

Which way for Europe's gas storage market?

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Outline

- **European storage market 2013**
 - Recent evolution of storage capacity
- **Current challenges**
 - Decreasing gas consumption
 - Decrease in spreads/volatility
- **Outlook to 2030**
 - Market fundamentals
- **Conclusion: Light at the end of the tunnel**



CEDIGAZ: more than 50 years of gas market intelligence

CEDIGAZ

- **International association**
- About a 100 members in 40 countries
- **Annual Reports and Databases**
- World reserves, supply, demand, trade, prices
- Gas and LNG contracts database
- UGS: annual world database
- Fortnight News Reports on worldwide gas development and unconventional gas

WORLD UGS STUDY (June 2013)

- Fifth edition: first one in 1990
- **Latest developments and trends** in the storage industry all over the world
- Extensive **country analyses** for more than 40 countries
- **Future storage demand** and its main drivers
- Analysis of **new trends**
- **More information:**

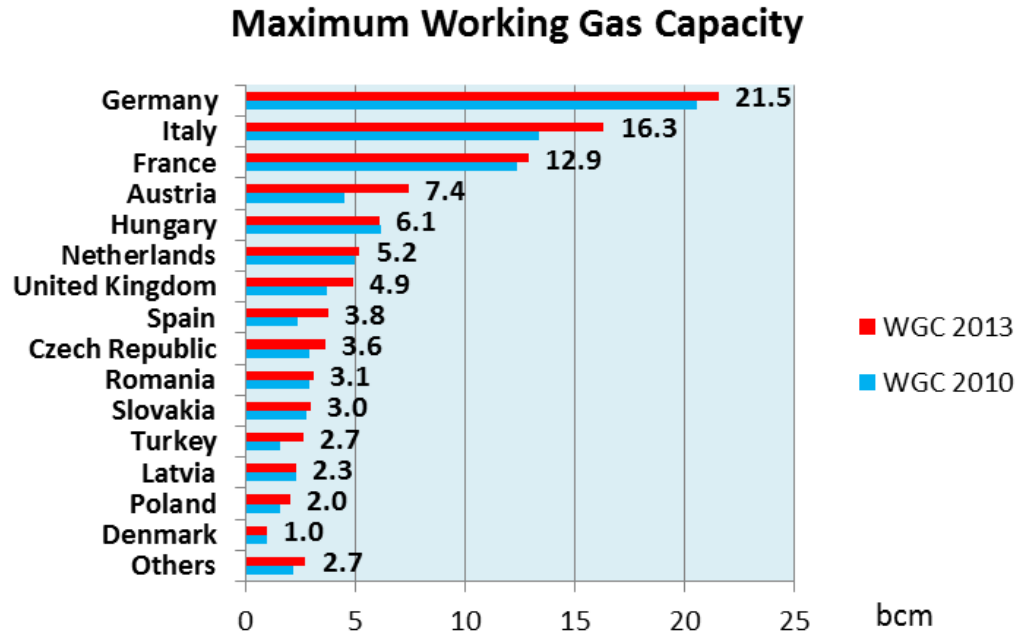
<http://www.cedigaz.org/surveys/Underground-Gas-Storage.html>



Europe - Current Situation



European Storage Capacity - 2013



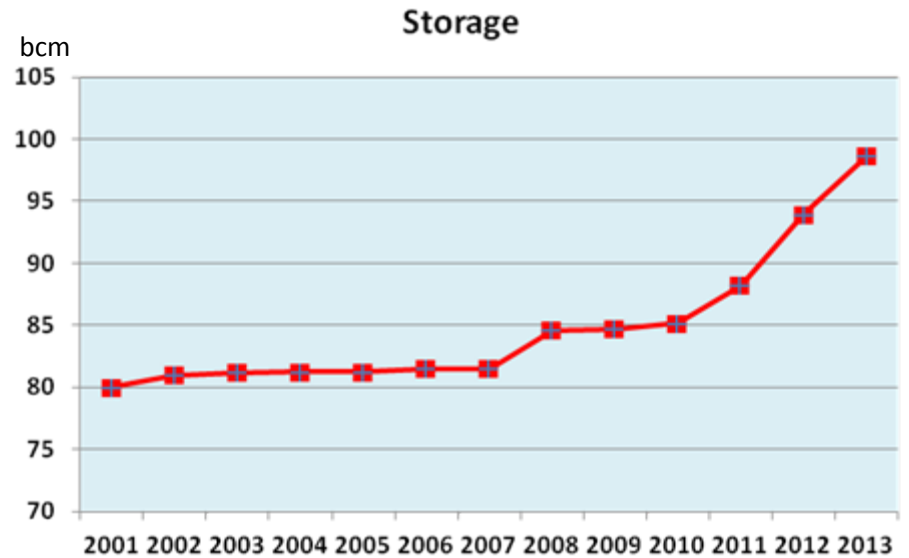
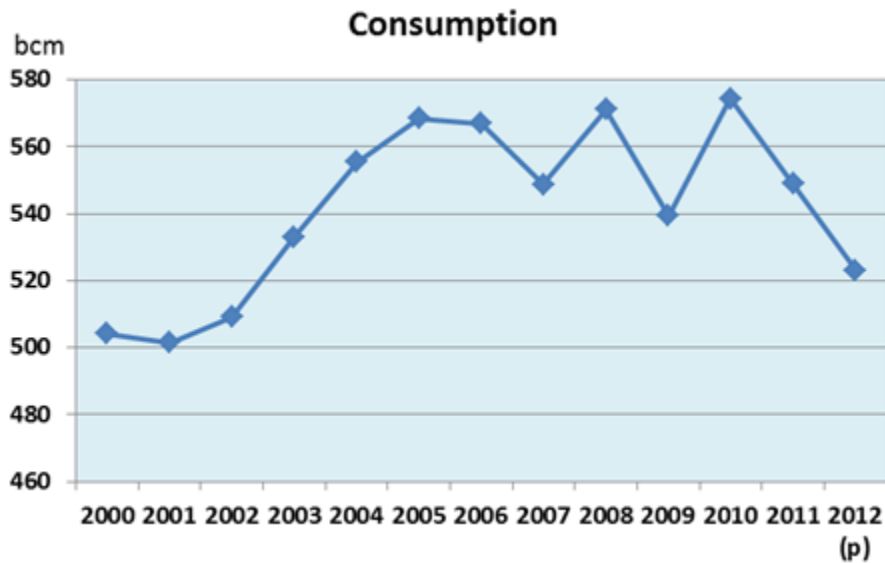
Source: CEDIGAZ, *Underground Gas Storage in the World, 2013*

■ Total capacity: 99 bcm

- 15 new UGS commissioned in the past 3 years + Extension of existing sites
- 13.5 bcm added



European Gas Demand vs. Gas Storage



Source: CEDIGAZ

■ Compared with 2008:

- Gas demand has decreased by 8%
- Storage capacity has increased by 16%



Decreasing Spreads and Volatility



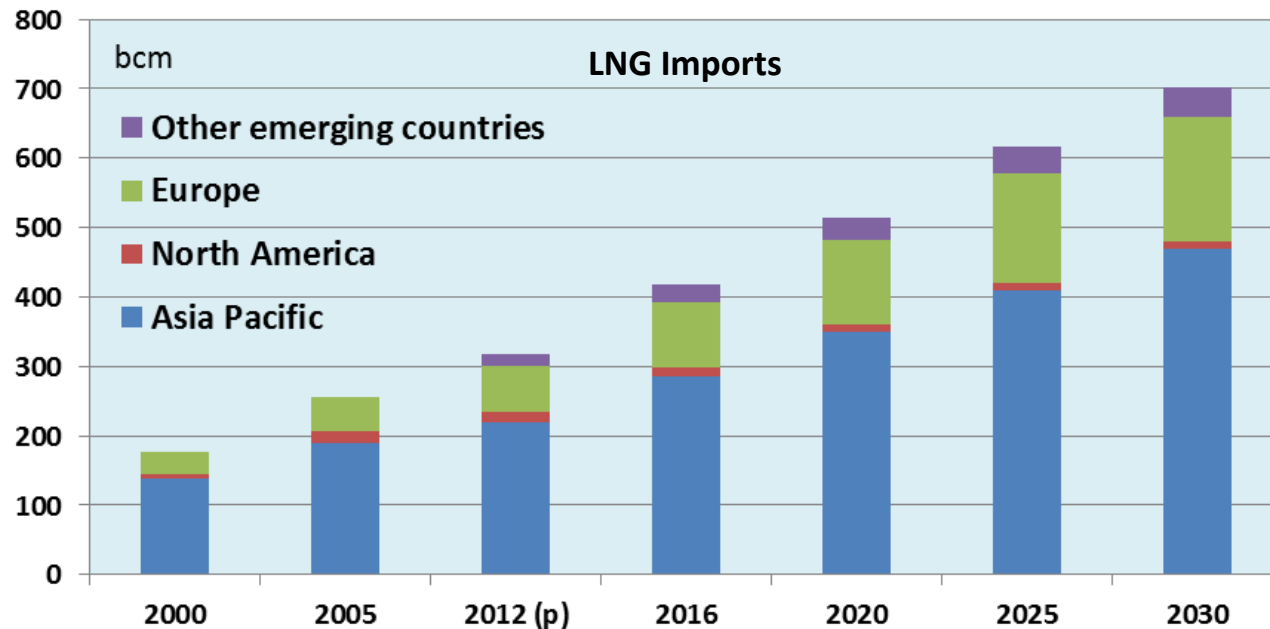
Source: TIMERA Energy

— Monthly volatility (annualized)
— NBP spot

- Excess supply
- Competition with other flexibility means (spot markets, LNG, etc.)
- And storage-to-storage competition (cross-border flexibility)



The LNG effect



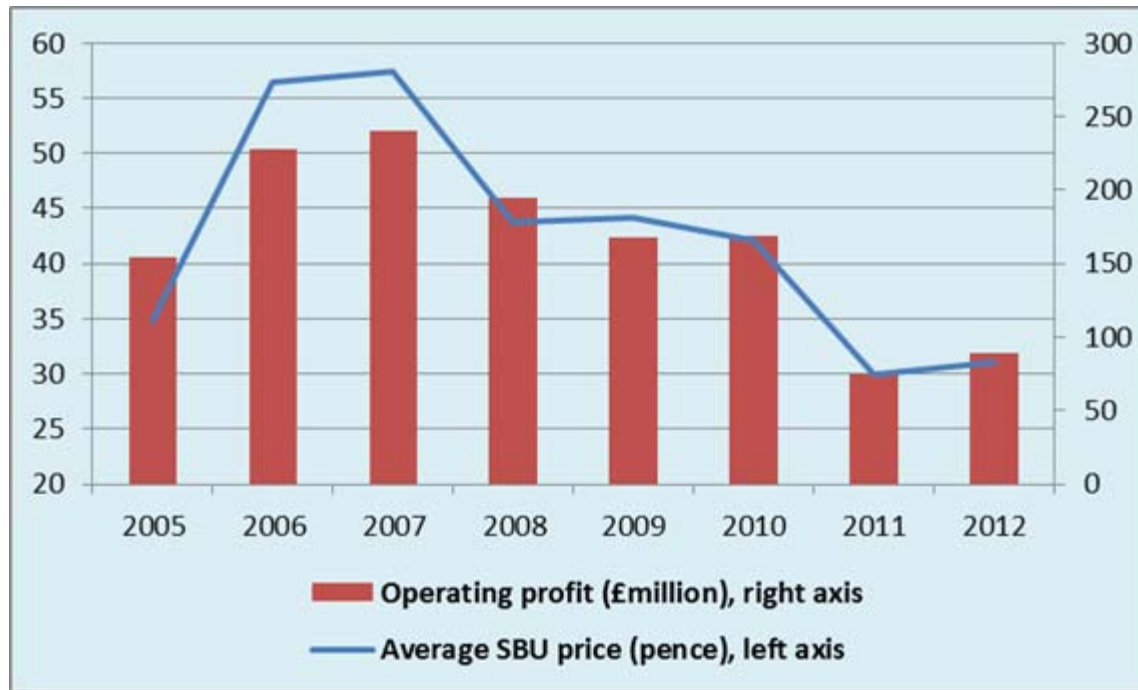
Source: CEDIGAZ, April 2013

- Recent tightness in LNG market and Asian price premium
 - Attractiveness of Europe for spot LNG sales?
 - Conversion of flexible Qatari cargoes into term supplies dedicated to Asia



Decreasing Storage Price

Annual average SBU price and operating profits, Centrica Storage Ltd, 2005-2012



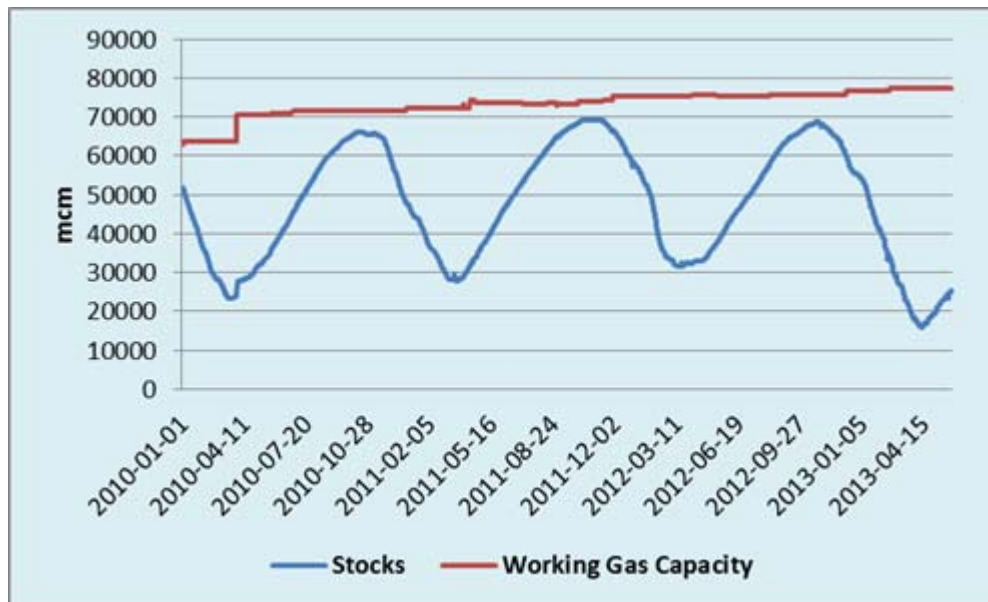
Source: Centrica Storage Ltd, Annual Reports, CEDIGAZ

■ **Today**, the market does not value storage asset



Low Utilization of Storage Facilities

Evolution of European inventories vs. Working gas capacity



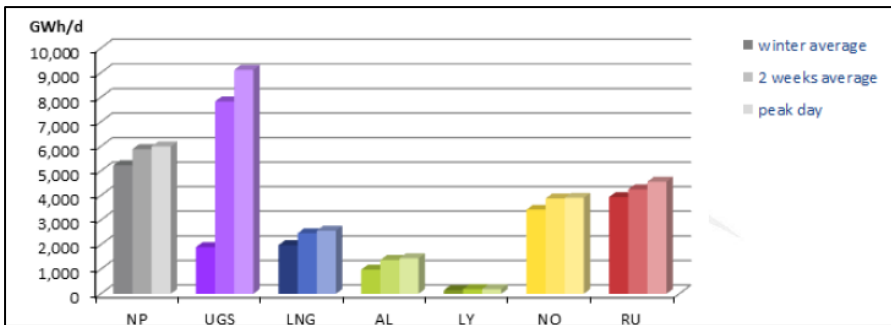
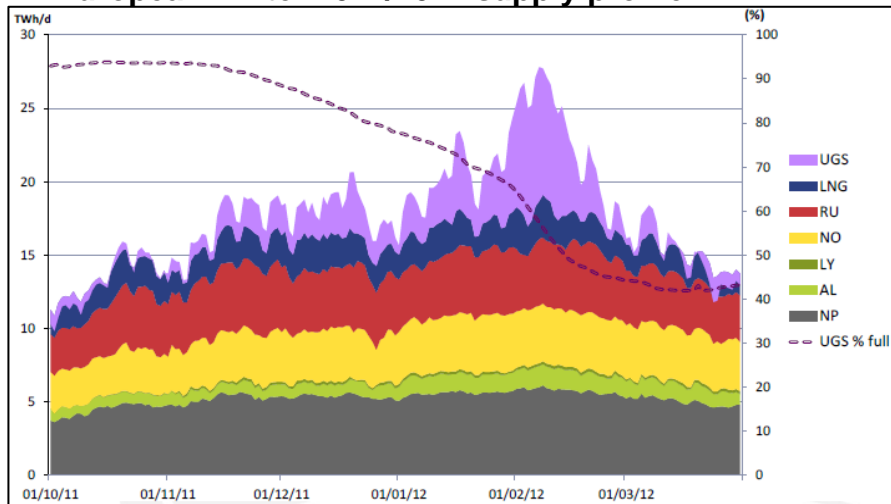
Source: GSE, Aggregated Gas Storage Inventory

- Economic and operational consequences
- Financial: investment in new seasonal storage?



Security of supply

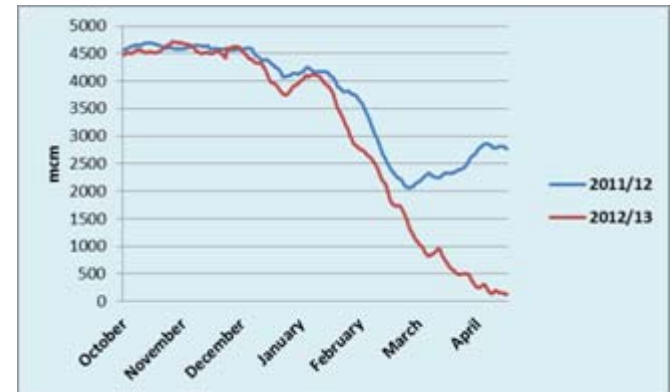
European winter 2011/2012 supply profile



Source: *ENTSOG*

- The most reliable source of flexibility during extreme cold periods

UK gas storage inventories



Source: *GSE/AGSI*



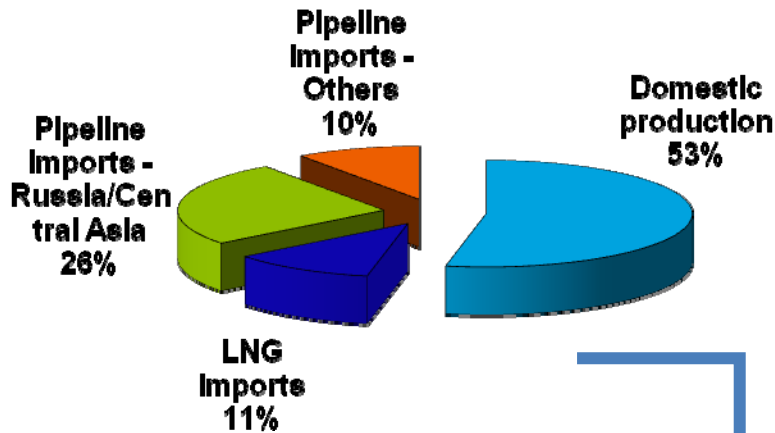
Europe - Outlook



The future of European Gas Demand and Supply

2012: 523 bcm

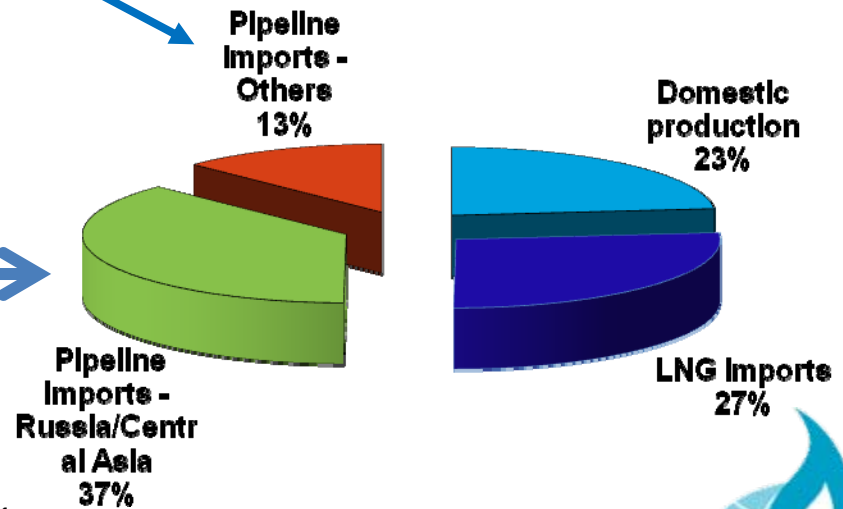
Dependence: ~ 50%



+ 1.1%/year

2030: 640 bcm
Dependence: ~80%

Doubling of net imports by 2030
(2030: 490 bcm)



Source: CEDIGAZ, 2012: provisional, 2030: CEDIGAZ Outlook



Demand and Supply Factors (1)

- Limited growth in European gas demand
 - Weak growth in residential demand (energy efficiency)
 - But increase in gas-fired electricity generation (post 2015, environmental restrictions on coal)
- More flexibility needed due to higher share of intermittent RES (fossil fuel backup)
- Power to Gas
- **More flexible UGS required**



Demand and Supply Factors (2)

- Decrease in domestic production (even with shale gas)
 - Decrease in production swings
- A doubling in gas imports
- Security of supply issues
- New long-distance pipelines built
- **More seasonal UGS needed for operational and strategic purposes**

- Long-term: shale gas development
- **More UGS needed (see US development)**

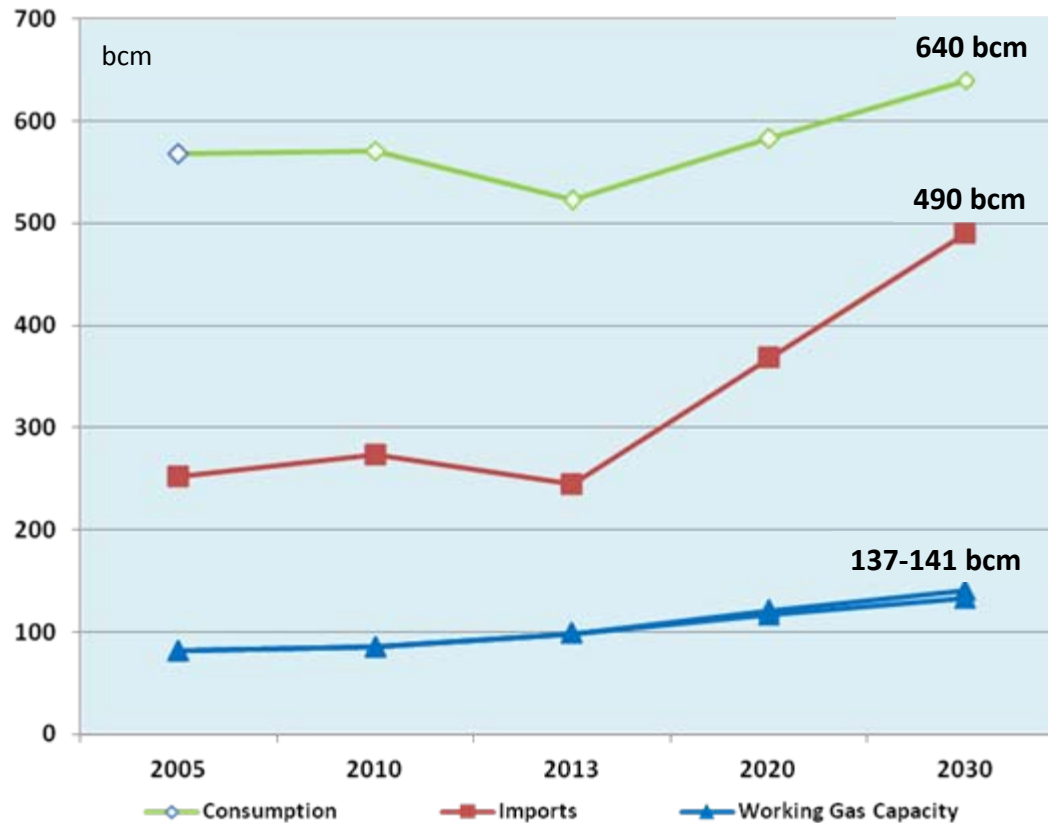


Market Liberalization

- **Market hubs/Gas trading** need UGS (see US development)
 - Flexible UGS close to market hubs
- **Market-based pricing**
 - Less flexibility in gas export contracts
 - More flexibility/UGS needed
- **More network balancing needs**
- **Greater interconnectivity** of the European network
 - Less UGS and reliance on neighbouring flexibility/UGS ?
 - But limited to short-distance neighbouring countries
 - More cross-border UGS built (ex: Epe)
 - A « European » storage market



Estimates of European UGS Needs by 2030

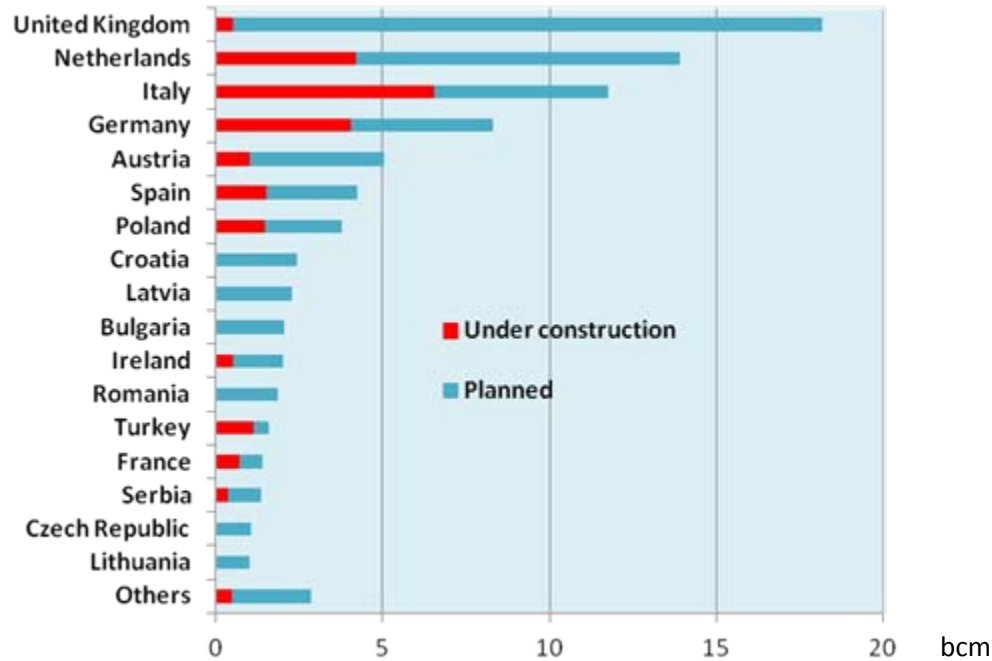


Source: CEDIGAZ, *Underground Gas Storage in the World, 2013*

- **An additional 38 to 42 bcm required by 2030**



Europe: Planned Working Gas Capacities



Source: CEDIGAZ, *Underground Gas Storage in the World, 2013*

- Total identified projects: 85 bcm
- Under construction: 22.5 bcm (with a completion date up to 2025)



European Gas Storage Players – April 2013

Max working gas capacity

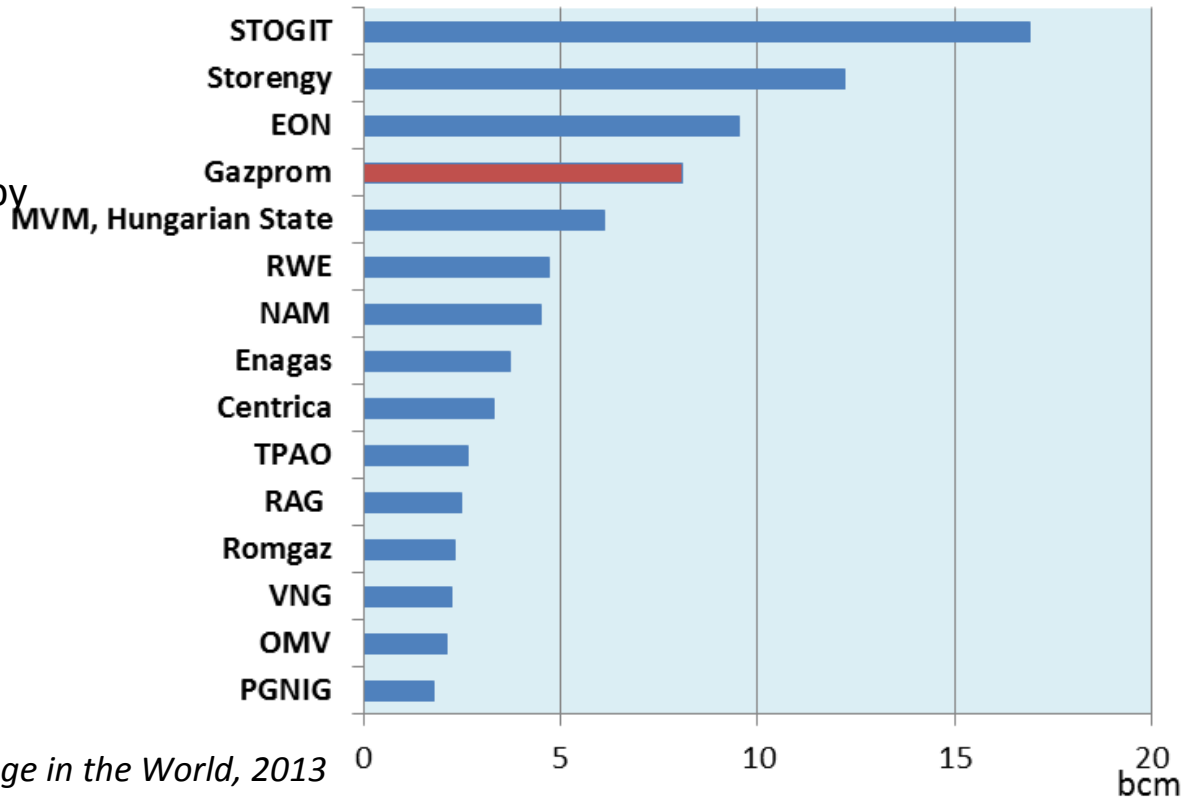
Takes into account ongoing acquisitions

-Acquisition of WINGAS/astora by Gazprom

-Hungary: Sale of EON's UGS to MVM and MOL's storage to the State

-Acquisition of 45% of TIGF by SNAM

Takes into account direct share owned in foreign storage/utility companies.



Source: CEDIGAZ, *Underground Gas Storage in the World, 2013*

- **A changing landscape:** “new” players are appearing for operational and strategic reasons



Light at the End of the Tunnel

- **85 bcm of UGS projects**
 - **Of which 22.5 bcm under construction (a very competitive market)**
 - A majority of salt-cavern projects (market liberalization)
 - Not so much new seasonal storage (security of supply?)
- **Not all planned storage will be built**
 - Projects under competition for the same (regional) market
- The situation is quite contrasted between NW Europe and South-Southeast Europe (and UK)
- Supply & demand evolution and market liberalization will drive a new period of growth for UGS
- Cedigaz estimates that **European UGS demand will increase by 38-42 bcm by 2030**
- **Challenges:** investment and security of supply



Thank you

