The Key Role of Gas Storage in the European Gas Market in the light of the Russia-Ukraine Crisis

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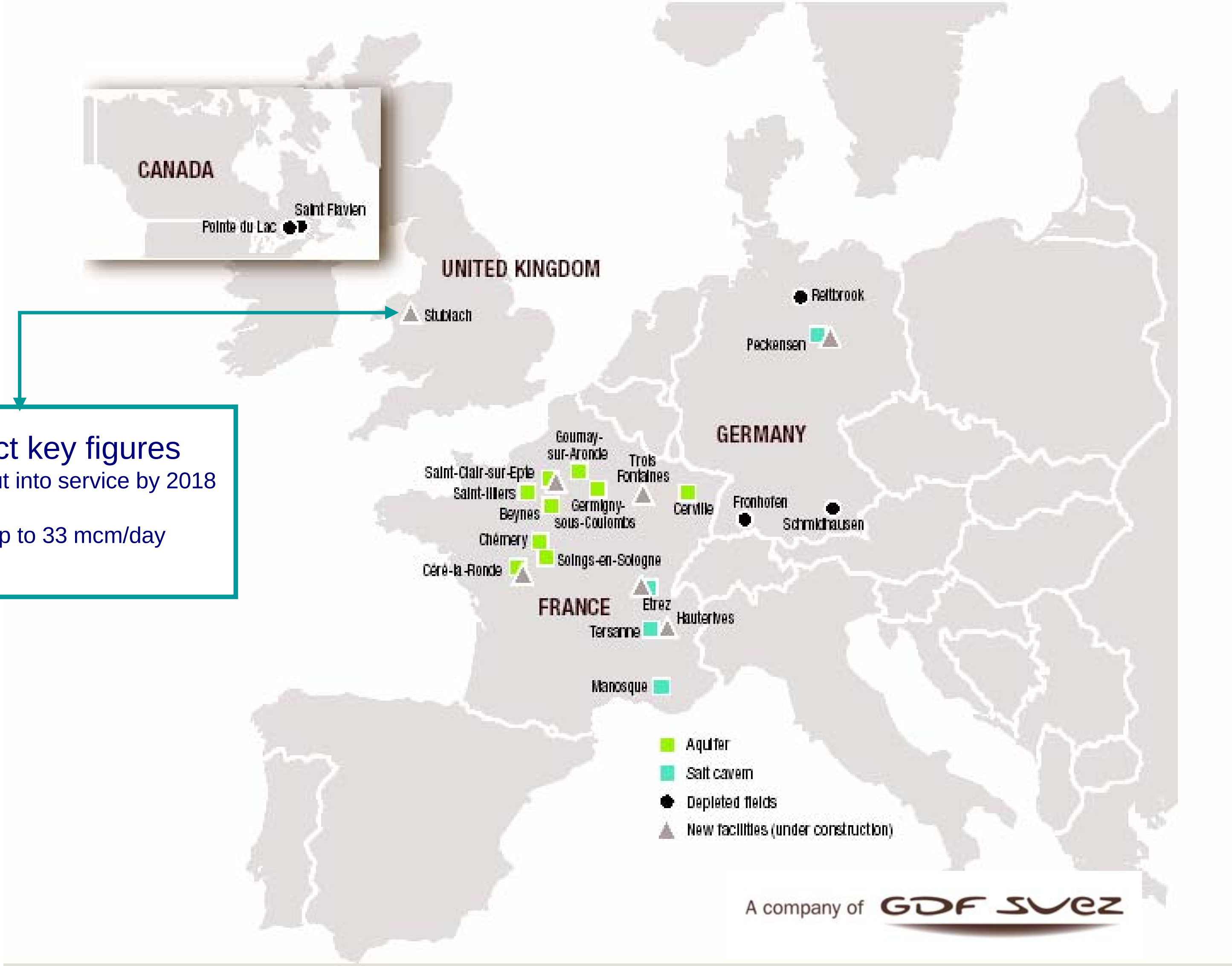
Gas Infrastructure Forum : Ensuring European Security of Supply
London, 15th June 2009

Our sites and current developments



Stublach project key figures

- 28 caverns to be put into service by 2018
- Capacity: 400 mcm
- Withdrawal rates: up to 33 mcm/day
- 500 M€ Capex

A company of GDF SUEZ

Valuable tools on our website – www.gie.eu.com

- **Aggregated Gas Storage Inventory**

- **Storage Investment Database**

and GSE Storage map

- **GSE Position papers on strategic storage, on third energy Package, on capacity allocation mechanisms & congestion management methods, key messages on the flexibility market**

- **GSE observations on GGPSSO implementation, on Ramboll study**

Gas Storage Europe

Agenda

1. European gas storage market – Overview
2. Russia-Ukraine gas crisis: lessons to be learned
3. Gas Storage development and opportunities
4. European legislative framework
5. European gas storage market: main issues

1. European gas storage market - Overview

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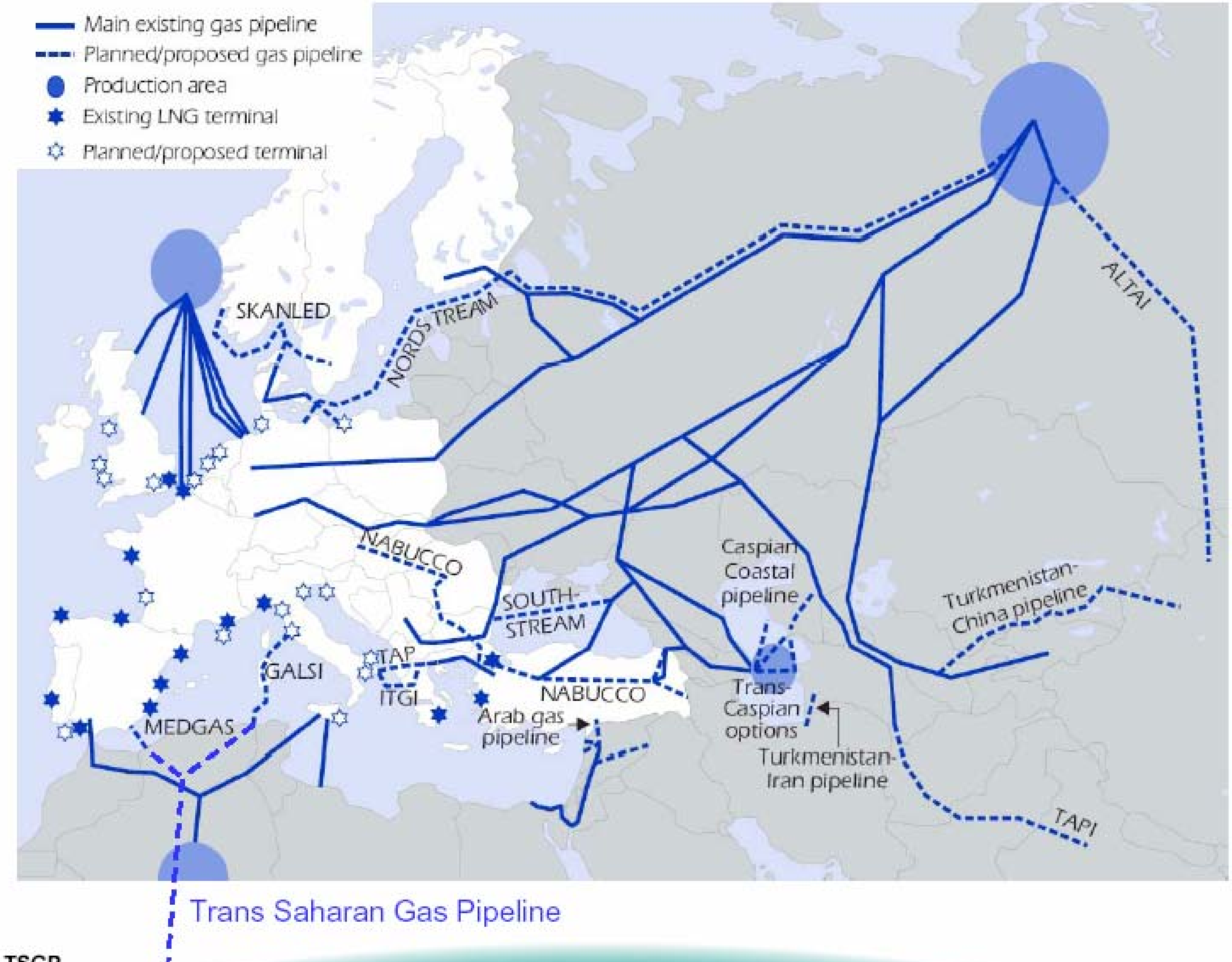
European Gas Supply Transmission system



Sources : IEA / TSGP

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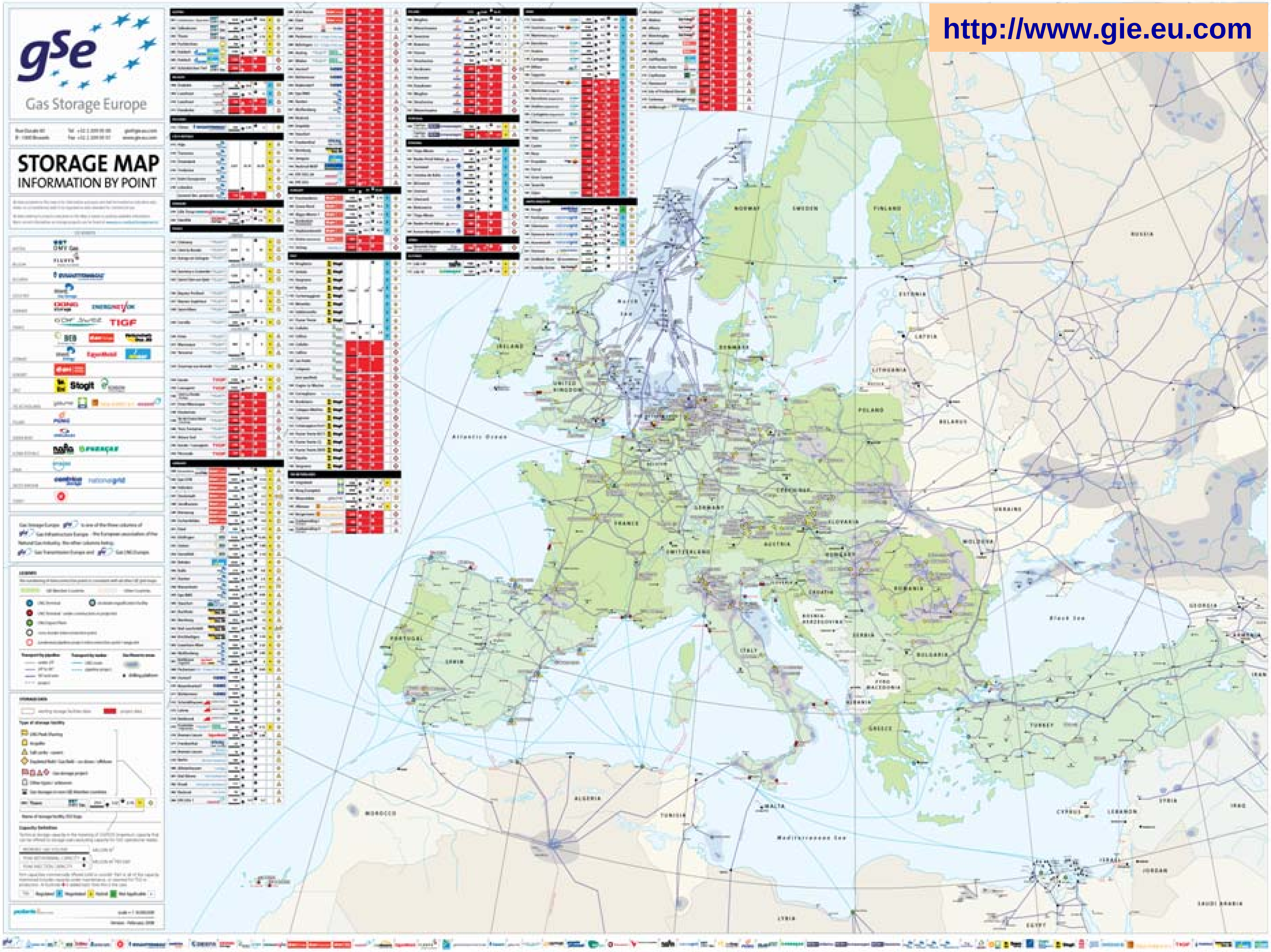

Storage volumes in EU-27– current situation

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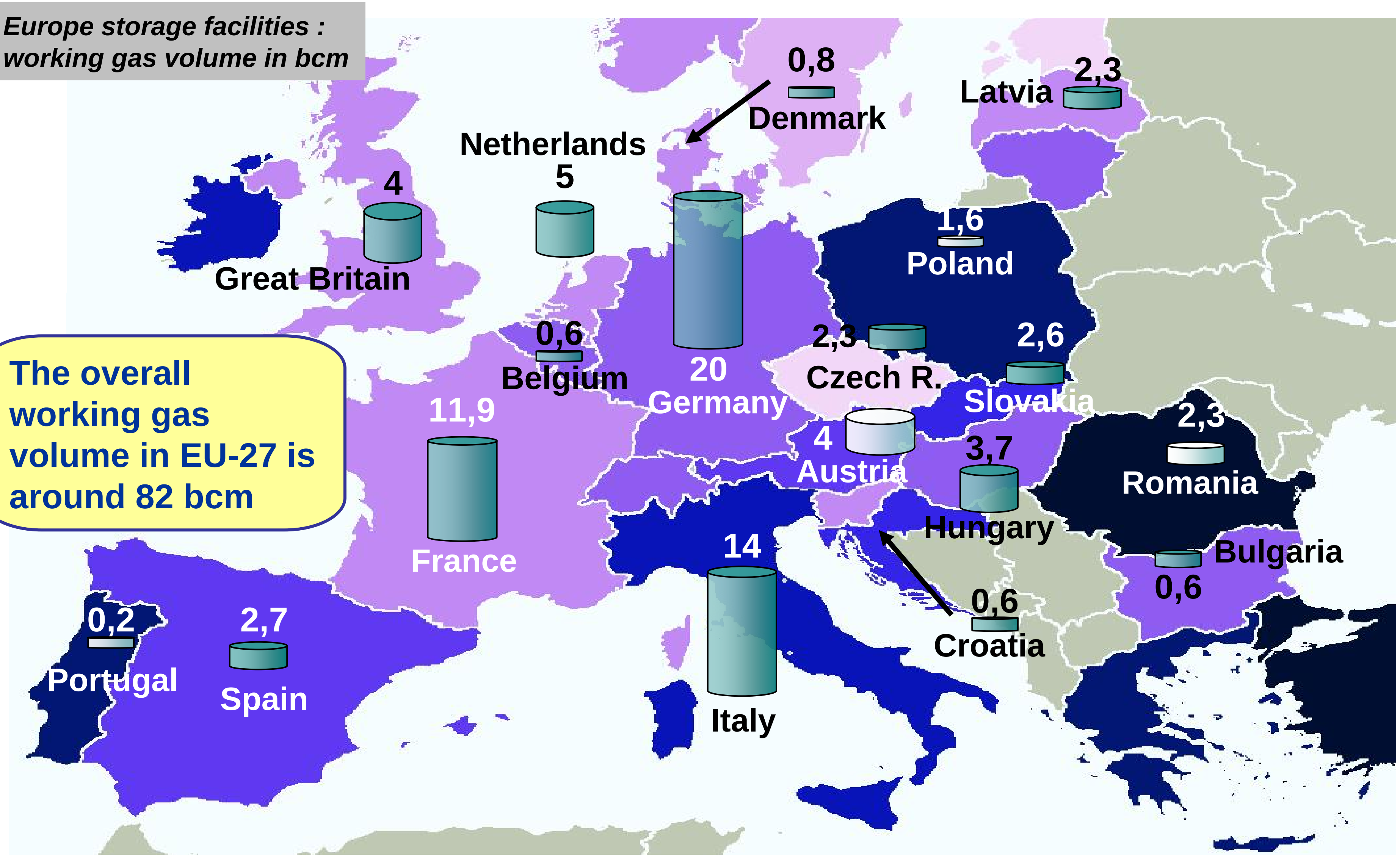
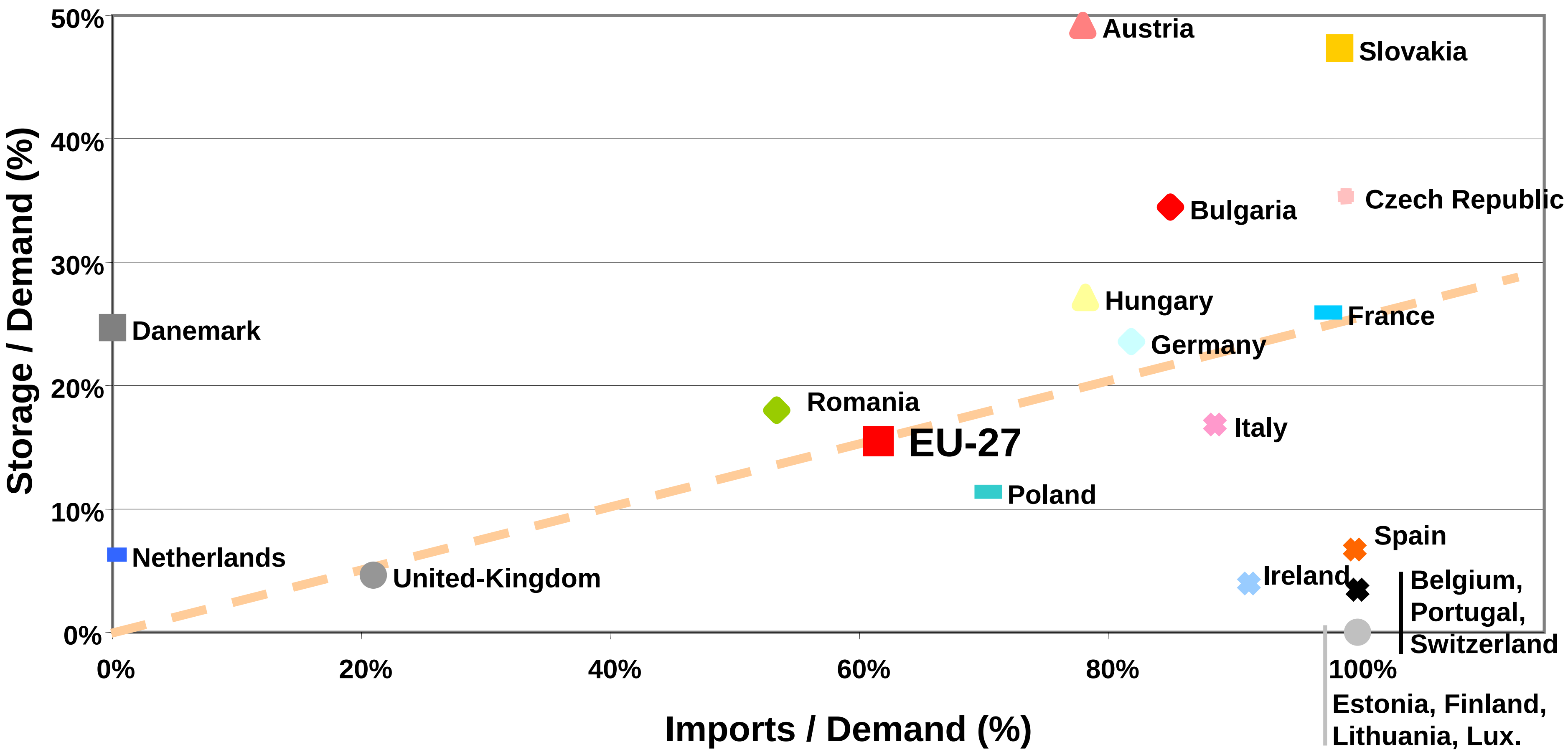


The overall working gas volume in EU-27 is around 82 bcm

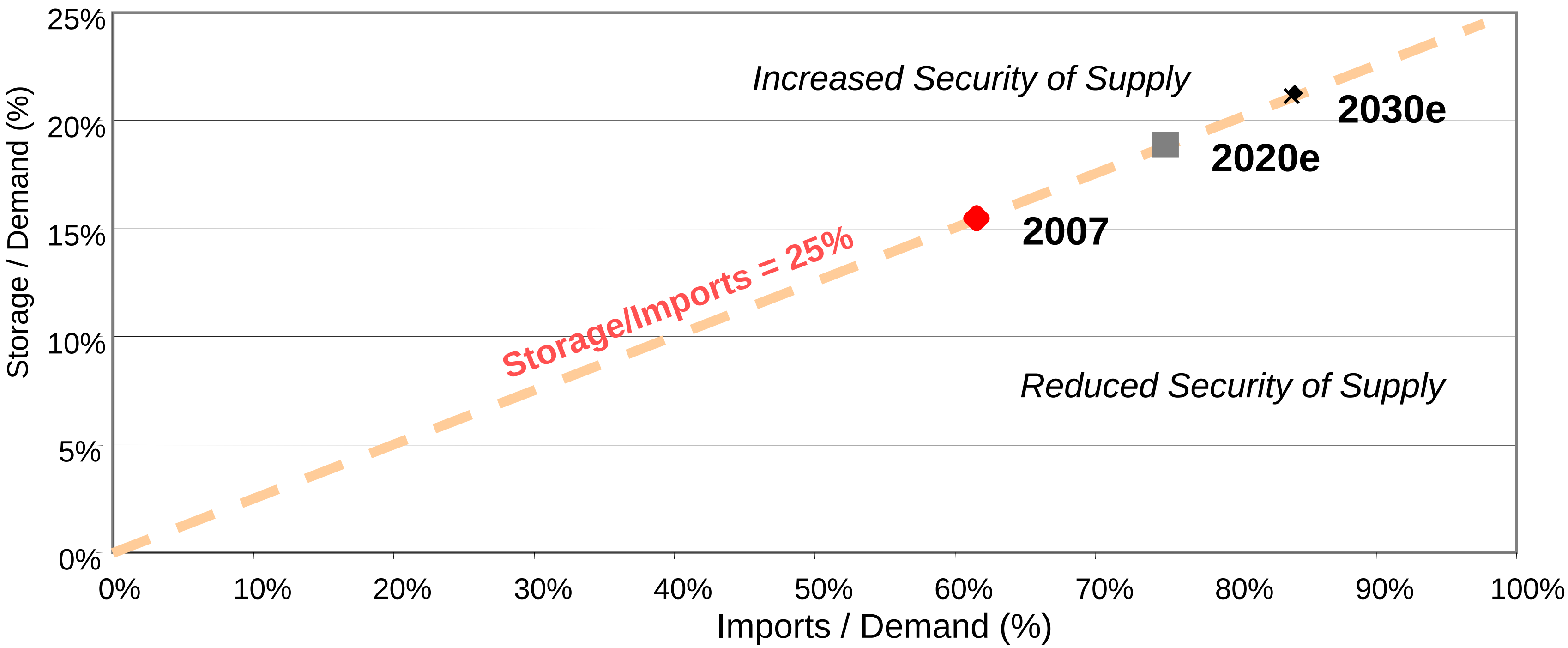
Source: GSE 2008, CEDIGAZ 2007

Another way to look at storage in Europe…



Source: SG Equity Research / Eurogas / GSE 2008

… and to assess the need for new storage



Gas demand CAGR up to 2025: 1.5%
Storage needs CAGR up to 2025: 2.8%

EU storage volumes need to be expanded by 50 bcm until 2025!

Source: SG Equity Research / Eurogas / GSE 2008

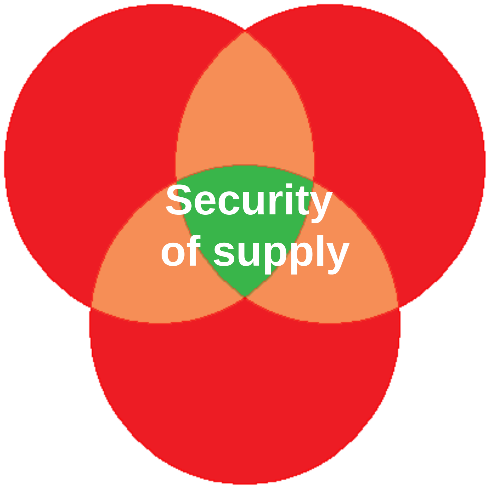
2. Russia-Ukraine gas crisis: lessons to be learned

Russia-Ukraine gas crisis : lessons to be learned (1/2)

➔ European commercial storage facilities have played a key role in ensuring security of supply.

➔ The real issues in this crisis are due to a lack of diversification in supply sources and supply routes for some countries.

Diversification of the energy mix



Diversification of the energy sources

Diversification of supply routes

Russia-Ukraine gas crisis : lessons to be learned (2/2)

➔ The good functioning of the commercial storage facilities has shown that the development of commercial storage in a more interconnected market must be fostered in order to reinforce security of supply in Europe.

➔ Strategic stocks should not be deemed as a solution for the security of supply problem.

➔ There should not be a confusion between strategic storage facilities and stock obligations in commercial storage facilities (Strategic stock management) in order to ensure security of supply for the customers.

➔ More transparency in stocks information from system operators is paramount : GSE has decided to further upgrade its Aggregated Stock Inventory (GSE ASI) platform.

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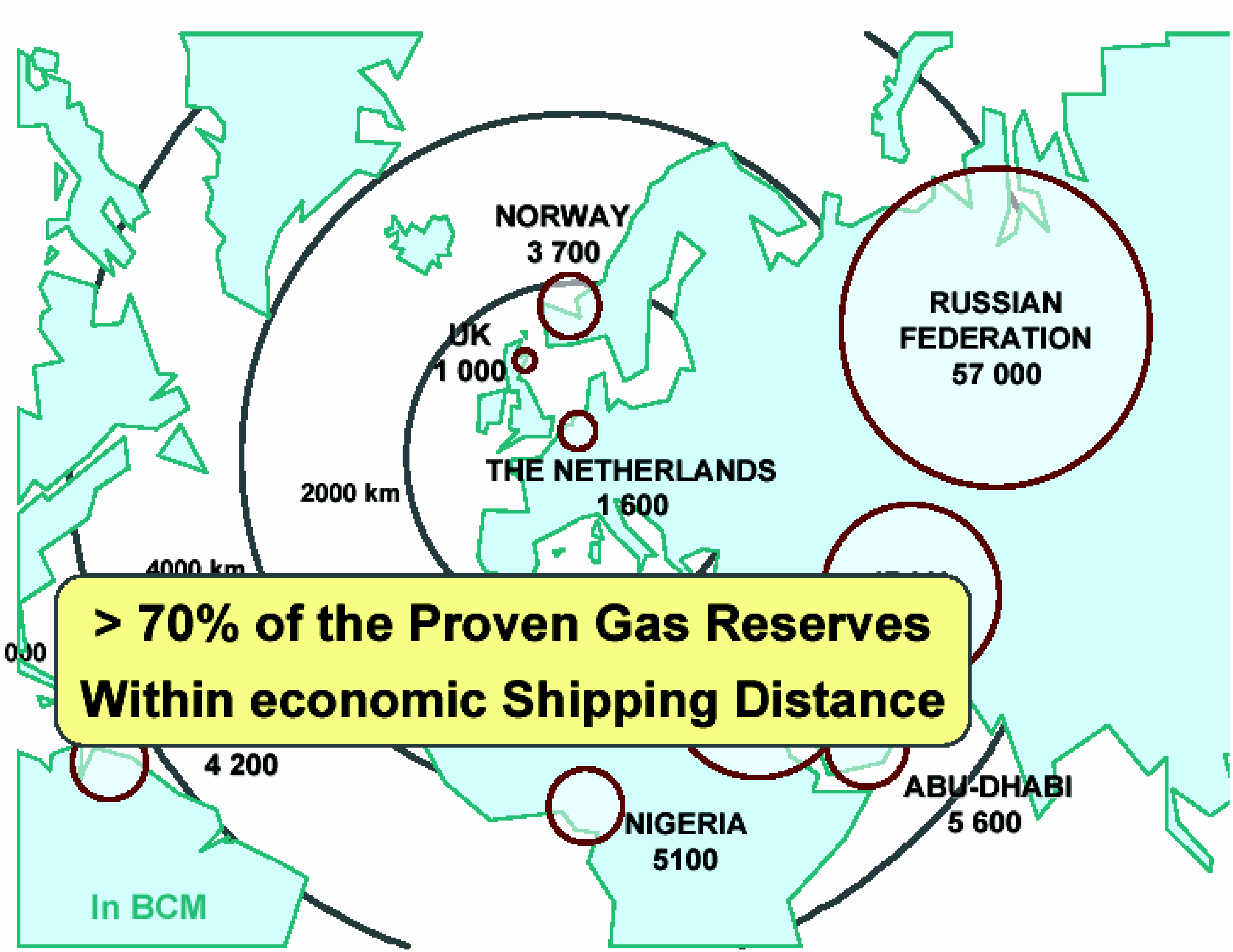
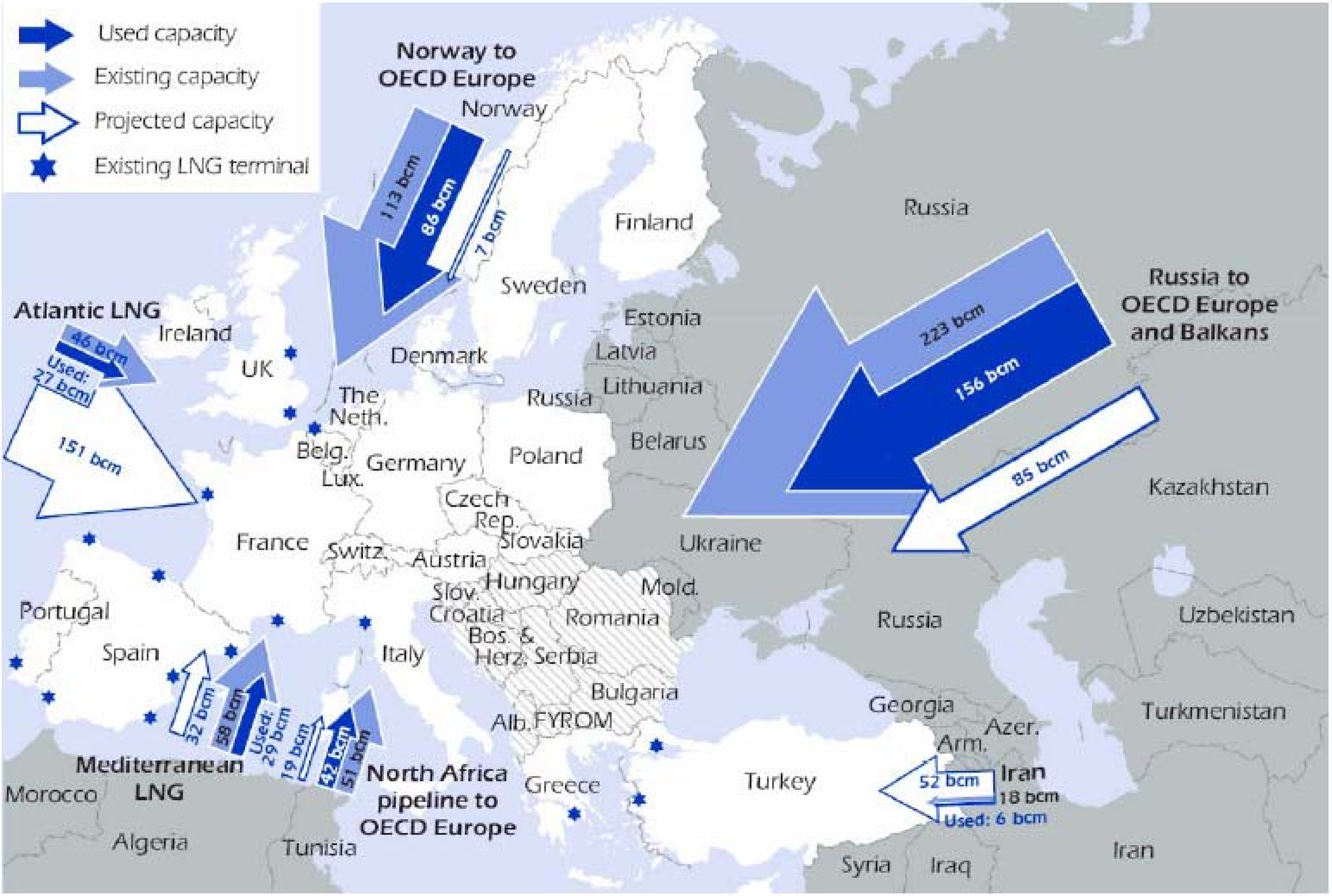
2. Gas Storage development and opportunities

Gas Supply for Europe



Source : Cedigaz 2005

EU : Supply Capacities in 2006 & 2015



Source : IEA, GIE, industry

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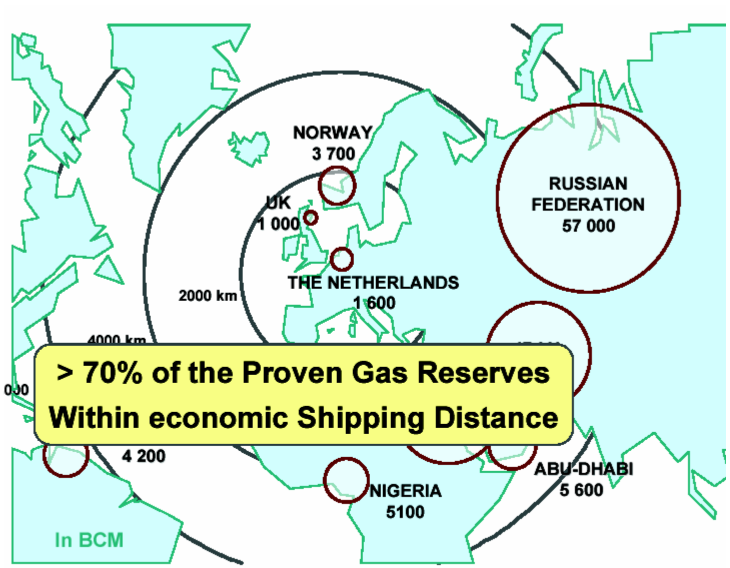
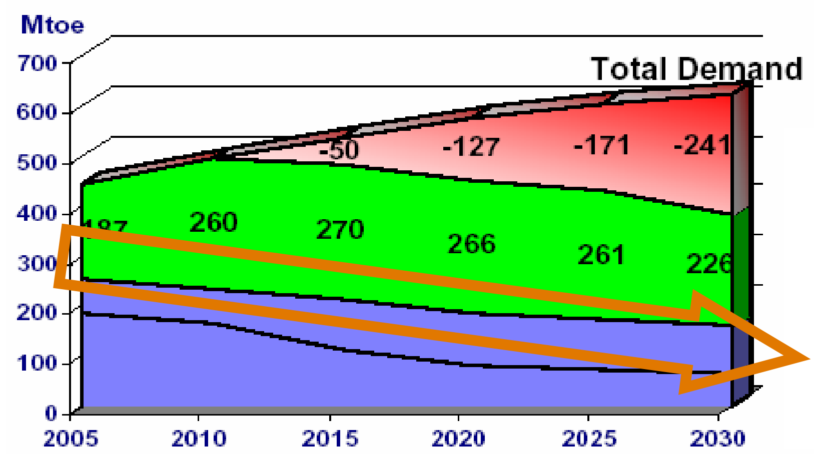
Why are gas storage needs increasing in Europe?

Longer transportation routes



Decreasing EU gas production



Additional Supplies to be defined
Contracted Imports and possible prolongations from outside Europe
Potential Norwegian exports
Indigenous Production (EU27)

EU27: Natural Gas Supply outlook
Source : Eurogas - Natural gas demand and supply : long term outlook to 2030, 16/11/2007

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Investment : SSOs are responding to market needs

- **Database of EU storage investments was launched in July 2007:**
  - Publicly available information
  - Projects divided into 3 categories: planned, committed and under construction
  - Updated regularly
  - From an initial **30 bcm** WG capacity increase to 2015 (July 2007) to around **63 bcm** (February 2009)
  - Grand total of around **110 projects** : **new players are increasing their role** : 25% of projects / 30% of planned new capacity (~19 bcm)
- **A powerful and transparent instrument to evaluate storage supply perspectives.**

http://www.gie.eu.com/maps_data/database/index.html

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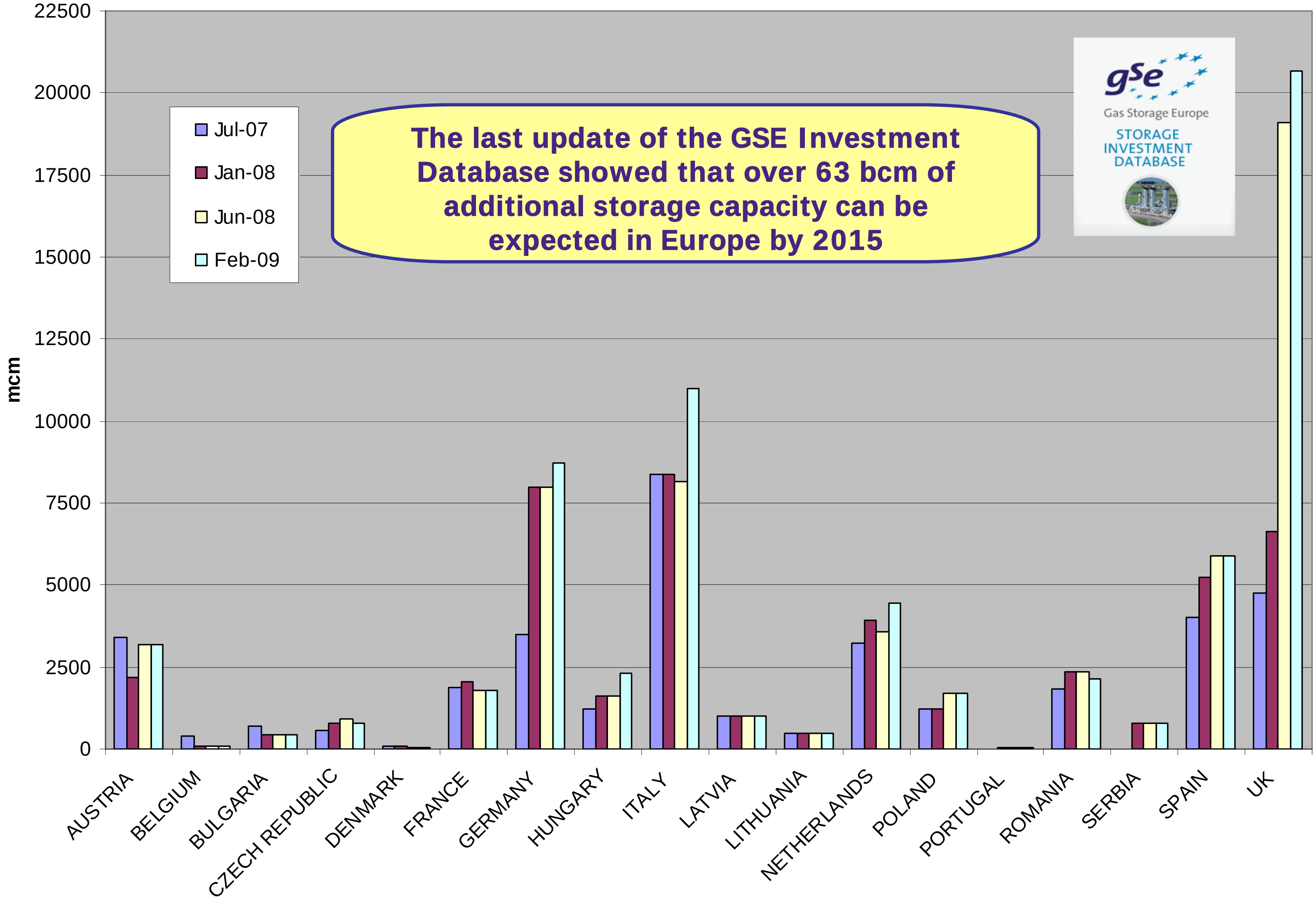

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3. European legislative framework

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2 directives for 2 objectives

- European legal framework:
  - Security of supply (2004)
  - Internal market liberalisation (2003)
    - Ensures Third Party Access (TPA) to storage
    - Gives alternatives for Member states: Regulated / Negotiated

- European voluntary guidelines: Guidelines for Good Practices for Storage System Operators (GGPSSO)
  - Compliance with GGPSSO shows a transparent and non-discriminatory access to storage

3rd directive

- 3rd Energy Package including a 3rd gas directive

GSE believes that negotiated TPA should be the preferred choice wherever market conditions allow as this regime best facilitates investments and further development of the market

4. European gas storage market : main issues

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European gas storage market : main issues

➔ European gas storage development : we will have to develop as much capacity over the next 20 years as we have developed over the last 60 years.

➔ Competition with other flexibility tools : indigenous gas production swing, imported pipeline gas contract flexibility, peak shaving, spot markets, imported LNG, new transmission lines, interruptible gas, …

➔ Attracting funding : we have to invest up to 50 billion euros over the next 20 years to face this development in the context of the current economic crisis.

➔ A stable European Regulatory framework that encourages new storage developments as well as the optimal use of existing storage facilities is essential.

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Thank you for your attention!

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