KUALA LUMPUR 2012 WORLD GAS CONFERENCE

25th world gas conference

"Gas: Sustaining Future Global Growth"

UGS: is Europe still an attractive market?

a resilient business at the cross roads of gas and electricity

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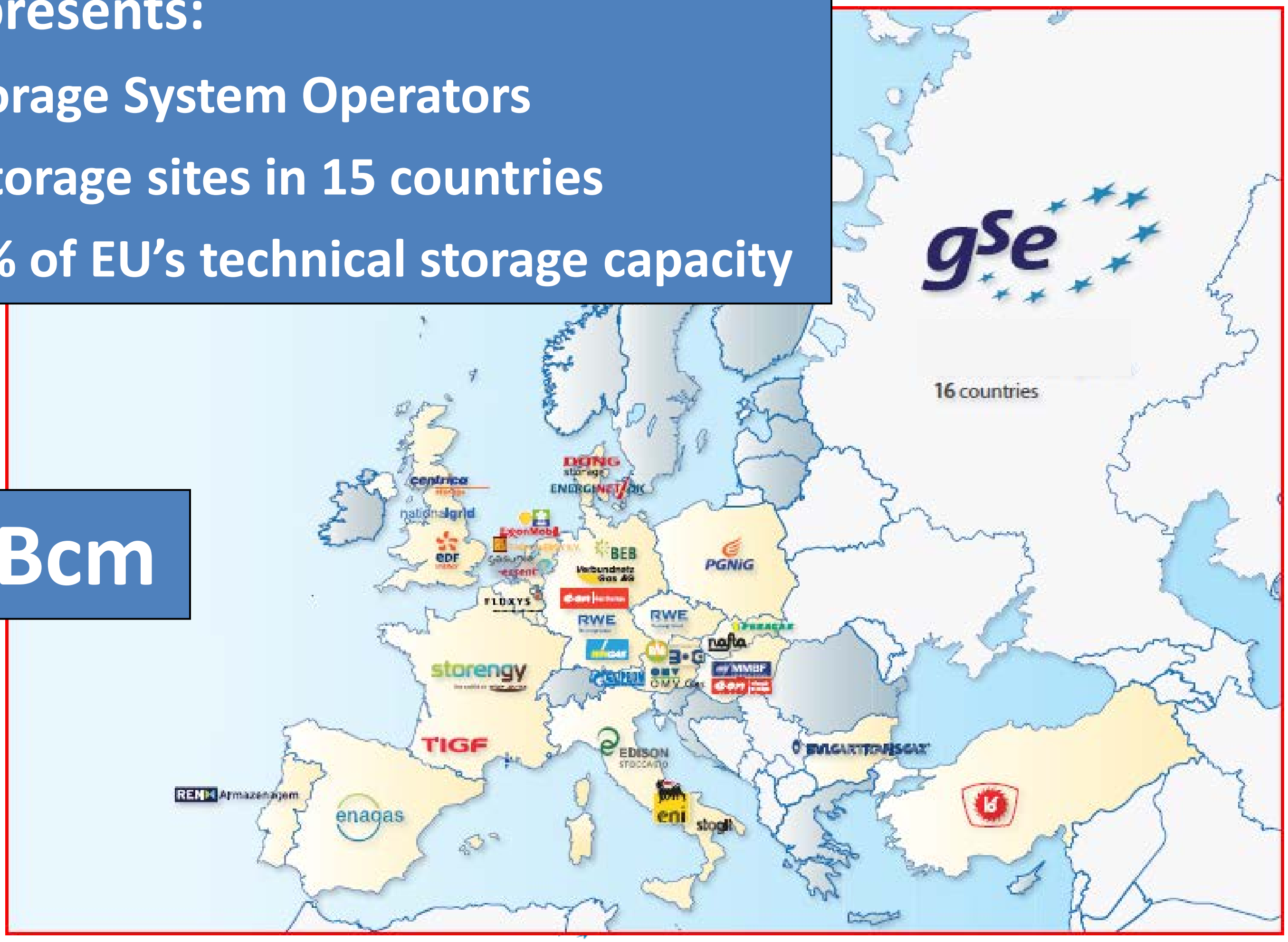
Gas Storage Europe

GSE represents:

- 31 Storage System Operators
- 110 storage sites in 15 countries
- ≈ 85% of EU's technical storage capacity



80 Bcm

Agenda

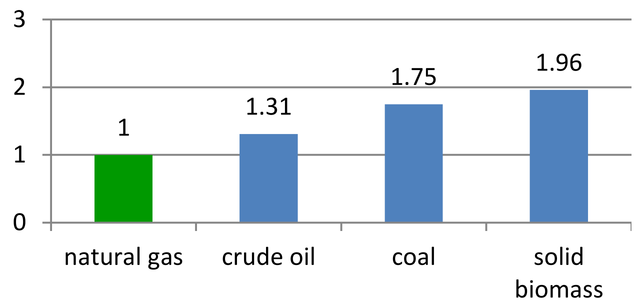
1. Natural gas: the key of the future energy mix
2. UGS: the drivers of the European vision
3. Europe: a (potential) land of opportunities for UGS
4. Conclusions

1. Natural gas : the key of the future energy mix

Natural Gas : a destination fuel

- **Natural gas: an abundant energy**
  - **190,000 bcm of proven reserves**
  - **Reserves: +39,000 bcm since 1990 vs Demand: +25,000 bcm since 1990**

- **Natural gas : an environment-friendly energy**



Compared CO_2 emission factor

- **Natural gas : a competitive energy in the mix**

  Compared to nuclear, coal or wind generation, new gas-fired power plants:

  - **Cost less capital**
  - **Are faster to build**

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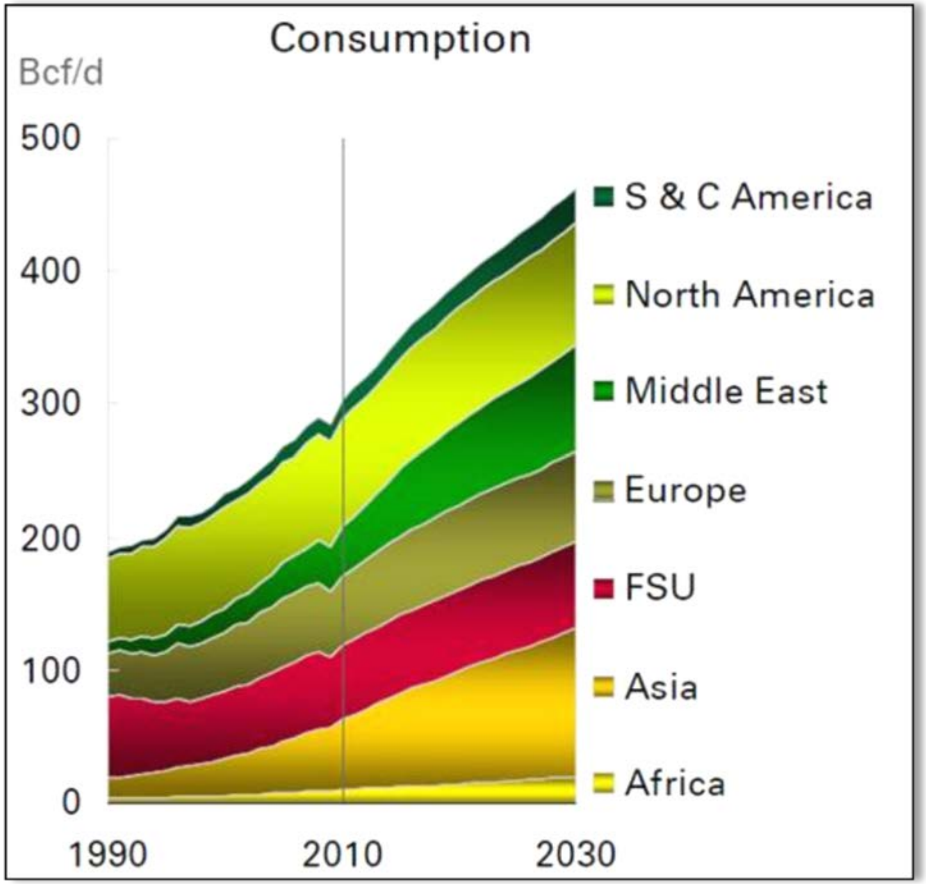
A bullish market on the long term

By 2030:

- Growth in China and India on the very fast track: 2-digit annual gas demand growth
- Growth in the rest of Asia and Middle-East on the fast track: +4% p.a.
- Moderate growth in OECD countries (+1% p.a.) driven by power generation (+1.4% p.a.)

Global growth in demand will progressively tighten the gas market



Source BP Outlook 2011

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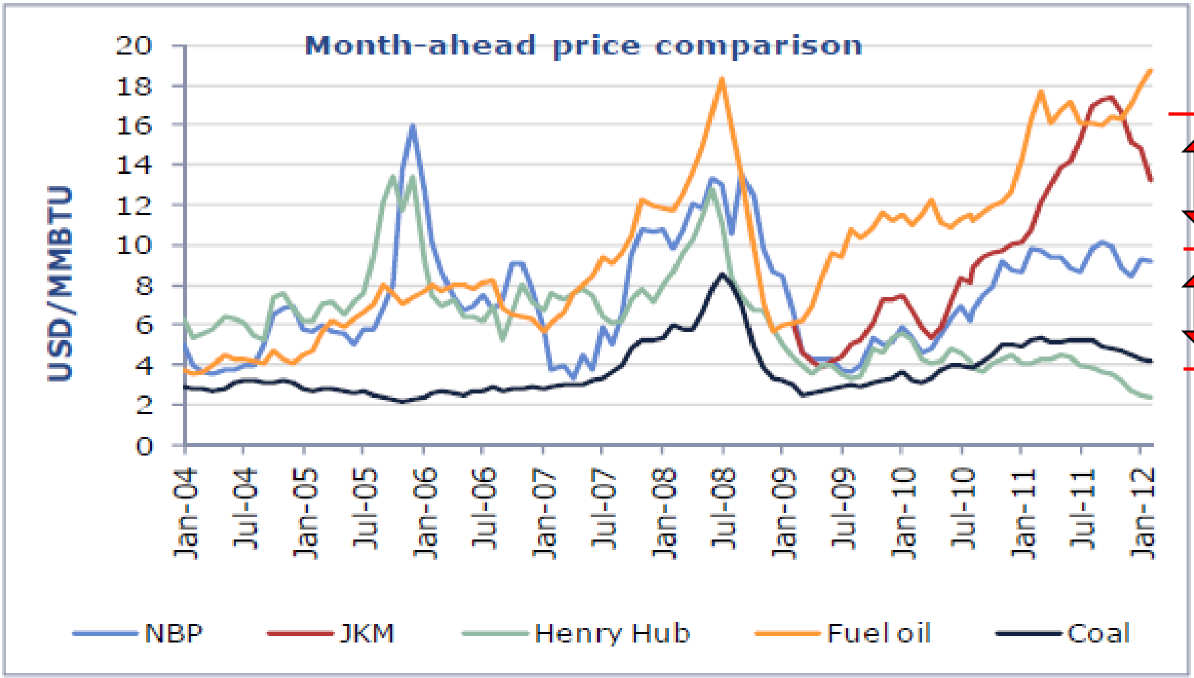
A 3 way split



Three price zones

- Asia
- Europe
- US area

… but Europe is increasingly dependent on the global gas market

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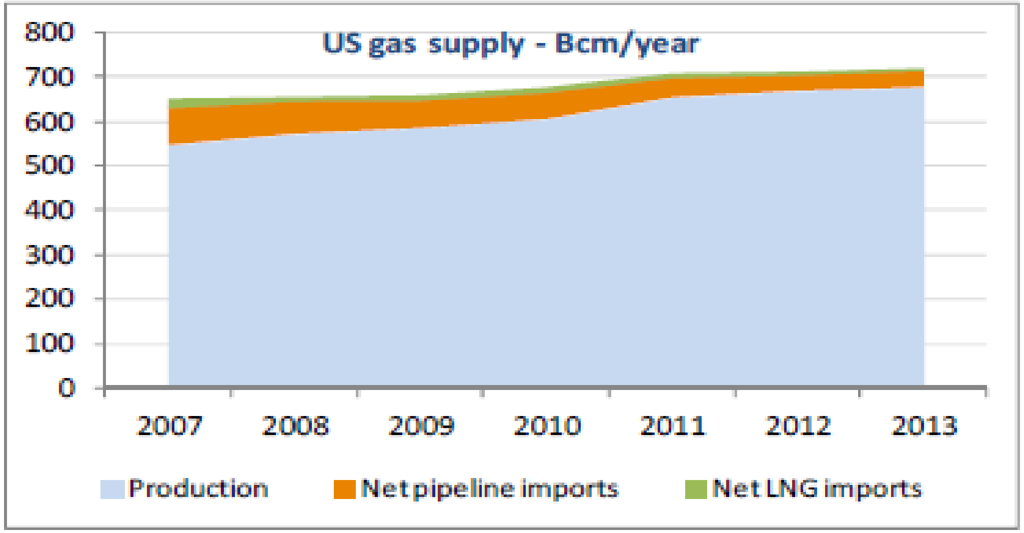
US shale gas (and LNG): a game changer

USA: shale gas development keeps prices low and boosts US competitive advantage



- **A strong and steady growth in gas production (thanks to shale production)**

- **US LNG exports:**
  - **US LNG export contracts signed since Oct. 2011 for deliveries of 16 mtpa from 2016**
  - **US LNG exports projects: 102 mtpa**

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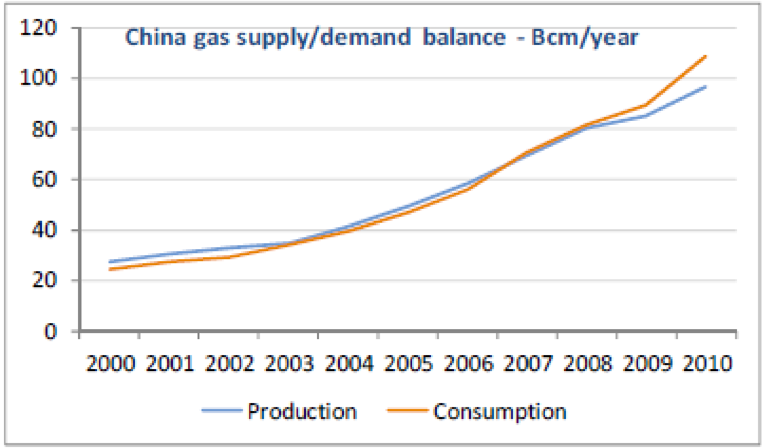
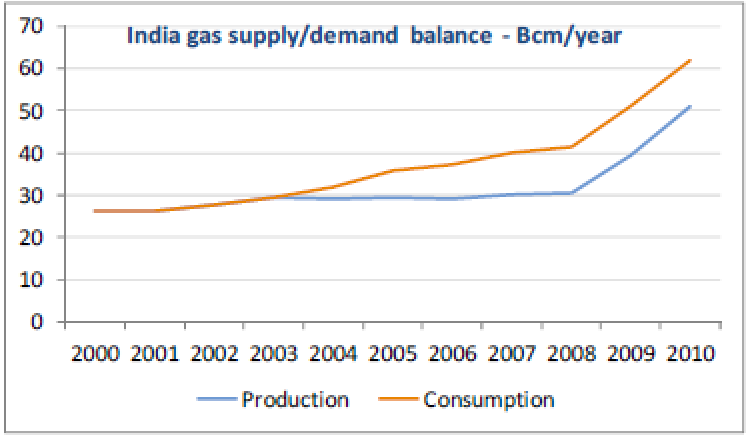
Asia: high demand, high prices

Asia: China and India are fuelling their economies by natural gas

- **2-digit annual gas demand growth in next decade**
- **increased external sourcing needs: pipeline gas, LNG**





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2. UGS: the drivers of the European vision

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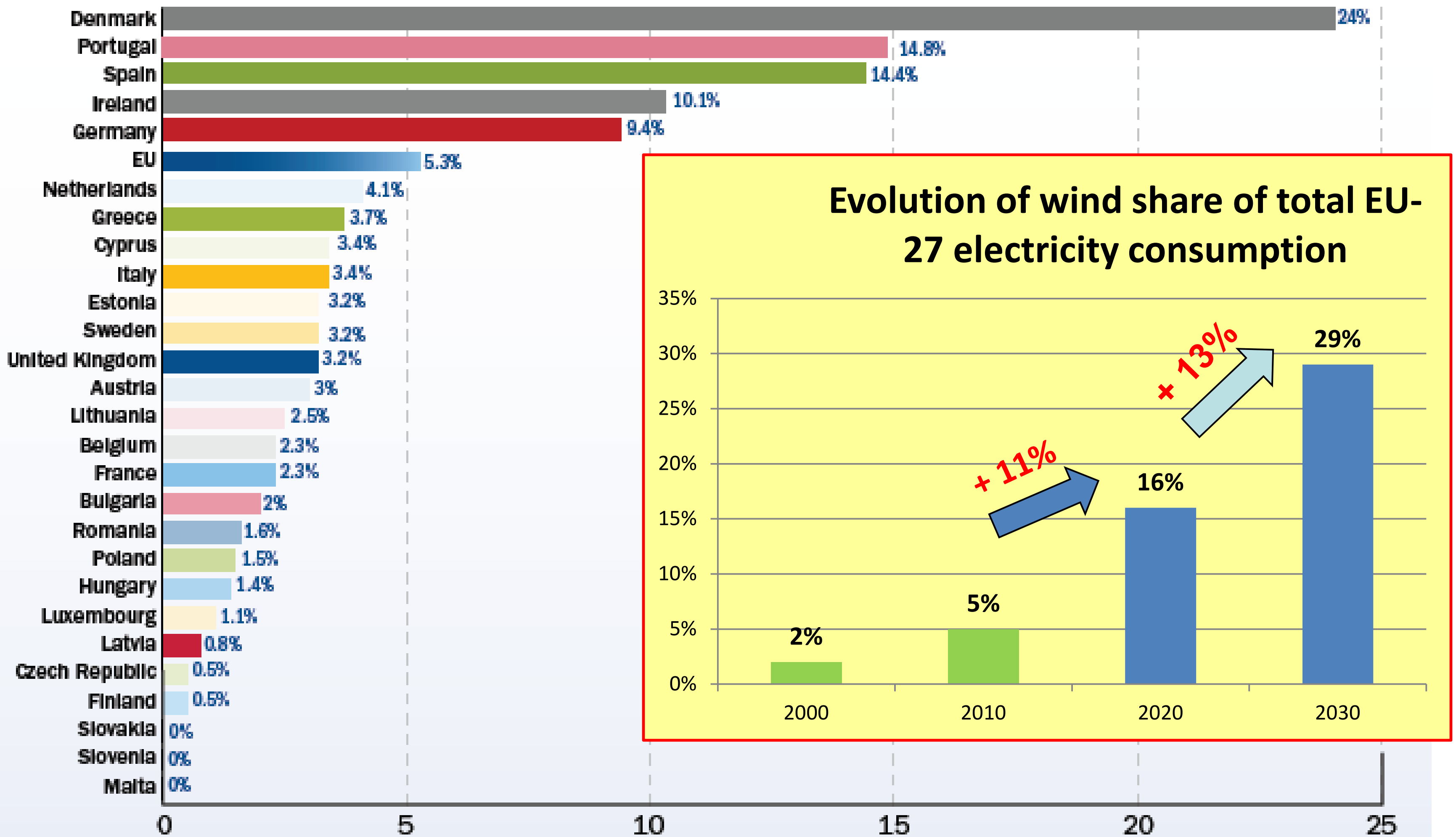
The nuclear driver

Countries where there is an official policy of banning or abandoning nuclear power generation

Countries where nuclear power generation is implicitely out of the political agenda

Source : TSR (http://info.tsr.ch/cartes/info.php?carte=46)

The wind policy driver

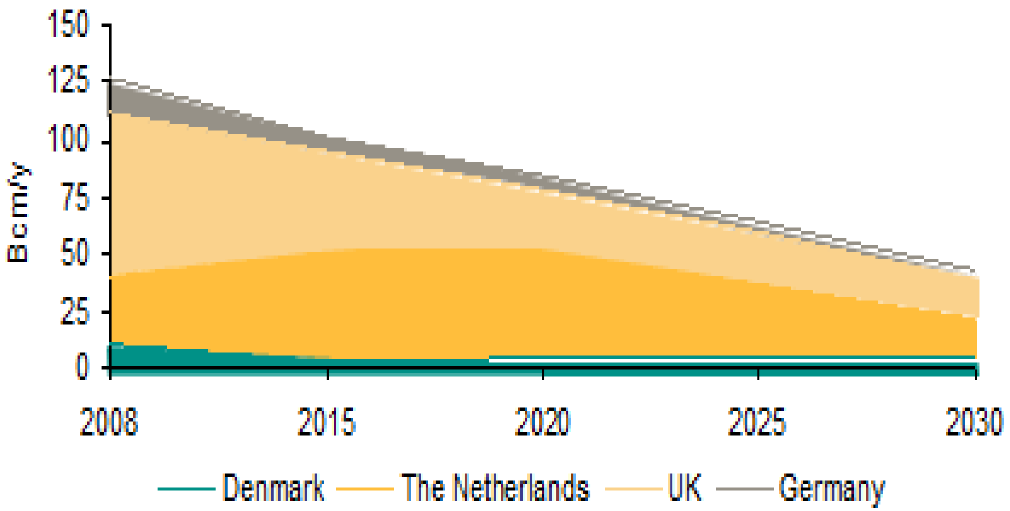


Wind Share of total EU-27 electricity consumption

Source : the European Wind Energy Association, Wind in Power, 2010 European Statistics

The security of supply driver

- **Decline of local production:**



- **Increase of import contracts & remoteness of sourcing**
- **EU shales, a possible answer?**

=> an unclear future (EU case different from the US case)

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The flexibility driver

Growing remoteness of indigeneous production

- North Sea, the Netherland, Germany…
- Unclear perspective on European shale gas

- Need for seasonal flexibility

Growing gas-fired power generation

- Baseload
- Intermittency of renewables

- Need for short term flexibility

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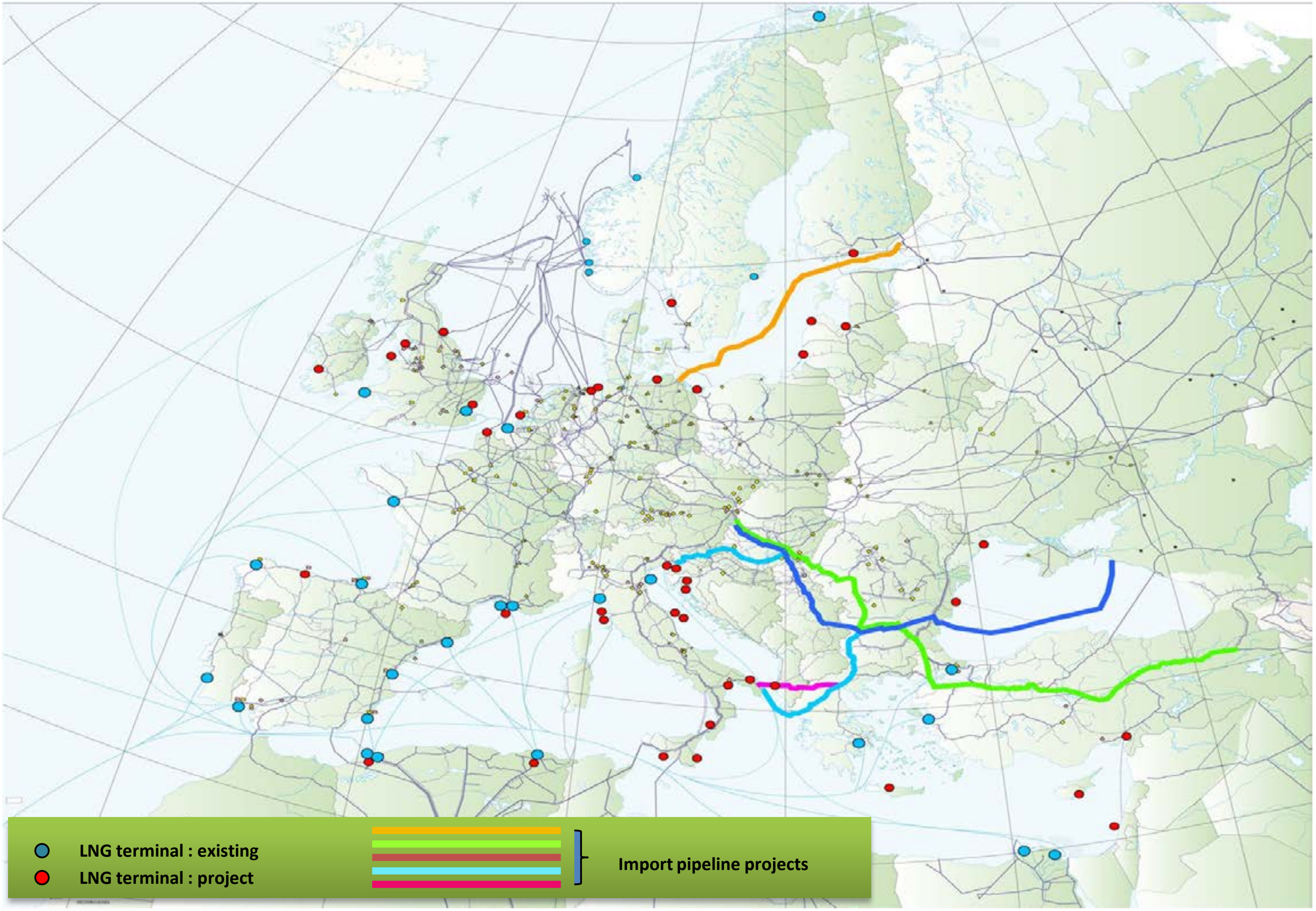
3. Europe: a (potential) land of opportunities for UGS

Evolving infrastructure landscape



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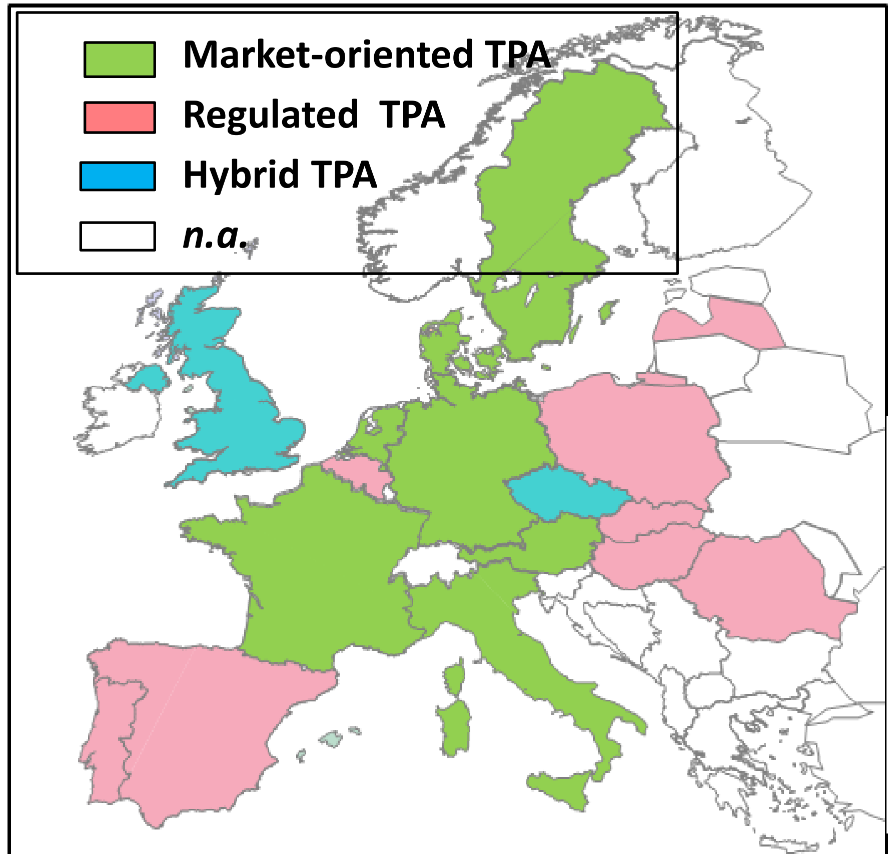
UGS European Legal Framework

• Internal market liberalization principles:

- Lay down the principle of legal and operational unbundling of the Storage Operator
- Ensure Third Party Access (TPA) to storage
- Give alternatives for Member States: Regulated Access / Negotiated Access
- Define conditions of exemption from TPA for new storages
- Define duties and powers of the regulatory Authority



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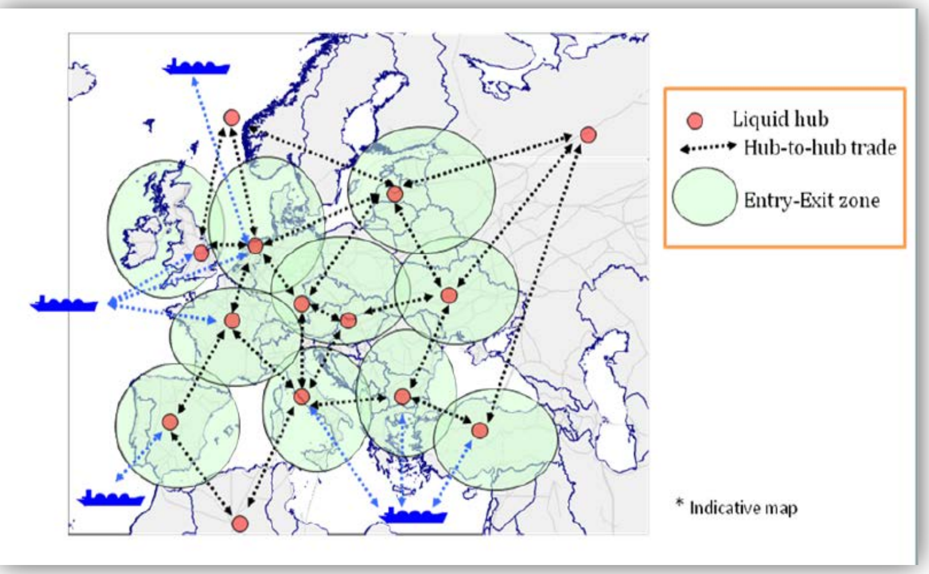
Evolving business environment

Market fluidification:

- "Gas Target Model" => Hub-based short and long-term trading (in place by 2014)
- New rules for transmission: Network Codes
- New rules for storage on capacity allocation and congestion management



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What can storage operators do?

Commercial creativity: new storage products to meet new expectations

- **New products to support market development and physical requirements**

- **Fast cycle storage to respond to the expected increase in volatility (withdrawal and injection rates are key)**

New solutions for a transforming market: electricity storage

What can EU policy makers do?

A balance to keep between 3 pillars

competitiveness

sustainability

security of supply

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4. Conclusions

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Keywords

➔ Natural Gas: a destination fuel

➔ UGS in Europe: a flexibility tool in the interface between gas and electricity

➔ Competiveness is key

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