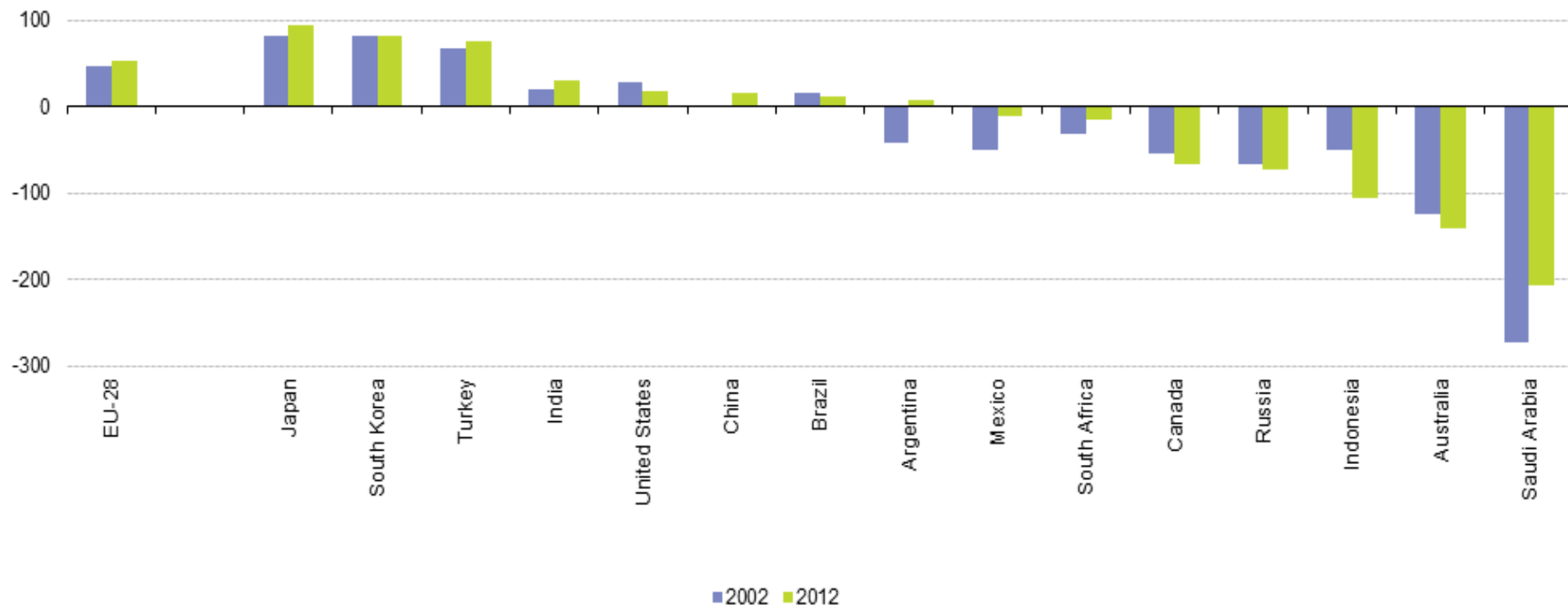




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Commission

Major energy challenges in Europe

Import dependency



(*) Net imports divided by the sum of gross inland energy consumption plus bunkers, expressed as a percentage. EU-28: 2002 and 2013. Non-EU G20 members: 2002 and 2012.
Source: Eurostat (online data code: tsdcc310) and the International Energy Agency (Balances)

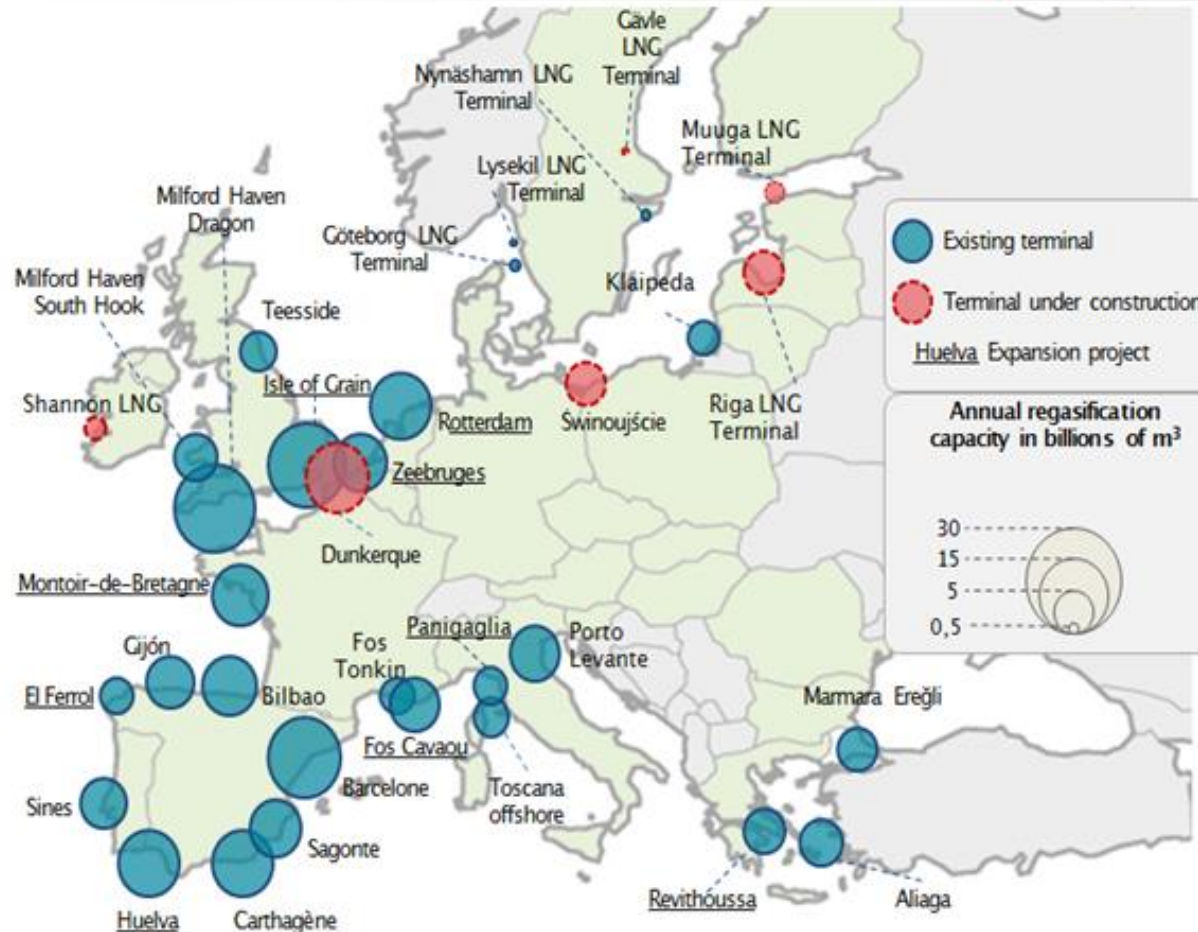
Major energy challenges in Europe (ii)

Import dependency



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Infrastructures Existing and planned LNG terminals in Europe



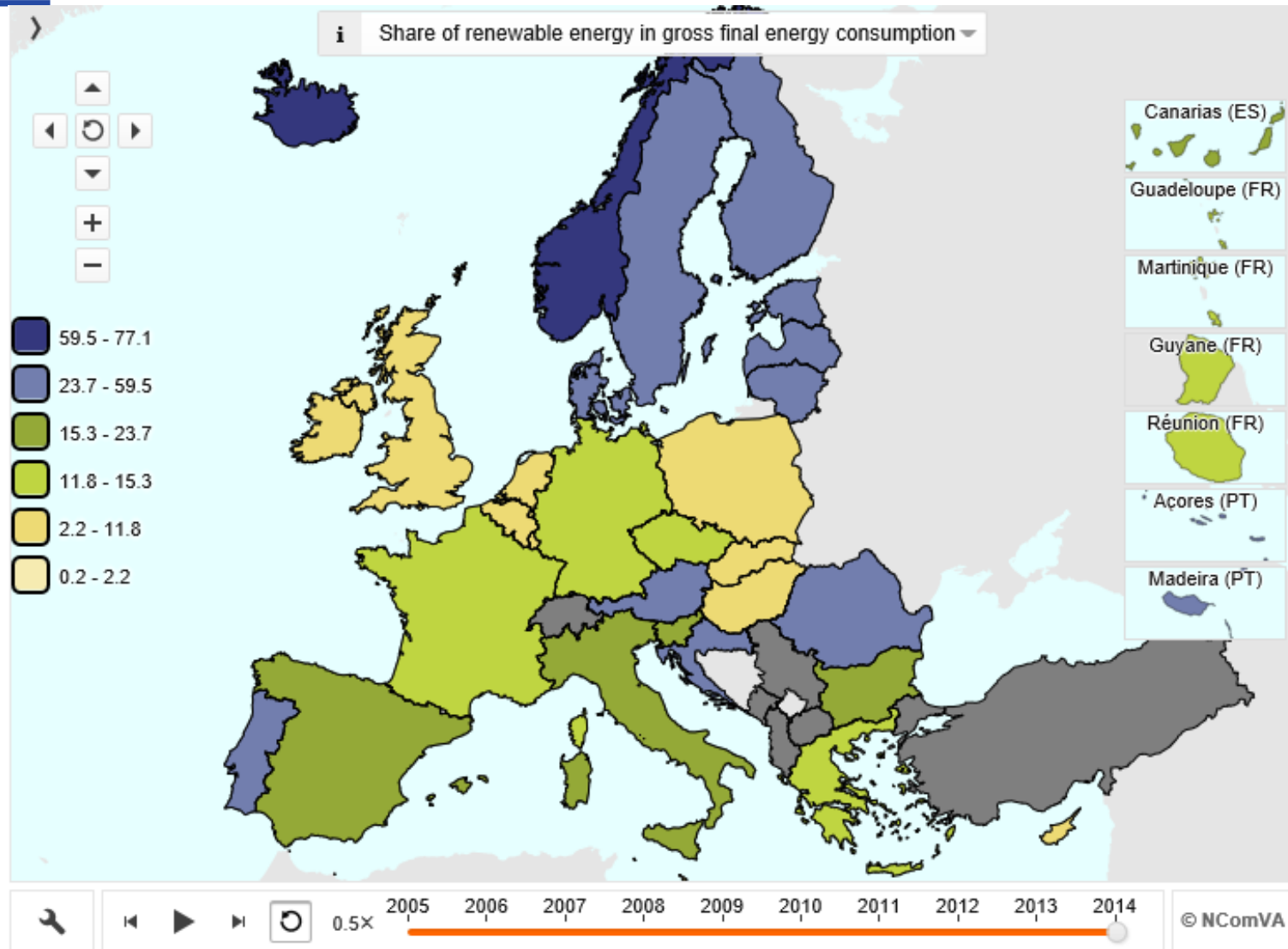
Source : GIIGNL, GLE(2015)



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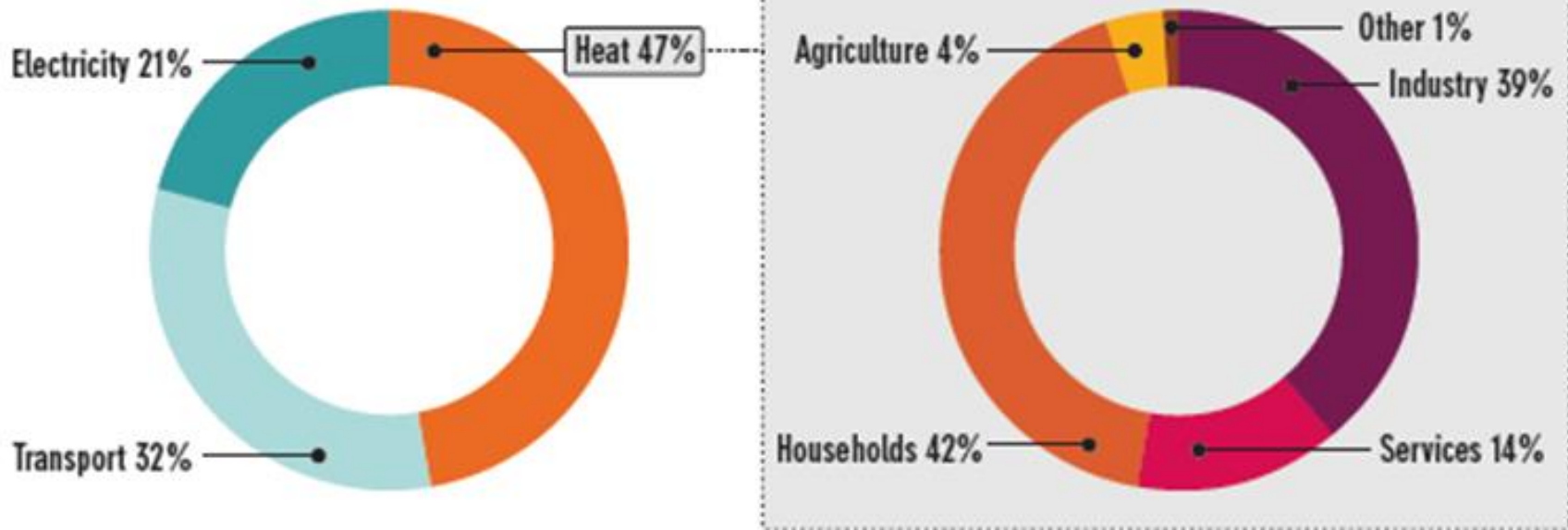
Major energy challenges in Europe (iii)

Decarbonisation

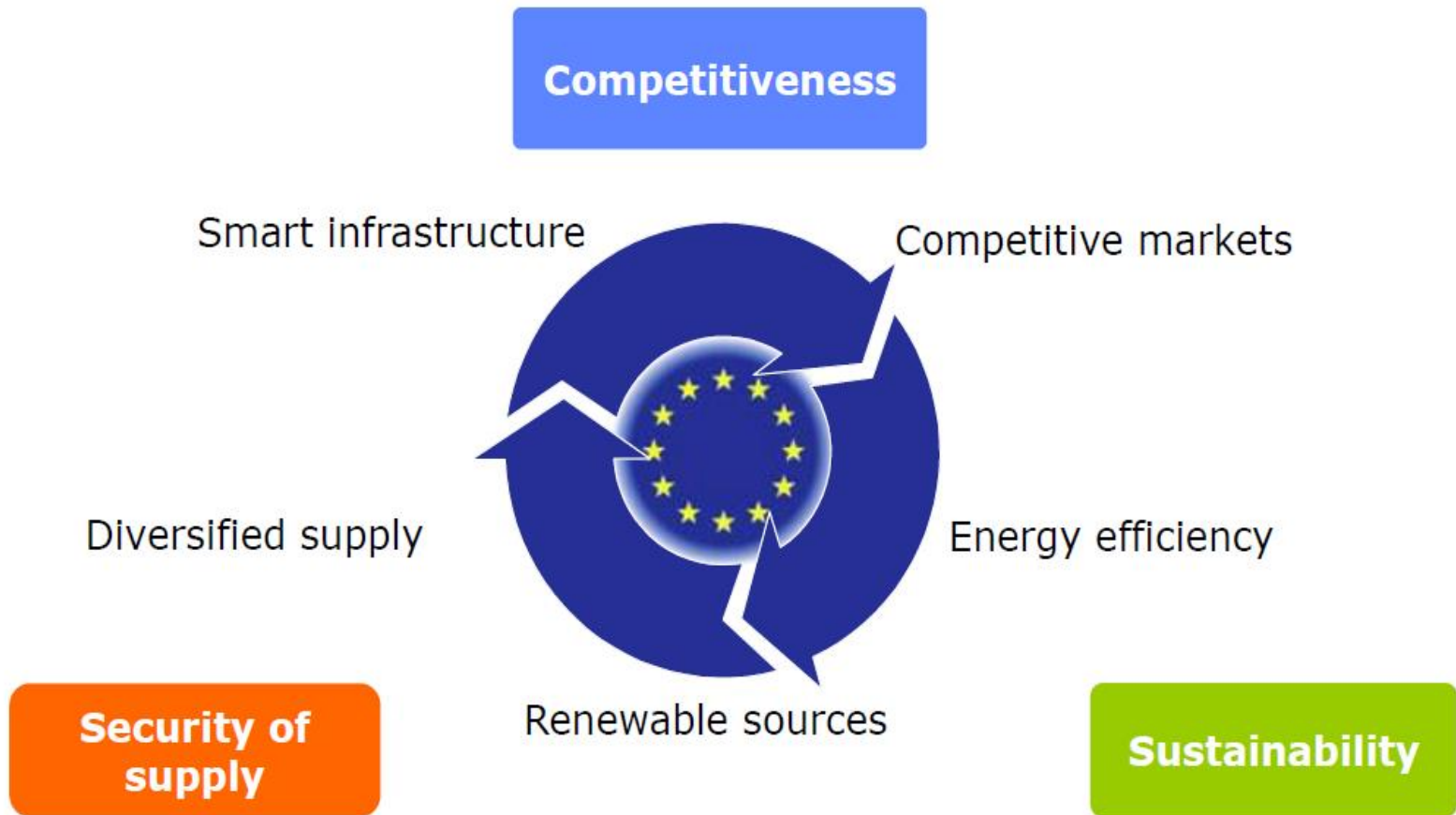


Major energy challenges in Europe (iv)

Final use of energy by type of energy



A "no regrets" scenario for Europe



By the end of 2016 we aim to have in place all legislation necessary to complete the Energy Union to be ready for being implemented of the post-2020 period



Transforming Europe's energy system

Earlier in 2016...

- The Security of Supply package and also 2 EU commitments under the Paris Agreement on climate change:
- the Effort Sharing Regulation setting the greenhouse gas emission reduction targets for Member States for 2030 and a proposal on integrating the land use sector into the EU's 2030 climate and energy framework.
- Strategy on low-emission mobility setting the course for the development of EU-wide measures on low and zero-emission vehicles and alternative low-emissions fuel

Next steps toward completing the Energy Union (1)

In October...

Energy Efficiency package including:

- **the revision and update of the Energy Efficiency Directive (EED) and**
- **the Energy Performance of Buildings Directive (EPBD)**

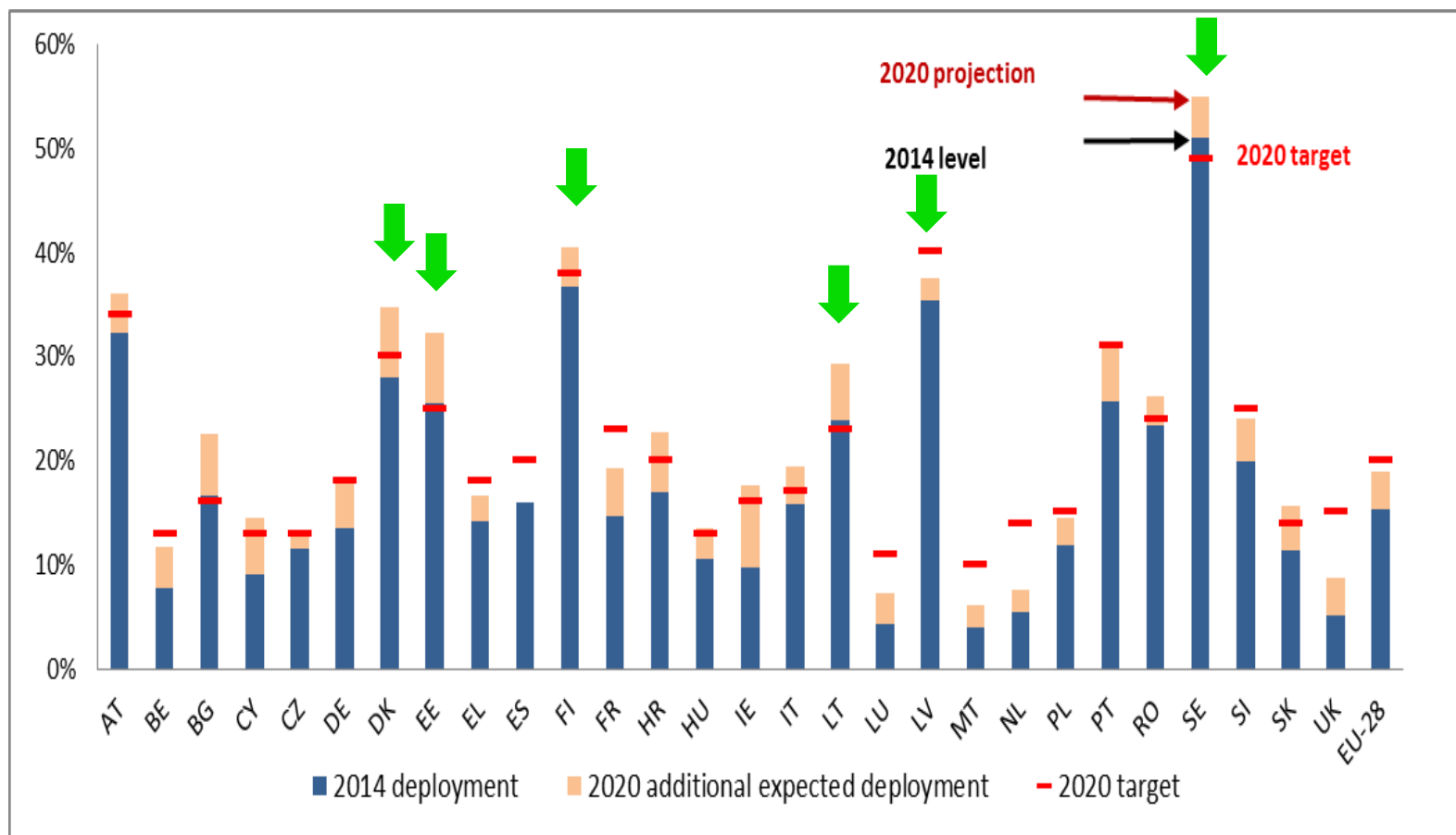
with the aim of updating the existing energy efficiency policy and legal framework to reflect the new energy efficiency target for 2030.

Next steps toward completing the Energy Union (2)

Later this year EC will present initiatives:

- **to ensure a new Market Design for a truly integrated EU electricity market;**
- **a revised Renewable Energy Directive and bioenergy sustainability policy for 2030, focusing on a cost-effective, sustainable and actual delivery of a RES share of at least 27% in the EU in 2030;**
- **a Communication on the most vital energy infrastructures, as well as a revision of the Regulation on security of electricity supply.**

National RES deployment (2014 and 2020 projections)



Next steps toward completing the Energy Union (3)

Additional proposals before the end of 2016:

- **Legislative proposal on the Governance of the Energy Union (preparing the ground for creating Integrated National Energy and Climate Plans for the period of 2021 to 2030).**
- **An Energy Union research, innovation and competitiveness strategy for a low carbon economy.**
- **Second State of the Energy Union**



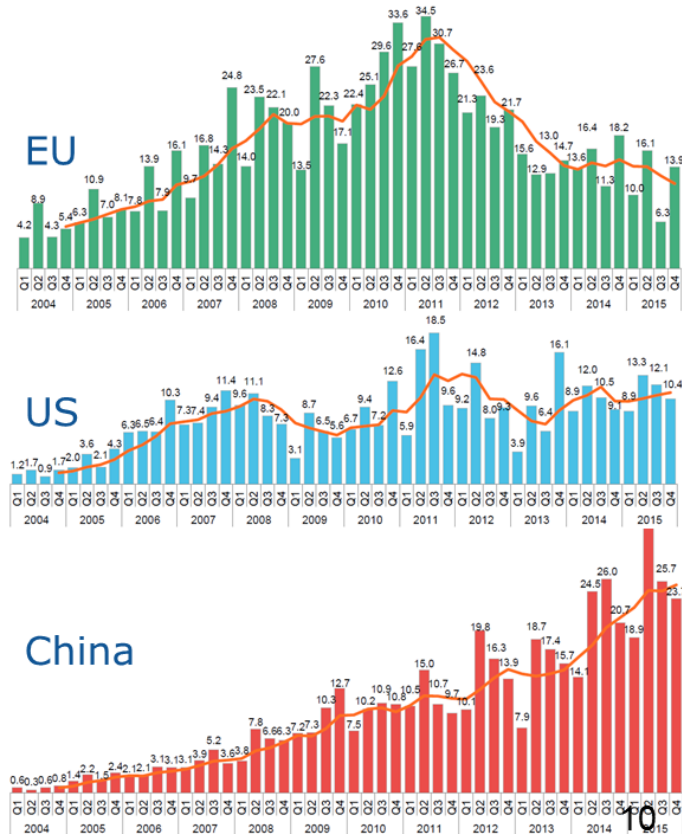
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The Energy Union 5th pillar (R, I & C)

Research, Innovation and Competitiveness - How to maintain global leadership?

Investment in clean energy

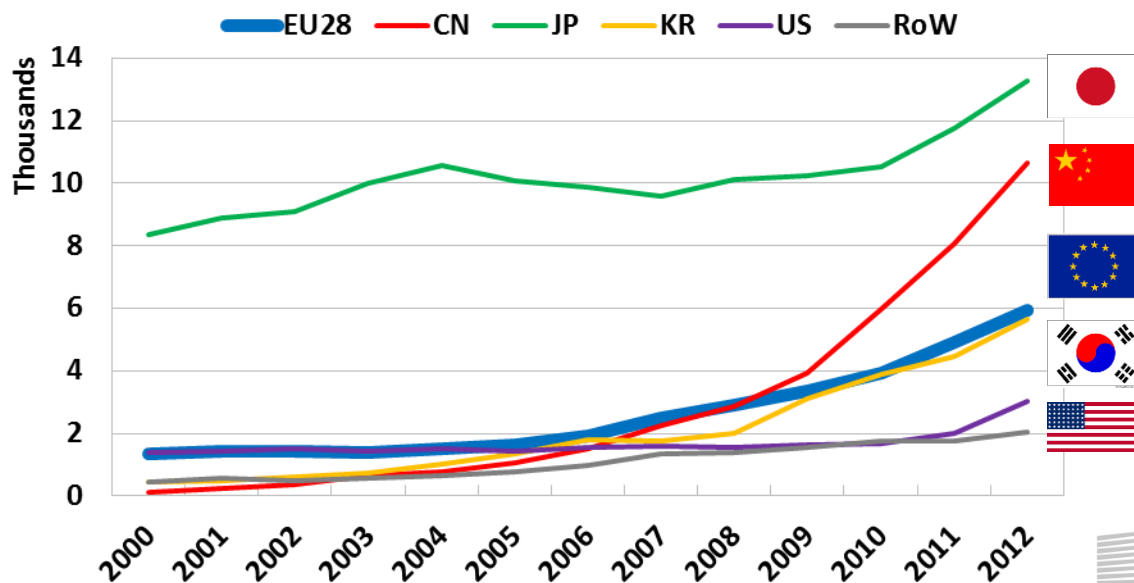
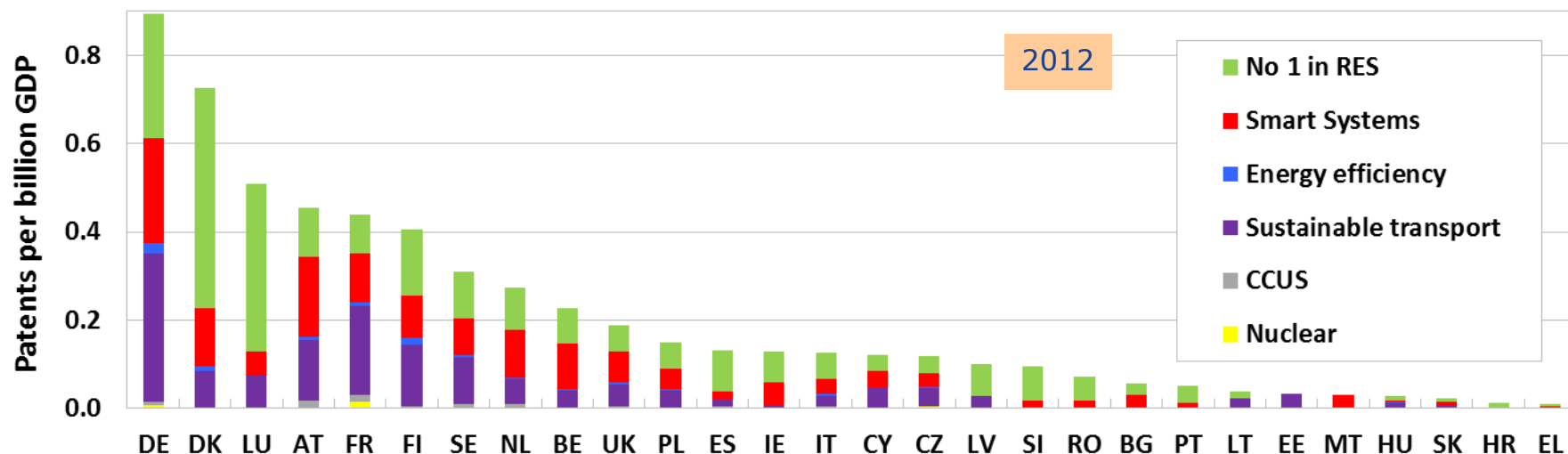
Source: Bloomberg



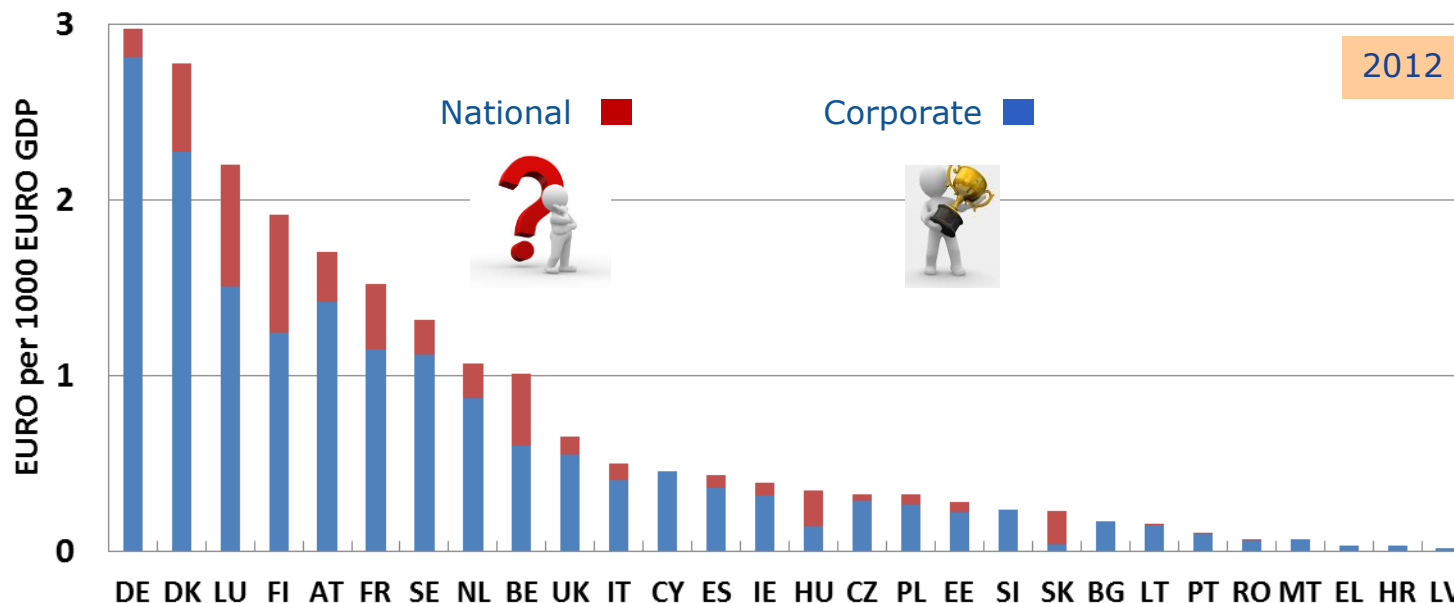
Source: Bloomberg, European Commission (JRC)

- Energy Union R&I focus areas:
 - Number 1 in RES
 - Consumer – smart grids, smart home appliances, smart cities
 - Efficient energy systems
 - More sustainable transport systems
- And two additional priorities:
 - A forward-looking approach to CCS and CCU for the power and industrial sectors
 - Nuclear energy – the use of the highest standards of safety, security, waste management and non-proliferation;

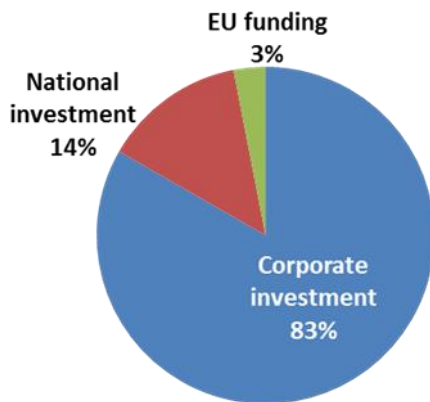
Assessing European innovation: Trends in patents



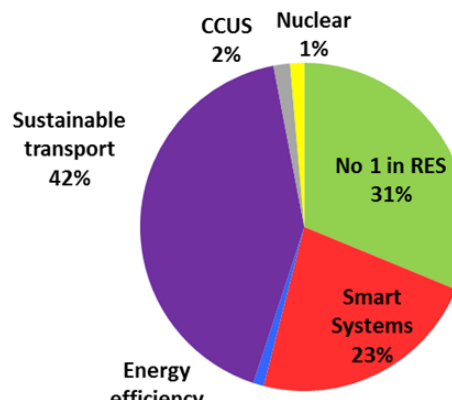
Assessing European innovation: Investments



R&I Investment breakdown



Total



Corporate



European Commission

New impulse to the partnership

Principles: Targeted focus, integrated approach, new governance

Changes:

SET Plan in the Energy Union

Widening to new actors

More joint actions

Transparency, indicators and reporting

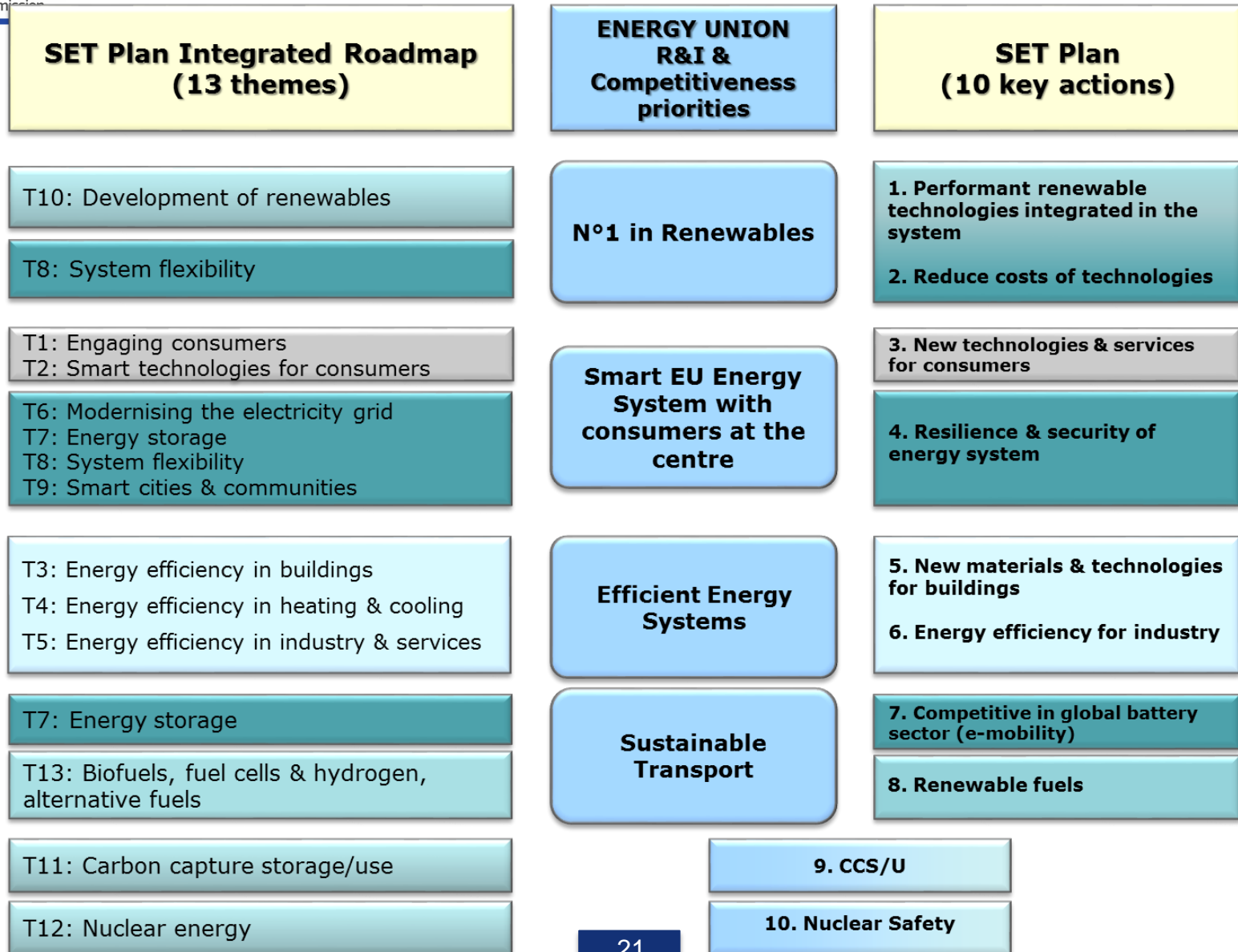
Monitoring and knowledge sharing





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Integrated Roadmap, Energy Union and SET Plan



Towards an Integrated SET-Plan: 10 Key Actions

Number one in RES

1) Technology leadership by developing highly performant renewables technologies and their integration in the system\$



2) Cost efficient key technologies

Targets have been set for 5 key RES technologies:

Offshore Wind, CSP, Solar, Ocean, Geothermal



Consumer at the centre of the future energy system

- 3) Energy consumers, Smart cities & communities
- 4) Resilience, security and smartness of the energy system

The consultation on those targets will be concluded later this year



Efficient energy systems

New materials and technologies for energy efficiency solutions for buildings

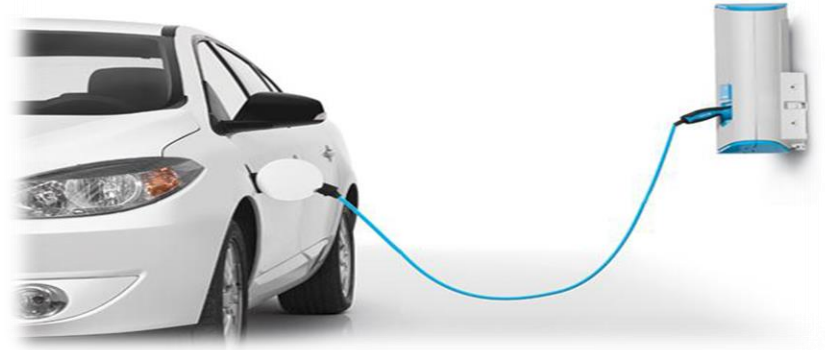
Continue efforts to make EU industry less energy intensive and more competitive

Targets have been endorsed on both actions.



Sustainable transport

Become competitive in the global battery sector



Targets have been endorsed

Renewable fuels needed for sustainable transport solutions



Targets will be endorsed later this year

A forward-looking approach to carbon capture and storage (CCS) and carbon capture and use (CCU)



Increase safety in the use of nuclear energy



Targets soon to be endorsed for both actions

Setting targets and implementing the SET Plan

- The SET Plan has built strong collaboration and commitment among EC, the MS and research and industrial actors through a highly participatory process.
- We are commonly setting R&I priorities with the aim to maintain – or regain in some cases – the EU's global leadership in low-carbon technologies and solutions, and support climate change policies.

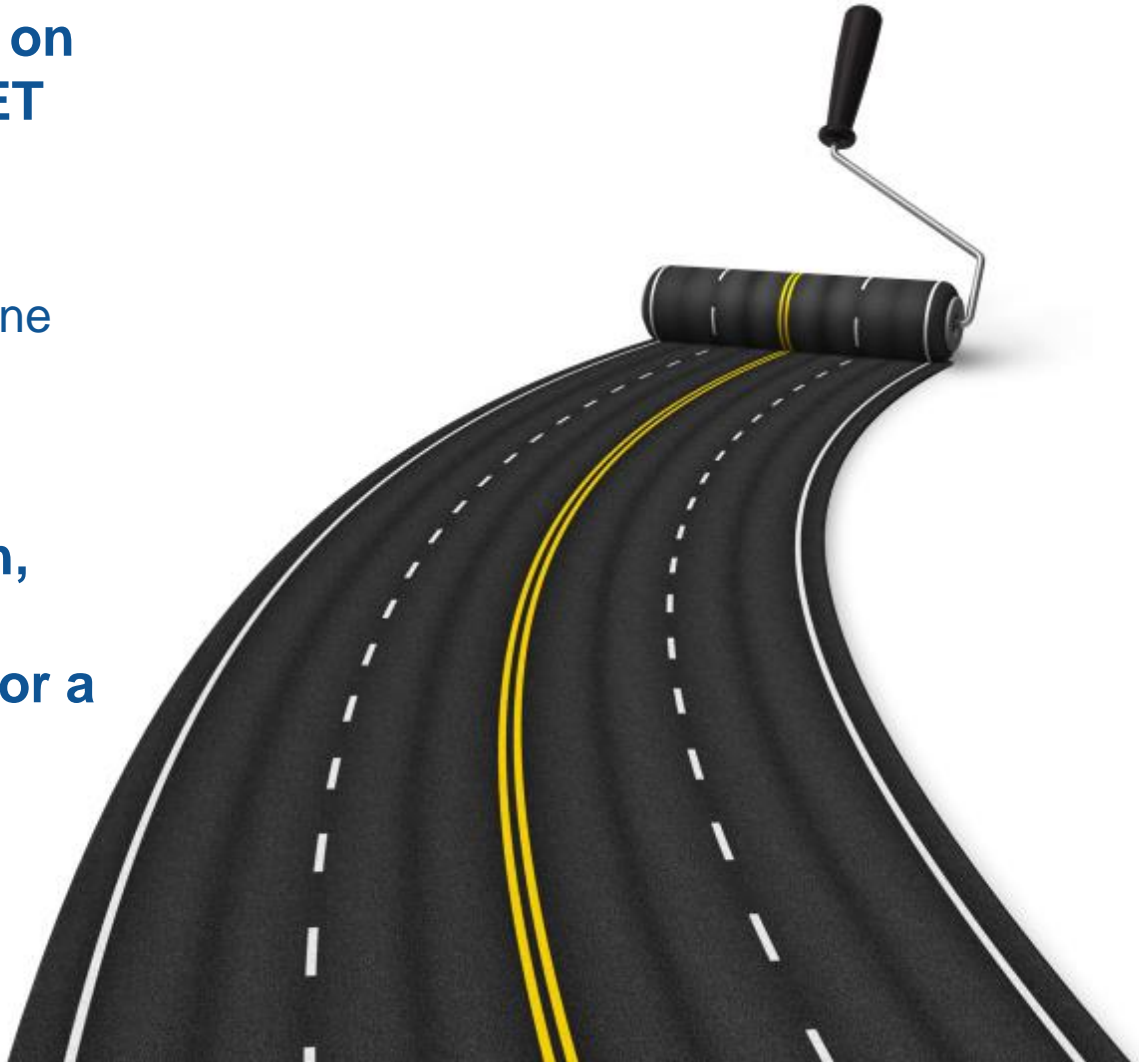


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Next steps

- **Complete the consultation on setting targets for all 10 SET Plan actions**

Form working Groups for the implementation of the targets, define the participants
- **An Energy Union Research, innovation and competitiveness strategy for a low carbon economy**





SET-Plan 2016 - CEE Conference

- ✓ **"Energy Union: Towards a transformed European energy system with the new Integrated Research, Innovation and Competitiveness Strategy"**
- ✓ 30/11- 02/12/2016, Bratislava
(Slovakia's EU Council Presidency)
- ✓ Unique platform to discuss synergic action of EU energy policy and research and innovation policy in transforming the energy system



**Thank you
for your attention !**

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