PONT Working Europe Seminar, Brussels, 27 March 2017

The EU energy, climate and environmental policies: An overview

Simone Tagliapietra
Research Fellow, Bruegel
Senior Researcher, Fondazione Eni Enrico Mattei
Lecturer, Universita' Cattolica del Sacro Cuore

Energy: at the core of the EU integration

Treaty of Paris, 1951

European Coal and Steel Community

Treaty of Rome, 1957

European Atomic Energy Agency

Energy seen by EU's Founding Fathers as a major instrument to build **cooperation** and **solidarity** among European countries

The rationale behind ECSC & Euratom

- To provide a **common policy** with a precise set of **rules** and **instruments** based on exclusive supranational powers conferred to a central institution:

- The **High Authority** in the case of ECSC

- The **Supply Agency** in the case of Euratom

- Together with **European Economic Community**, foundations of current **EU**

The shooting star-trajectory of EU energy policy

- After initial momentum, role of energy in EU construction **weakened** over time
- Single European Act of 1986…
- Treaty of Maastricht of 1992…
- Treaty of Amsterdam of 1997…
- Treaty of Nice of 2001…

- …**None of these treaties gave to the EU clear competences on energy!**

Energy under the Treaty of Lisbon (2007)

- Energy included in the EU **shared competences**
- Energy Title (XXI) represented by **Article 194 TFEU**

In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:

(a) ensure the functioning of the energy market;

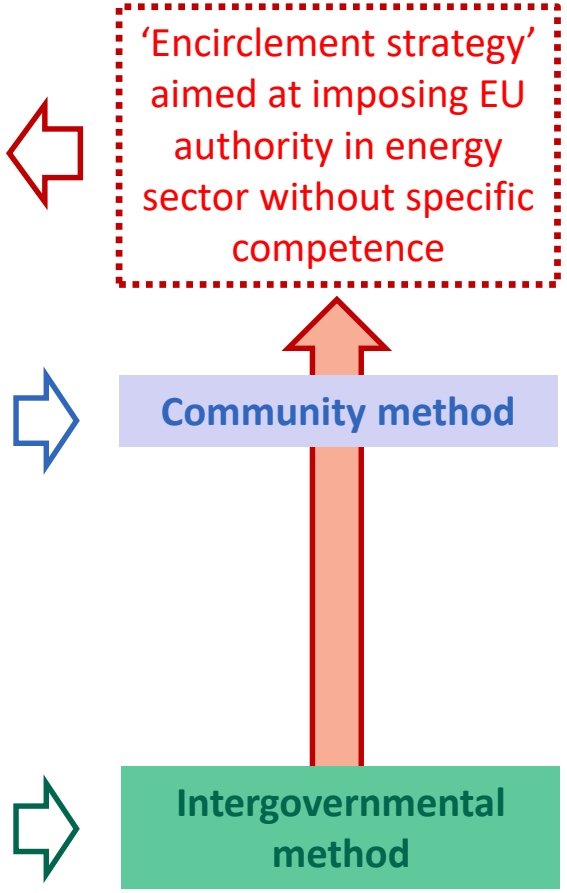
(b) ensure security of energy supply in the Union;

(c) promote energy efficiency and energy saving and the development of renewable forms of energy; and

(d) promote the interconnection of energy networks.

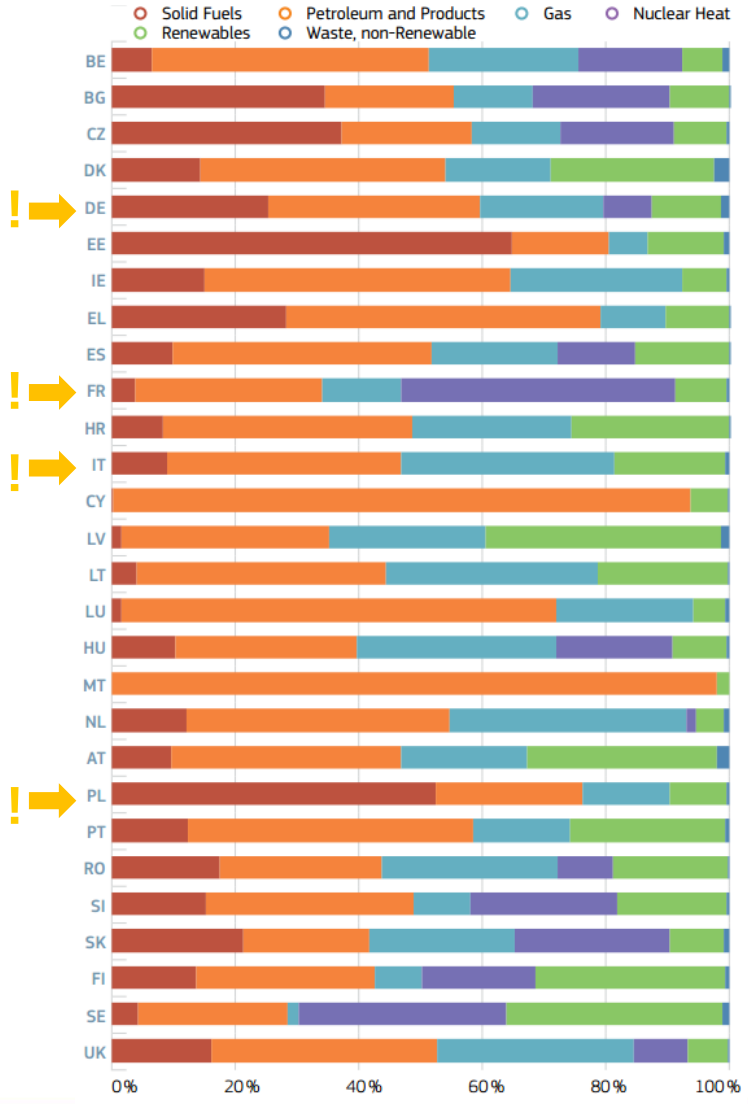
Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph.

Such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply.



Behind the EU energy policy fragmentation

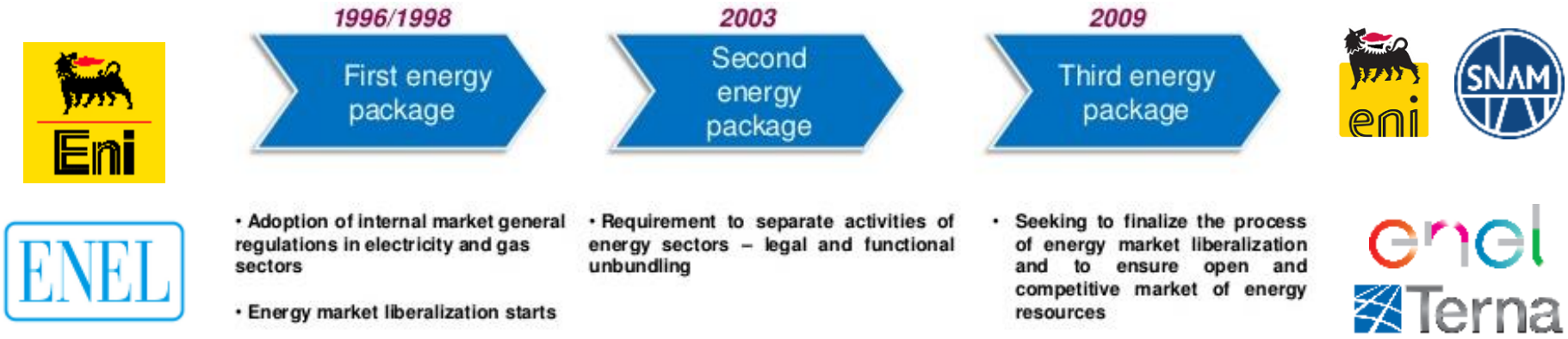
- **Reluctance of EU countries** to give the EU a clear competence on energy policy due to:
- **Security concerns:** energy considered as highly strategic for the national interest!
- **Divergent interests:** EU countries have very different energy mixes and therefore also very different energy security priorities!



The EU legislative struggle to fill the 'energy gap' of the Treaties: the competitiveness tool

- Using the **'encirclement strategy'** the EU has created a wide legislation on energy-related issues, particularly using the **competitiveness** and **environmental** tools

- In particular, since the **1990s** the EU has adopted a series of Directives aimed at liberalising electricity and gas markets, with the aim of opening-up national markets to competition and of creating an EU single energy market



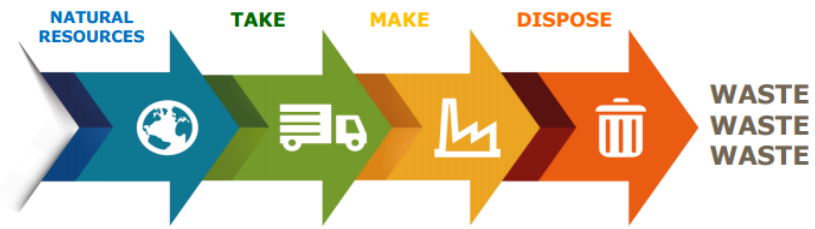
The EU legislative struggle to fill the 'energy gap' of the Treaties: the environmental tool

- Since the 1970s, the EU has agreed over 200 pieces of legislation to protect the environment
- European Environment Agency (EEA) created in 1994 to develop and maintain indicators and reports on the state of the environment
- Encouraging eco-innovation via research and innovation projects (Life, H2020)
- Promoting green public procurement
- Promoting eco-labelling standards
- Protecting biodiversity
- Enhancing protected areas (Natura 2000 project)

The new EU environmental struggle: creating a circular economy

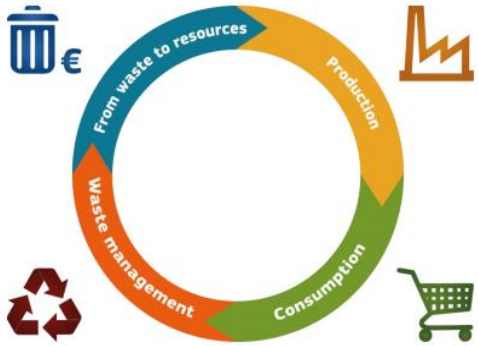
From a linear economy….

- lost value of materials and products
- scarcity of resources, volatile prices
- waste generated, environmental degradation & climate change



…to a circular economy

- the value of products, materials and resources is maintained in the economy for as long as possible
- waste generation is minimised



The strategy to develop a circular economy

Production

Objectives
- provide incentives to boost circular product design
- innovative and efficient production processes

Key actions
- durability, reparability and recyclability of products – Ecodesign Directive, Extended Producer Responsibility
- best practices for waste management and resource efficiency in industrial sectors - BREFs
- industrial symbiosis, remanufacturing
- More coherent policy framework for products, tools for SMEs

Consumption

Objectives
- repair and reuse of products
- reliable information to consumers

Key actions
- better labelling: EU Eco-label, Environmental Footprint
- new forms of consumption – collaborative economy, digital platforms
- guarantees and action on false green claims
- independent testing programme to assess possible planned obsolescence
- Circular Economy criteria in Green Public Procurement

Market for secondary raw materials

Objectives
- increase the use of secondary raw materials
- increase the use of recycled nutrients and water
- safely managed chemicals
- improve knowledge of material flows

Key actions
- EU regulation on fertilisers
- legislative proposal on minimum requirements for reused water
- quality standards for secondary raw materials
- analysis on the interface between chemicals, product, and waste legislation
- EU-wide electronic system for cross-border transfers of waste

Waste management

Objectives
- improve waste management in line with the EU waste hierarchy
- address existing implementation gaps
- provide long-term vision and targets to guide investments

Key actions
- revised EU targets for recycling 65% of municipal waste and 75% of packaging waste by 2030
- new binding target to reduce landfill to a maximum of 10% of total waste by 2030
- improve waste management, new investments in recycling capacity, avoid overcapacity in incineration and mechanical-biological treatment
- ensure coherence between waste investments under EU Cohesion Policy and the waste hierarchy

Towards a full-fledged EU energy and climate policy: the double leap forward of 2005

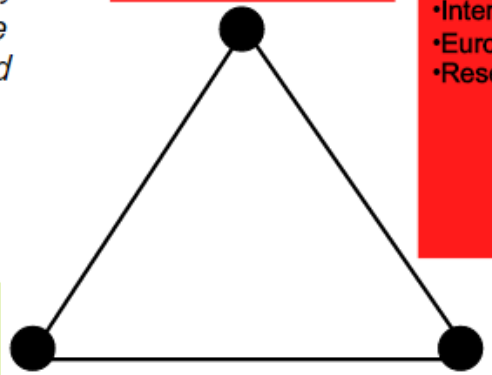
- Urged by globalization, **Tony Blair** pushed energy policy at top of EU agenda
- At **Hampton Court Summit**, EU leaders agreed to create a **truly European energy and climate policy**
- **March 2006**: EC's Green Paper '**A European Strategy for Sustainable, Competitive and Secure Energy**'

- **Launch of the EU Emission Trading System (ETS)**

The 2006 Green Paper

Strategy of the Green Paper:
Common energy policy goals

Each goal is equally important . One cannot be achieved without the other



Competitiveness "Lisbon Agenda"

- **Internal Market**
- **Competition**
- **Interconnections** (Trans-European networks)
- **European electricity grid**
- **Research and innovation**
  - Clean coal
  - Carbon sequestration
  - Alternative fuels
  - Energy efficiency
  - Nuclear

Sustainable Development "KYOTO"

- Renewable energy
- Energy efficiency
- Nuclear
- Research and innovation (see Lisbon)
- Emission trading

Security of supply

- International Dialogue
- European stock management (oil/gas)
- Refining capacity and storage of energy
- Diversification

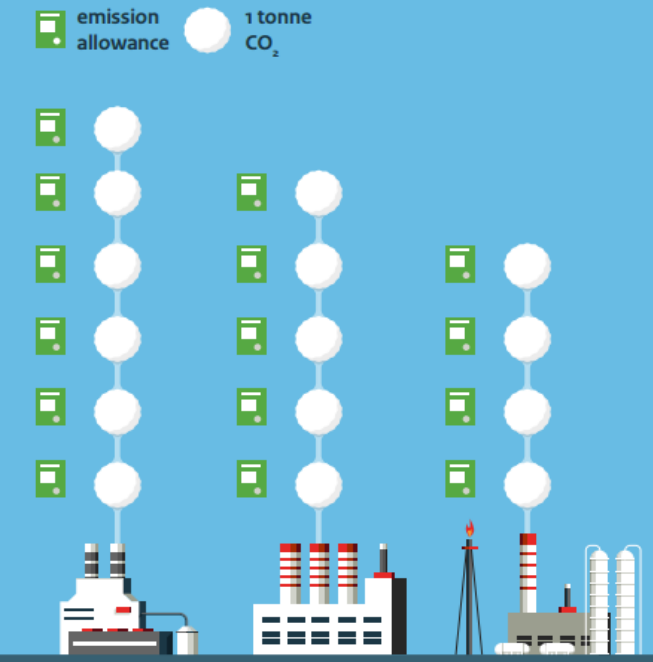
Triangle of EU energy policy still valid today!

The EU Emission Trading System

Emissions trading is the trade in emission allowances, which grant the right to emit a specific quantity of CO_2. The EU ETS operates on the 'cap and trade' principle.

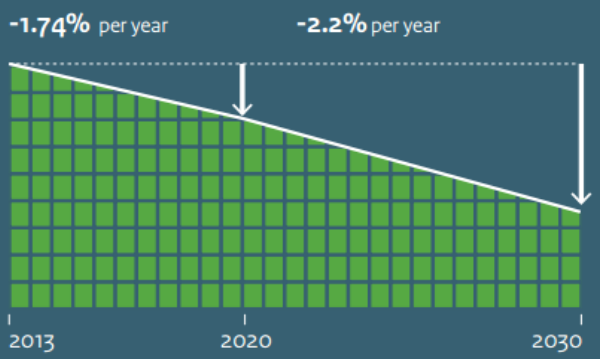
Emission allowance

An emission allowance offers the right to emit 1 tonne of CO_2. All EU ETS companies must surrender one emission allowance for each tonne of CO_2 they have emitted over the course of the year.



Within the EU ETS, a maximum number of emission allowances is available; this amount equals the total allowable volume of CO_2 emissions, or cap.

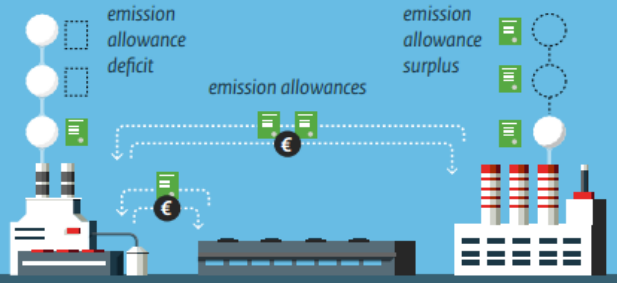
CO_2 emissions are reduced by lowering the cap.



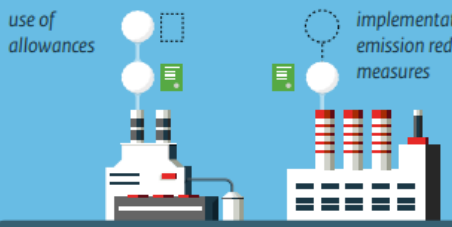
Trading consists of emission allowance transactions

Companies with insufficient allowances must purchase allowances to cover their deficit.

Companies with lower CO_2 emissions may sell their surplus allowances.



The emission allowances market operates on a supply and demand basis, effectively attaching a price tag to all CO_2 emissions. Businesses try to choose the most cost-effective option:



This system, whereby each company weighs the relevant pros and cons, ensures that the cheapest CO_2 reduction measures are taken first.

The '2020 Energy and Climate Package'

- After the 2006 Green Paper, the EC issued in **2007** the Communication '**An Energy Policy for Europe**', which was then adopted by the **European Council** and **Parliament (2009)**

- **Triangle** of EU energy policy **+** new '**20-20-20**' energy and climate policy targets

GHG Emissions Reduction

20% compared to 1990

Binding via ETS

Increase of Renewables

20% of total energy consumption

Binding via RE Directive

Increase of Energy Efficiency

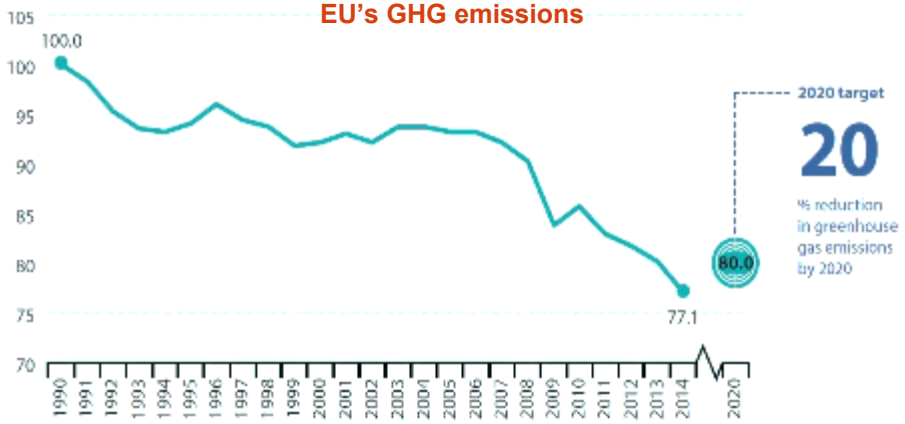
20% compared to baseline

Binding via EE Directive

The impact of the '2020 Energy and Climate Package' on the European energy system

- **National level-binding targets** strongly **impacted** the **EU energy system**
- In 2014, EU **GHG emissions were down by 23%** compared with 1990 levels
- In 2014, **EU consumed 12% less primary energy** than in 2005
- In 2014, **renewable energy provided 16% of energy consumed in the EU** (9% in 2006)
- Thanks to cost reductions and support schemes, shares of **wind and solar increased particularly quickly**
- **Overall, a successful package!**

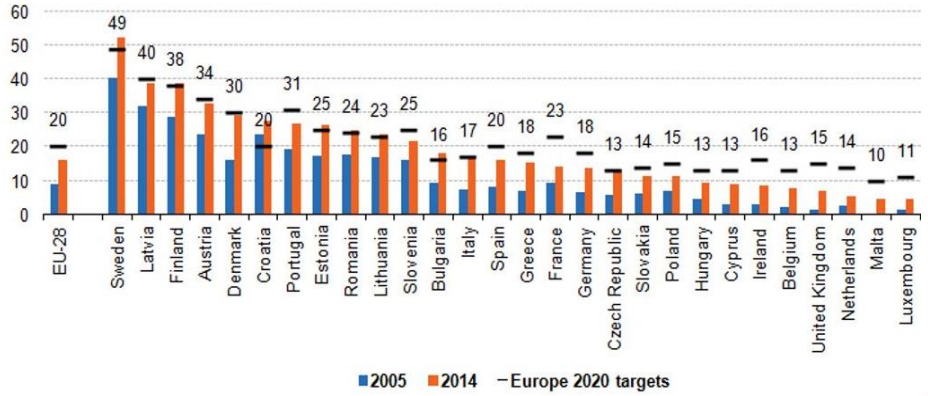
EU's GHG emissions



Savings in primary energy consumption compared to 2020 projection

2007	2008	2009	2010	2011	2012	2013	2014	Target
2.1	2.6	8.2	5.6	9.5	10.5	11.8	15.7	20.0

Share of renewables in final energy consumption



The '2030 Climate and Energy Policy Framework'

- In the run-up to the **Paris climate conference** the EC proposed a new '2030 Climate and Energy Policy Framework', which was **endorsed by the EU Council in October 2014**

GHG Emissions Reduction	Increase of Renewables	Increase of Energy Efficiency
40% compared to 1990	27% of total energy consumption	27% compared to baseline scenario
Binding via ETS	Only binding at EU level	Only binding at EU level

- Problem: due to **divergent interests of member states**, the new targets **are not binding at national level**, but only at EU level
- For instance, in a joint document the UK and Czech Republic suggested that the new Framework «should **only be sufficient to enable an assessment of collective progress**, and should be significantly **less prescriptive** than is currently the case under the 2020 climate and energy package»
- **Poland** and other **Central European** countries **against renewable and efficiency targets**
- **Feasibility of the new targets** remain a **major question mark**

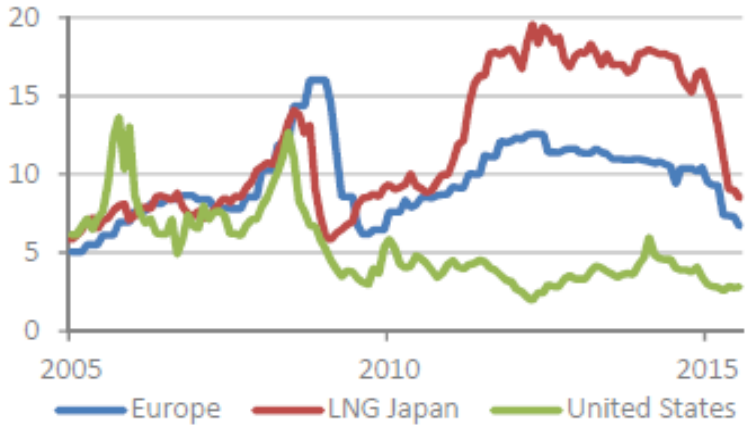
2009-2014: a downwards trend for the EU energy and climate policy?

- **2005-2009**: **strong momentum** on EU energy and climate policy also due to **positive economic and political situation** in Europe

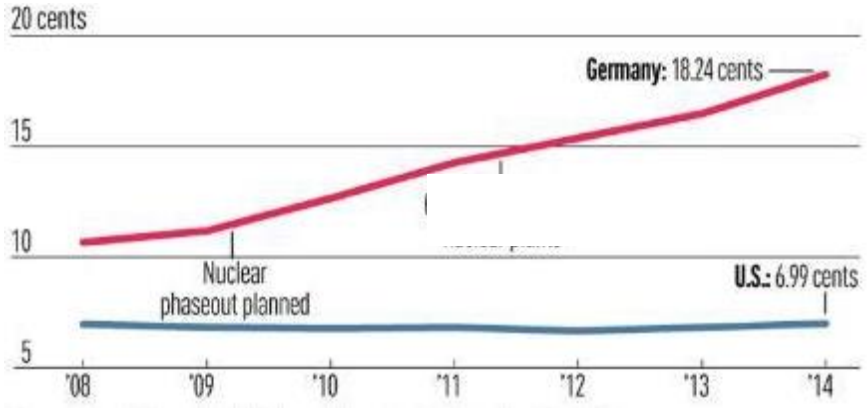
- With **prolonged economic crisis in Europe**, several countries outline **trade-offs** between three components of EU energy policy triangle (competitiveness, sustainability and security)

- Since 2010, the **US shale gas revolution** has reshaped global energy markets and global economic dynamics, providing a **great comparative advantage to the US economy**

Gas prices, USD/MBTU



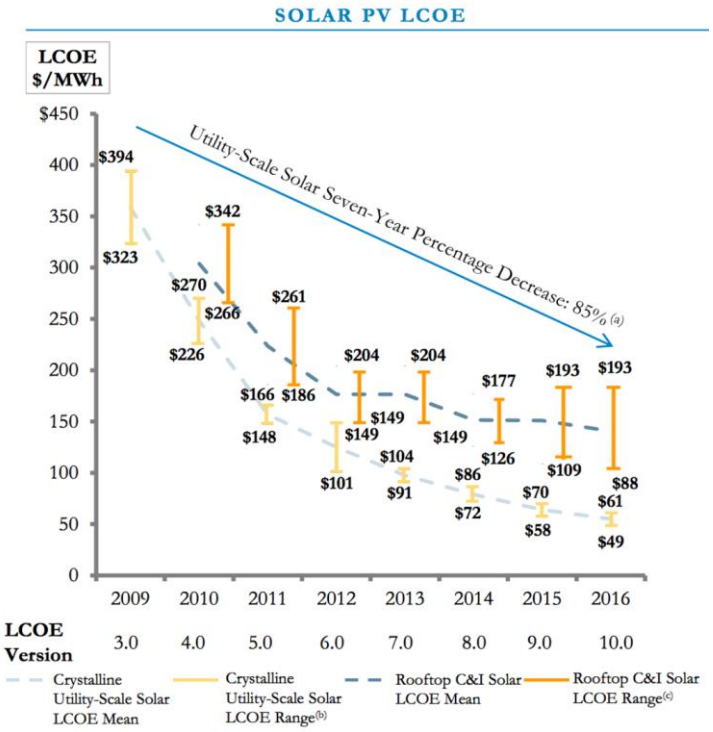
Average industrial electricity costs per kwh, USD/MBTU

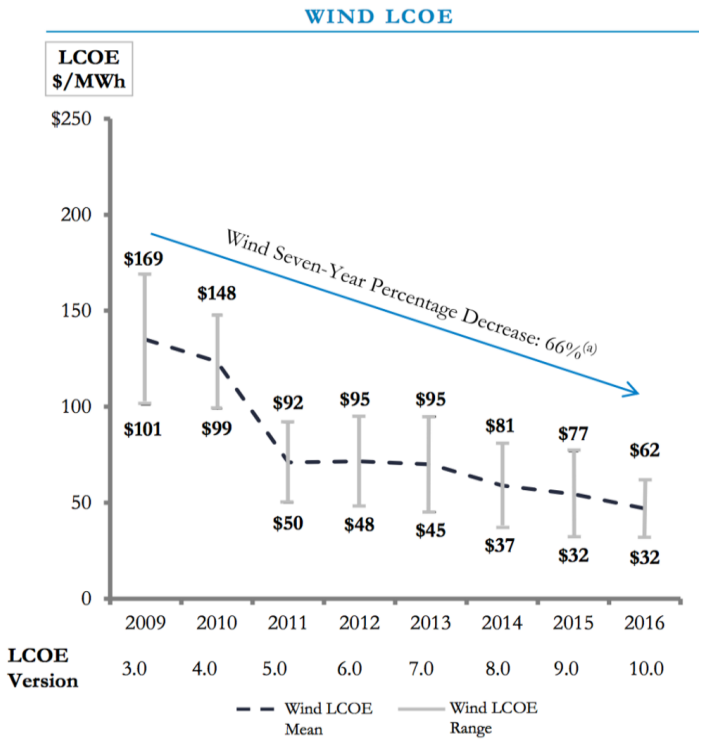


Ingredients of future success for EU energy and climate policy – 1: Technology

Renewables more and more competitive…

…but more flexibility needed in the system to integrate larger volumes of variable renewables!





Digitalisation key to scale-up RES & EE

On EU side, key to support innovation policies!

Ingredients of future success for EU energy and climate policy – 2: Governance

Solid governance system key to guarantee achievement of 2030 targets (not-binding)

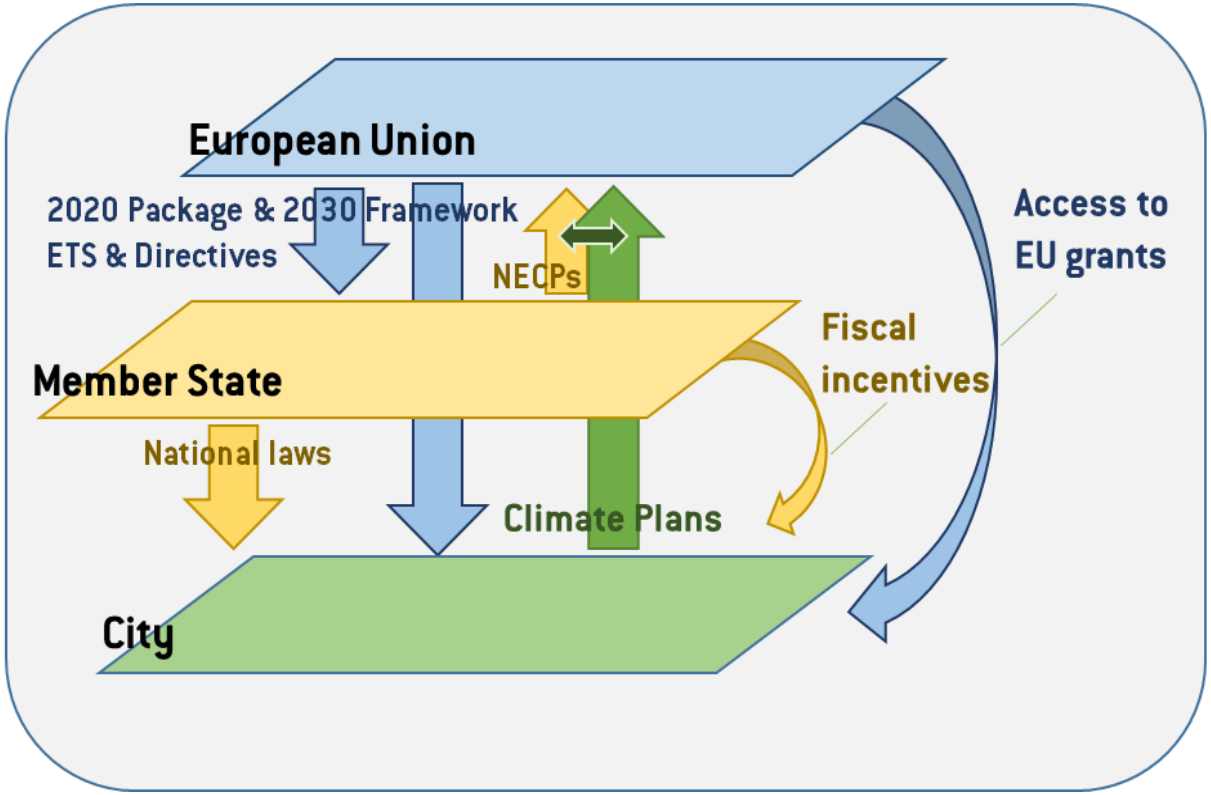
Without a strong and reliable governance system investors' confidence might be undermined

EC proposed 'National Energy and Climate Plans'

But new bottom-up systems might be needed…

Covenant of Mayors
Committed to local sustainable energy

Engagement of local authorities key!



Ingredients of future success for EU energy and climate policy – 3: Global action

Energy security: for a long time the missing apex of the EU energy policy triangle

- Building an energy policy on the basis of competition law and environmental law, the **EU has dismissed for long time the security component**
- **EU imports more than half of all the energy it consumes**
- **EU import dependency** is particularly high for **oil (> 90%) and gas (> 70%)**
- Due to its characteristics, **gas much more geopolitical than oil**
- **EU-Ukraine-Russia gas crises** of **2006** & **2009 urged an EU action** on energy security
- **Mantras**: i) Increase energy **efficiency**; ii) **Diversify** supplier countries and routes; iii) Complete the **internal energy market**; iv) Build missing **infrastructure** links; v) **Speak with one voice** in external energy policy.

Gas security of supply: behind the Energy Union

April 21, 2014 1:37 pm

A united Europe can end Russia's energy stranglehold

By Donald Tusk

An energy union could restore competition, says Donald Tusk

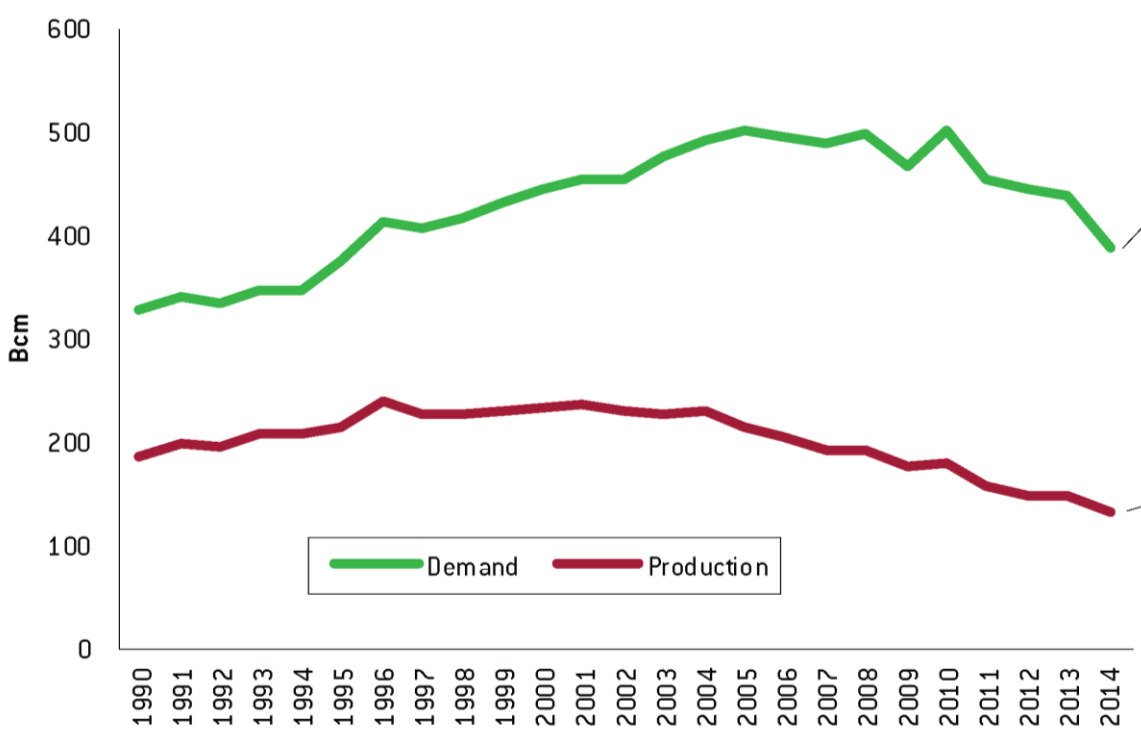
Regardless of how the stand-off over Ukraine develops, one lesson is clear: excessive dependence on Russian energy makes Europe weak. And Russia does not sell its resources cheap – at least, not to everyon

This, of course, is basic economics. A dominant sup and reduce supply. The way to correct this market d confront Russia's monopolistic position with a singl buying its gas.

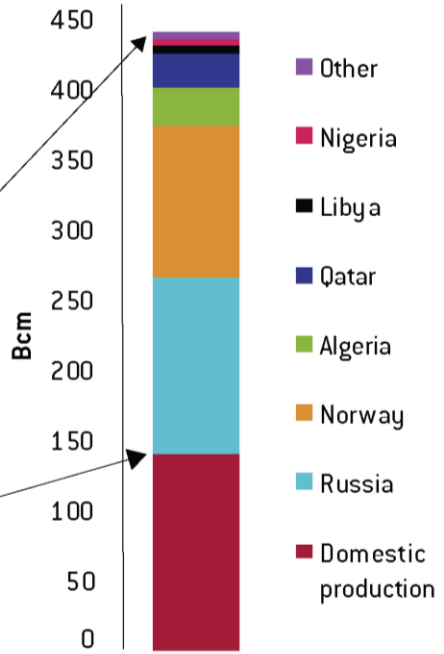
A focus on gas security of supply

- Concerns about gas SoS underpinned inception/evolution of the **Energy Union**
- **High priority** given to gas as:
- It covers ¼ of EU mix; ⅓ imported from Russia; It is infrastructure-dependent

EU gas demand and domestic production (1990-2014)



EU gas supply (2014)



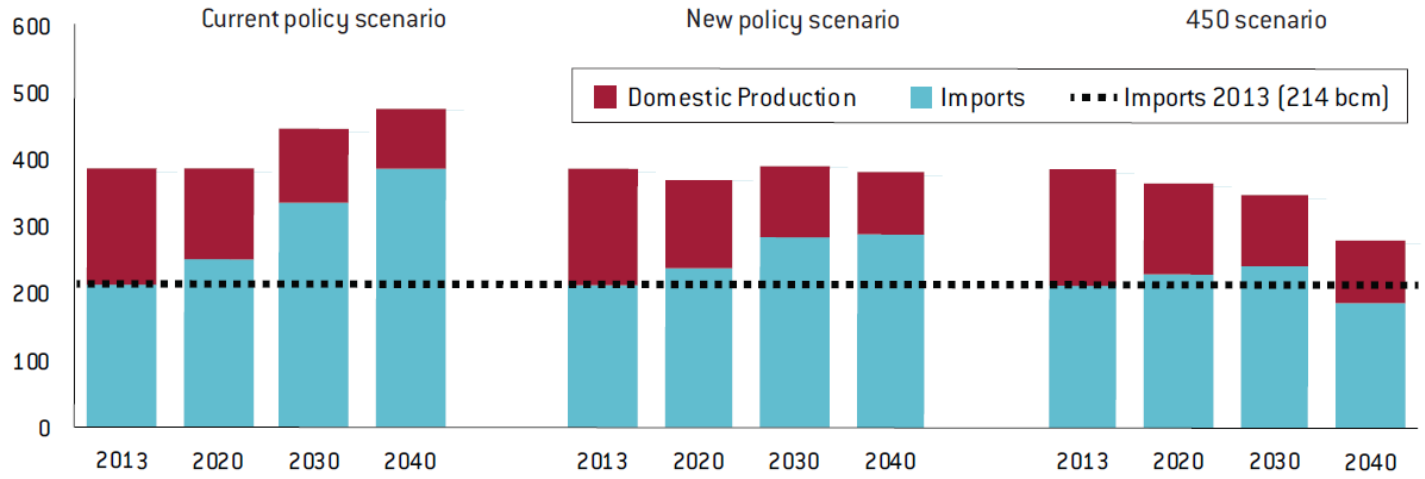
The EU gas security of supply: Just all about Russia?

- **Russia** key driver for EU policy in the area (2006, 2009, 2014)
- Gas SoS: traditionally an high priority for Central and Eastern EU Member States
- But **gas SoS much wider issue** (potentially involving all supplies from all suppliers):

  -**Geopolitically volatile neighborhood** (not just Russia but also Algeria, Libya…)

  -**Commercial uncertainties** (Norway outlook, LNG market development…)

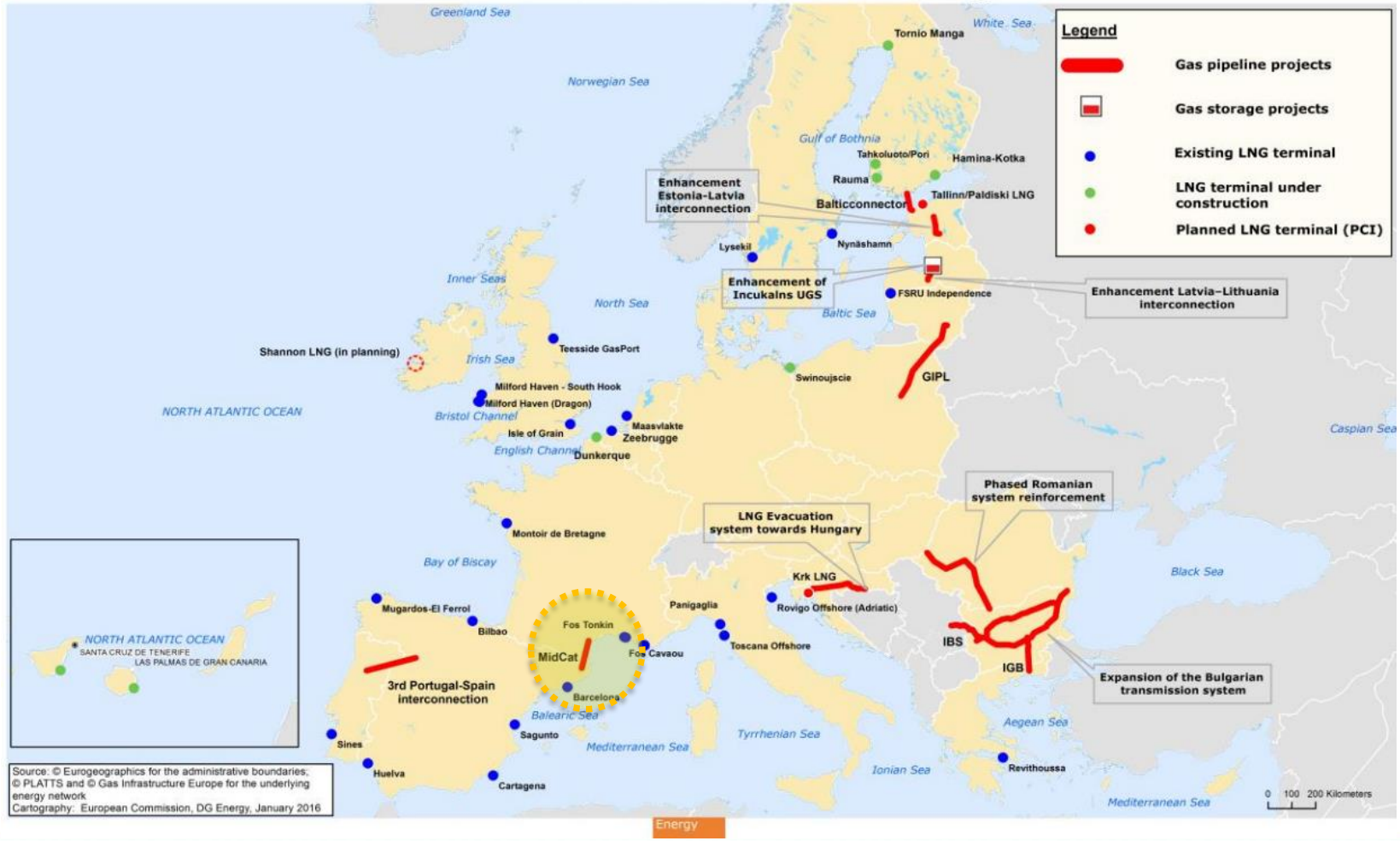
- **SoS: a structural issue** that will last for **decades to come**:



A look at the utilization rate of EU gas import infrastructure: big potential flexibility!

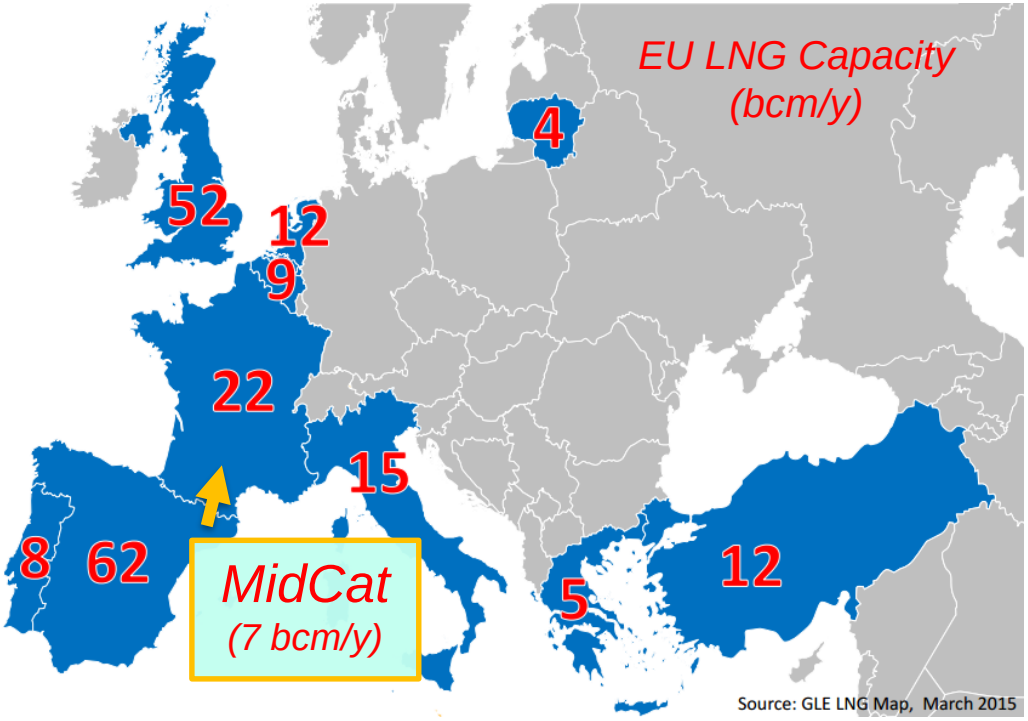
Pipelines (bcm/y)			
From	Capacity	Imports in 2014	Utilisation rate
Russia	230*	119	51%
Norway	127	101.1	79%
Algeria	54	19.5	36%
Libya	11	6	54%
TOTAL	422	245.6	58%
LNG (bcm/y)			
Country	Capacity	Imports in 2014 (Net of re-exports)	Utilisation rate
Spain	60.2	17.6	29%
United Kingdom	50.7	18.5	36%
France	25.3	10.1	39%
Italy	15.3	7.2	47%
Netherlands	12	0.9	7%
Belgium	9	2.1	23%
Portugal	5.5	2.1	38%
Greece	5.2	0.8	15%
Lithuania	4	n.a.	n.a.
Sweden	0.3	n.a.	n.a.
TOTAL	183.5	59.3	32%

Priority #1: build necessary interconnections to make the most of the existing LNG and storage



Interconnecting the European (dis-)Union…

- EU put in place several tools to favour advancements of these projects
- '**Projects of Common Interest**'
- But **still insufficient** to speed-up projects, due to member states' divergent interests
- Example: **MidCat** Gas Pipeline project



Spain: - highest LNG capacity
- utilization rate: 30%

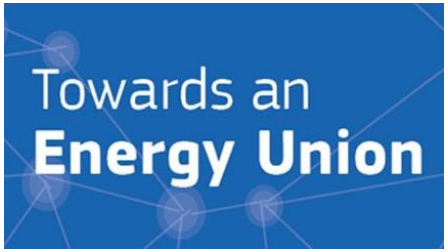
MidCat: - to allow exports to FR and other EU markets
- cost: EUR 3 bn
(SGC: EUR 35 bn)
- EU financial backing

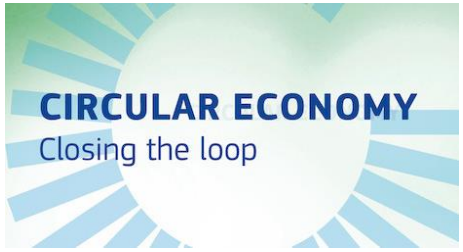
France's opposition, to prevent competition on its market

No advancements in the project

Energy and climate:
a clear example of how the EU is better off united!

- A unique, well functioning and well interconnected, **EU energy market could provide greater flexibility, competitiveness and security for all**
- EU action needed to **transform European economy from linear to circular**
- By acting together, **EU could keep up global momentum on climate action**
- **Energy and climate policy: a clear example of how EU is better off united!**





Thanks for your kind attention!

simone.tagliapietra@bruegel.org