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Changing Energy Environment – New Challenges

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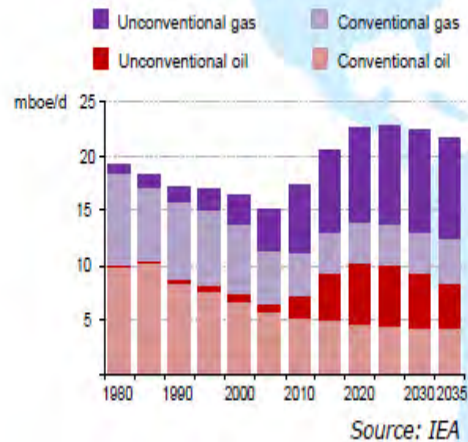


Impact of the financial crisis

Fall in private investment,
tight financing conditions

Shale gas

US oil and gas production



Fukushima



Ukraine - Russia Crisis
Gas supply interruptions



Some countries phase out
nuclear power production

Rising demand
➔ **rising prices**

By 2030, world economy
set to double and energy
demand to rise by 1/3



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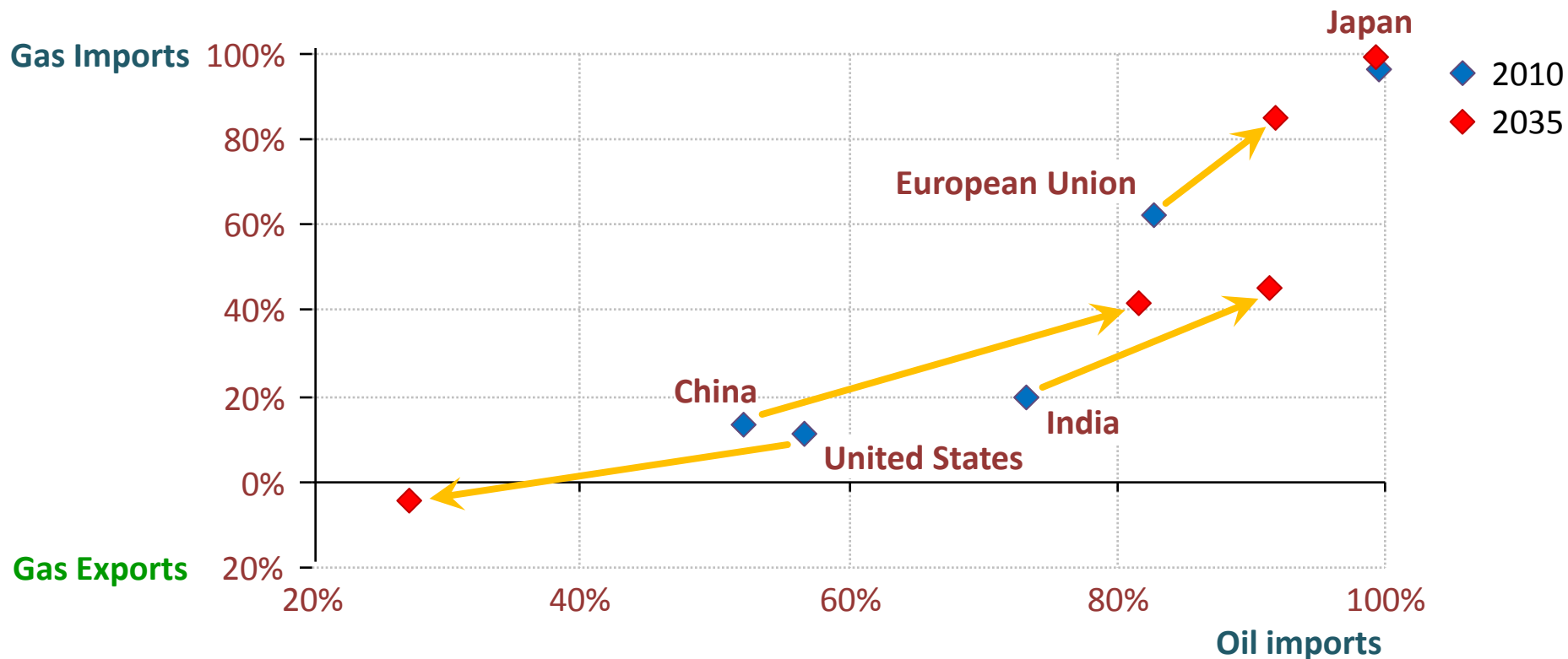
Secure, clean and competitive?

Challenge:

Import Dependency



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***While dependence on imported oil & gas rises in many countries,
the United States swims against the tide***

Challenge:



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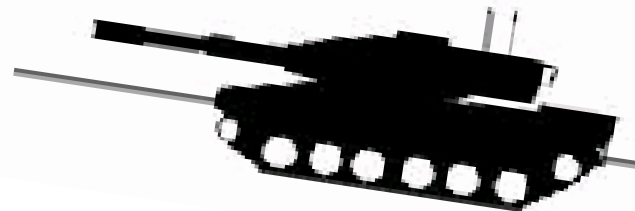
External risks

STRAIT OF HORMUZ



Source: EIA, Bloomberg New Energy Finance

Ukraine - Russia Crisis
Gas supply interruptions





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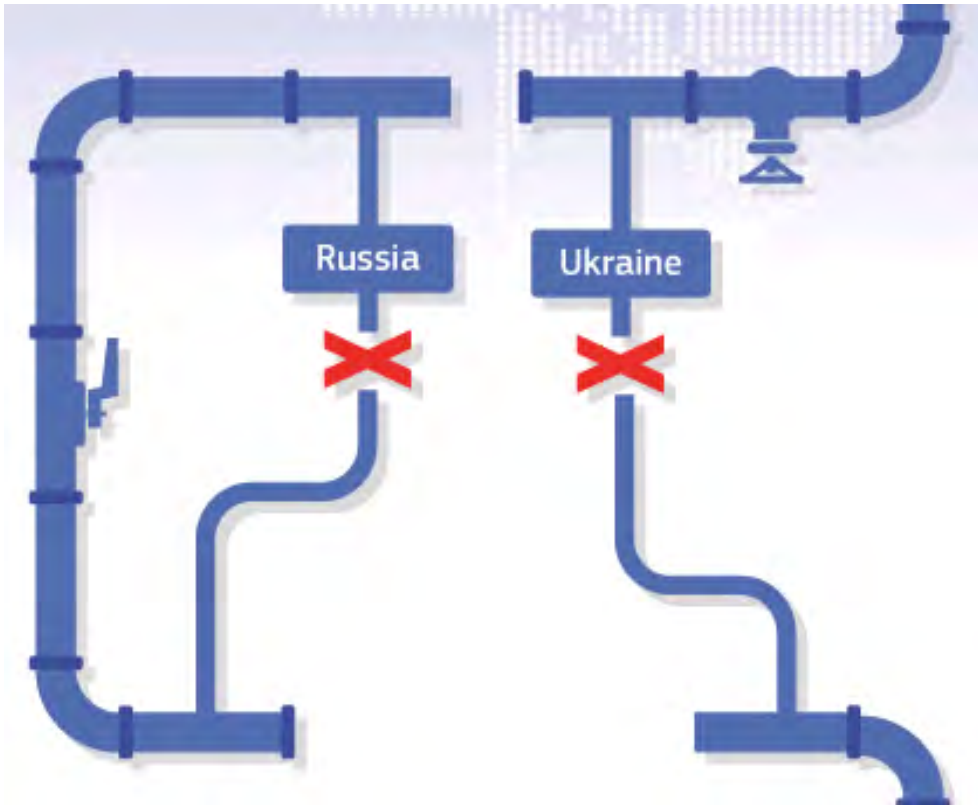
The EU Energy Security Strategy

June 2014 - Key actions:

- 1.Immediate actions** for winter 2014/2015 - security **stress tests**
2. Strengthening of **emergency/solidarity mechanisms**
- 3.Moderating energy demand**
4. Building a well-functioning and fully integrated **internal market**
- 5.Increasing energy production** within the European Union
6. Further developing **energy technologies**
- 7.Diversifying** external supplies and related infrastructure
8. Improving coordination of national energy policies and **speaking with one voice in external energy policy**



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Energy Stress Tests



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We've conducted an Energy Stress Test


Why ?

A simulation
of an extreme
situation
Not a
projection!



Today we import

53%

of the energy we consume

	Crude oil	88%
	Natural gas	66%
	Solid fuel	42%
	Nuclear	40%

From Russia

	
39% gas	33% oil

48% of the EU's energy is used to heat water and homes



How was it done?

We assessed the impact on the EU's energy system in case of a halt in gas supplies **from Russia or through Ukraine** for 1 month and for 6 months this winter

What are the results?

The possibility of a substantial impact, mostly in Eastern Member States and the Energy Community:

Finland, Estonia, the Former Yugoslav Republic of Macedonia, Bosnia and Herzegovina, and Serbia would **miss at least 60 per cent** of the needed gas.

Involved in Energy Stress Tests:

EU Member States, the Energy Community countries (including Ukraine) and Georgia. The US, Canada, Japan, Switzerland, Turkey, Norway, the European Network of Transmission System Operators for Gas and the International Energy Agency contributed.

Burden sharing } Warm homes

Effective national measures + Cooperation

} Households can be protected, and cuts minimised.



What can the EU and the Member States do?

Have a market-based approach.
Let price signals determine the gas we need,
commercial use of storage.



Share responsibility and monitoring
between **public authorities and the industry.**



Urgently complete
infrastructure projects.



Increase cross-border cooperation.
Agree with neighbours on how to share
scarce gas, reinforce **regional dimension**,
maximise interconnections, reduce
restrictions to trade.



Change behaviour.
Short-term **energy efficiency**
demand moderation measures.



Prioritise storage and reverse flows.

#EnergySecurity

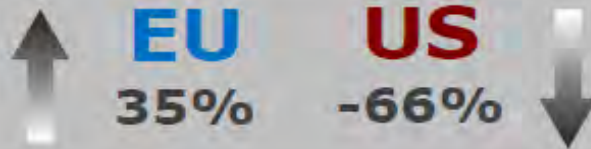


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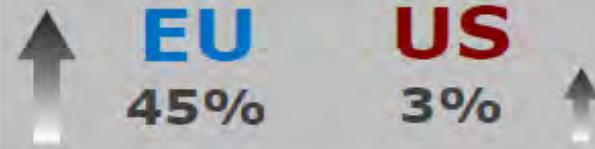
Secure, clean and
competitive?

Trends in energy price indexes 2005-2012

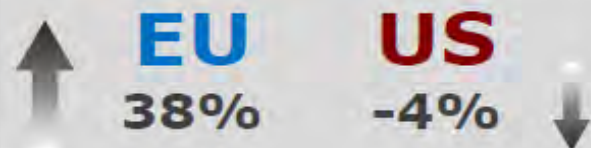
Gas price index Industry



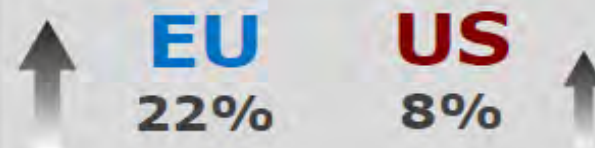
Gas price index Households



Electricity price index Industry

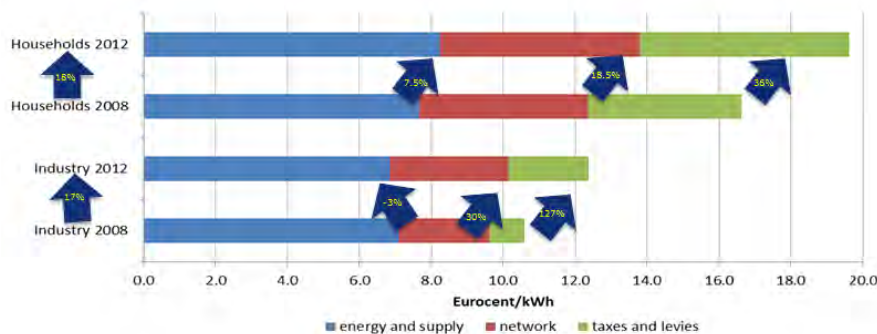


Electricity price index Households

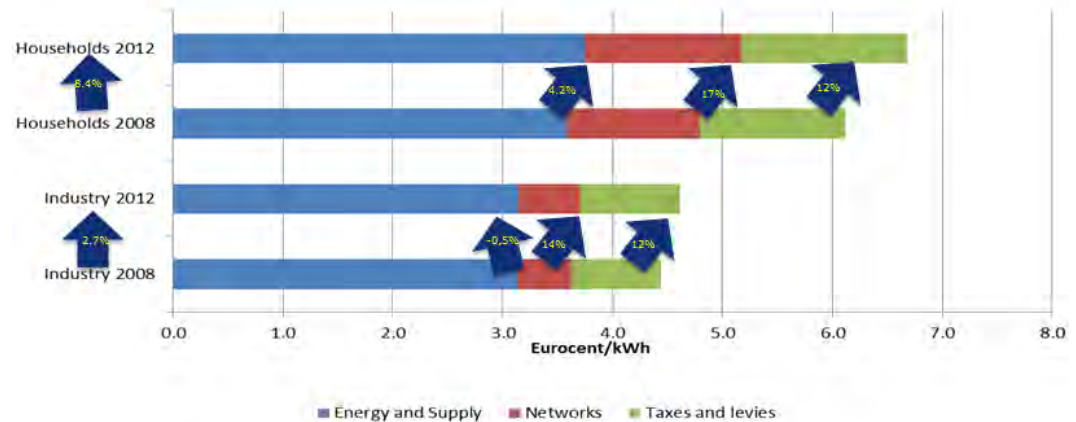


Electricity and gas price drivers in Europe

Electricity price drivers (2008-2012)



Gas price drivers (2008-2012)



Source of data for electricity: Eurostat. Includes taxes in the case of households; excludes VAT and other recoverable taxes in the case of industry but other industry exemptions are not included (not available).

Source of data for gas: EC, Metadata Member States. Includes taxes in the case of households; excludes VAT and other recoverable taxes in the case of industry.

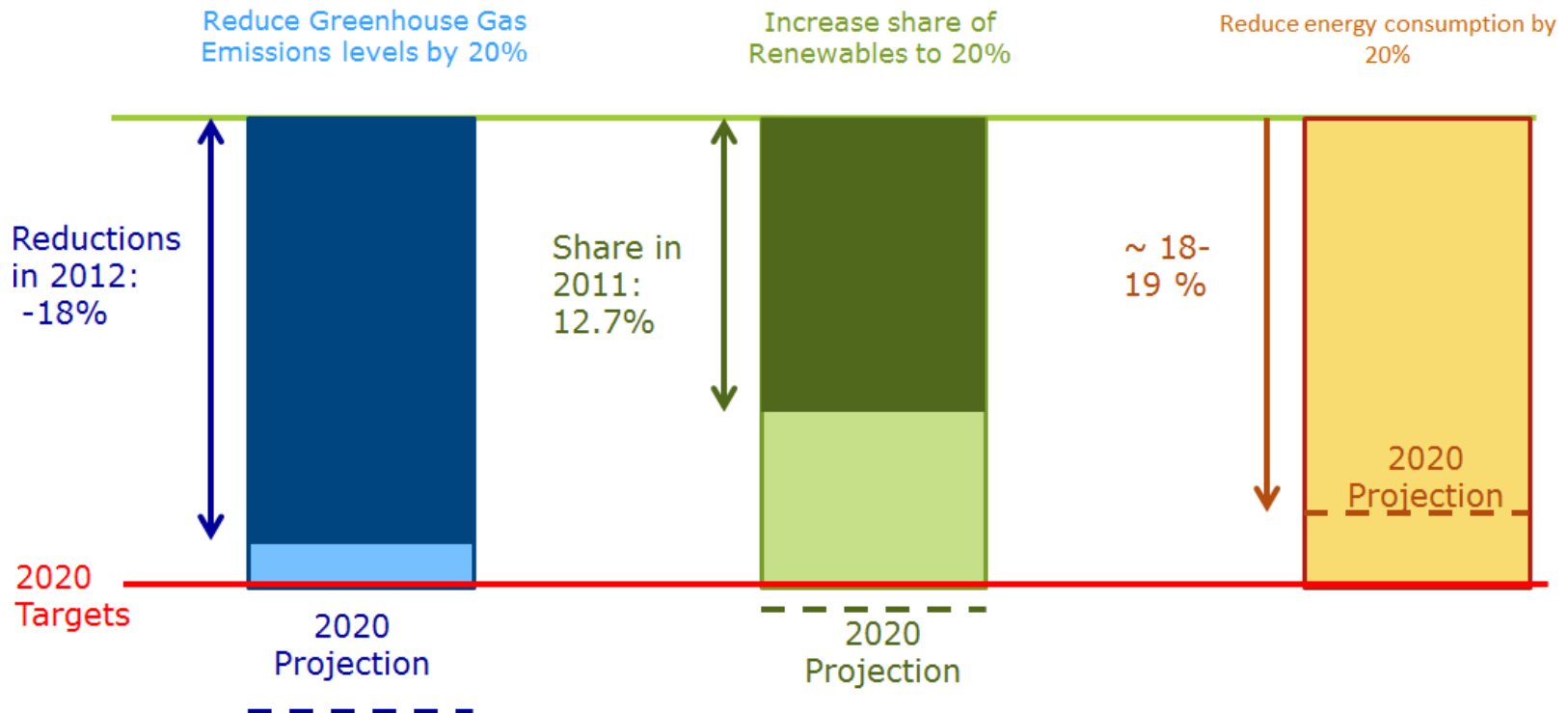


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Secure, clean and competitive?

The 2030 climate and energy framework

Where do we stand with regard to the 2007 targets?



Challenge:



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Climate Change

2030 climate and energy Framework

2020

20 %
GHG

20% RES

20 % EE

2030

40 %
GHG

≥ 27 %
RES

27*%
(30%)EE

New governance system



„Roadmap towards an Energy Union for Europe”

Non-paper addressing the EU's energy dependency challenges (IV.2014)



1. Priority infrastructure development
2. EU-level solidarity mechanisms
3. Strengthen the bargaining power of Member States and the EU vis-à-vis external suppliers
4. Development of indigenous energy sources in the EU
5. Diversification of energy supply to the EU - gas and oil in particular
6. Reinforcing the Energy Community



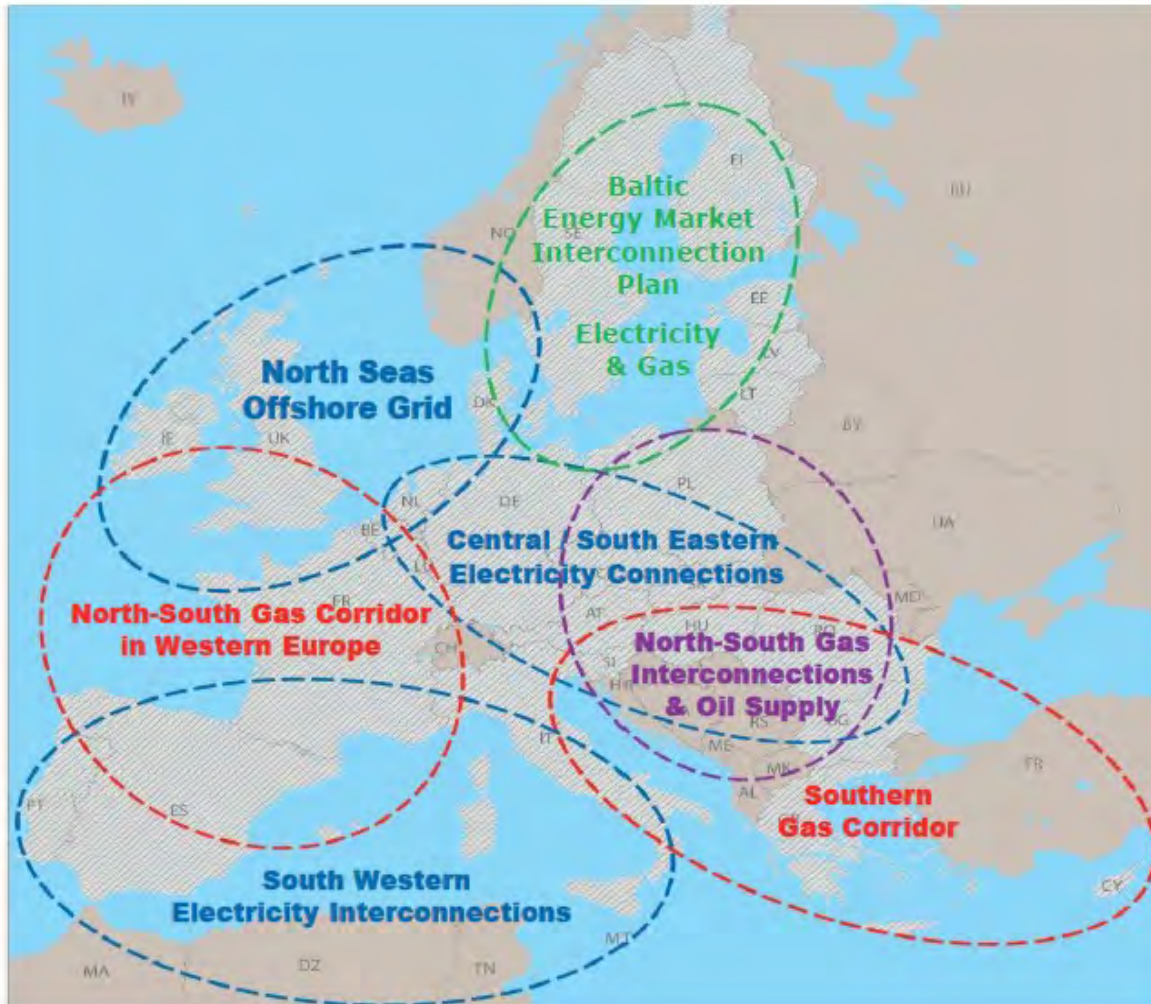
The
Internal Energy Market
- a core pillar of the
Energy Union



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Internal Energy Market (I)

Infrastructure



- Gas
- Electricity
- Electricity and gas
- Oil and gas
- Smart grids for electricity in the EU

Source: European Commission



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Internal Energy Market (II)

Harmonisation

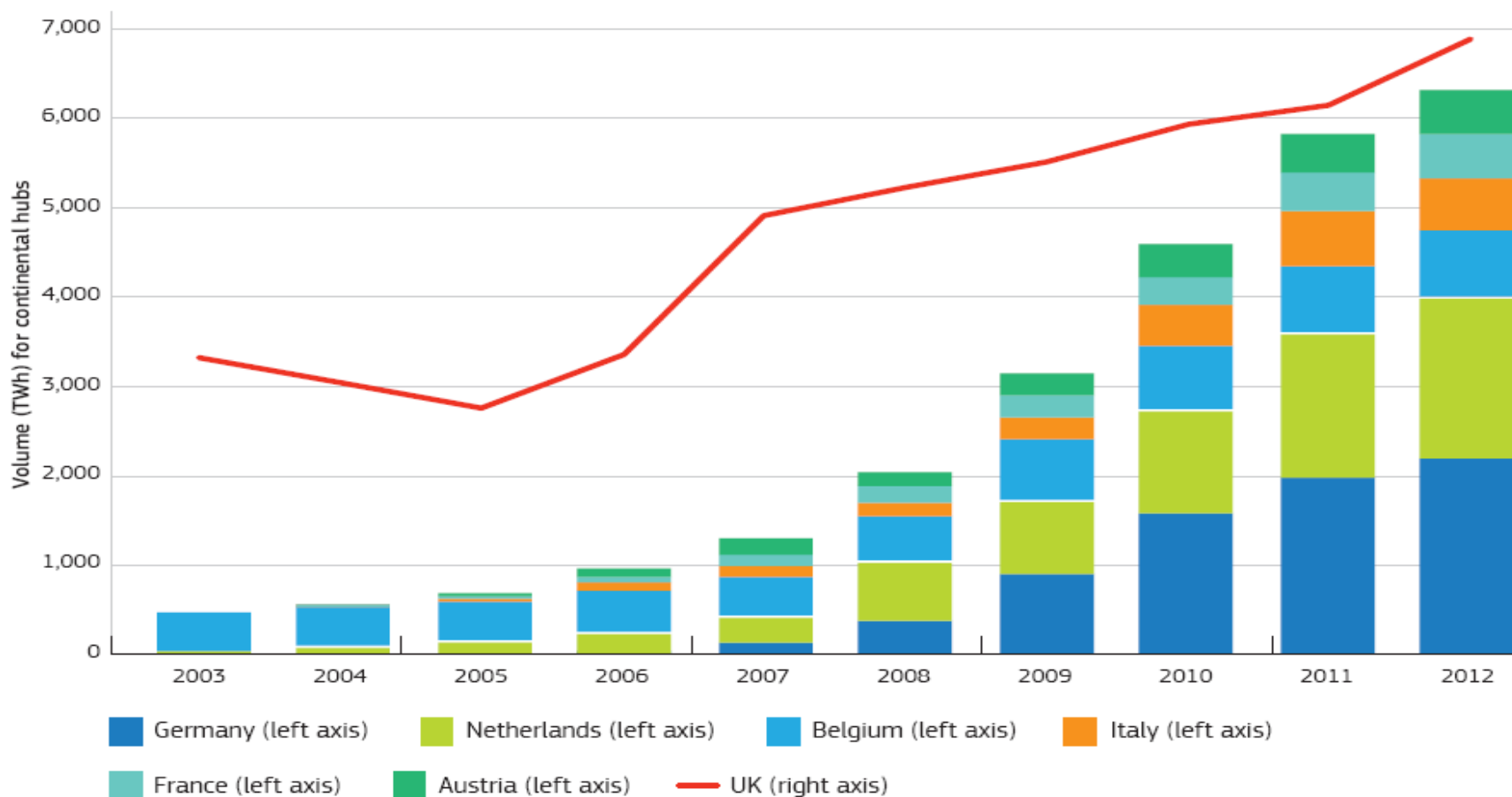
Removing barriers to
Cross-border exchanges



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• Internal Energy Market: a Success Story...

- Traded volumes at EU gas hubs





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Internal Energy Market: a Success Story...

Market Coupling

2014

- Optimised capacity calculation
- EU-wide aggregation of bids and offers

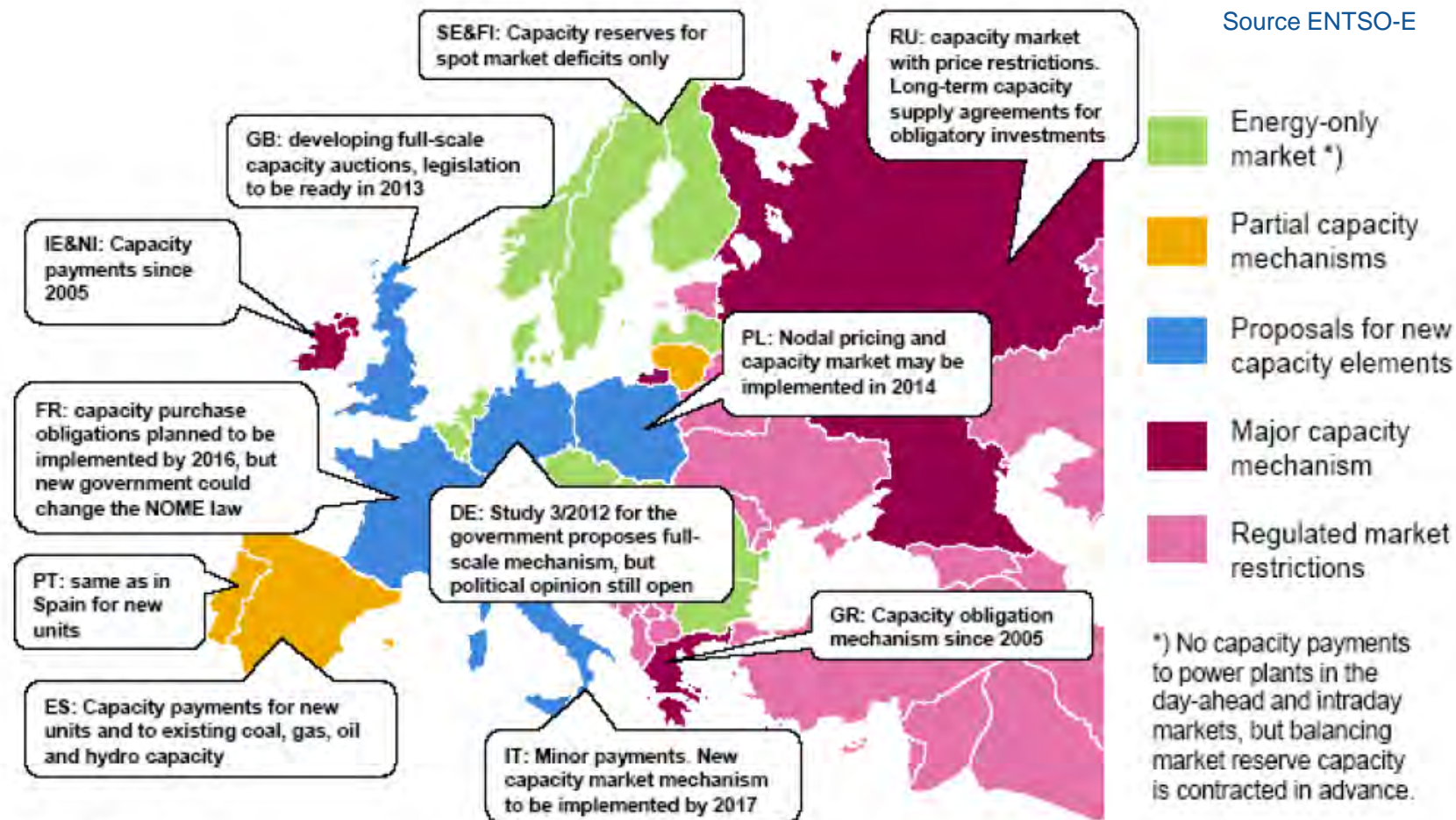




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Uncoordinated national interventions are a threat to the Internal Energy Market

Source: ENTSO-E



Source: Fortum

Finding the right balance

Let market rules work

but

intervene where necessary

Respect Member States competences

but

use aggregation/avoid fragmentation



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Thank you very much

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Unit B-2 (Internal Market II: Wholesale; gas & electricity)

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