



Storage and Security of Supply

Madrid Forum, 6 May 2014

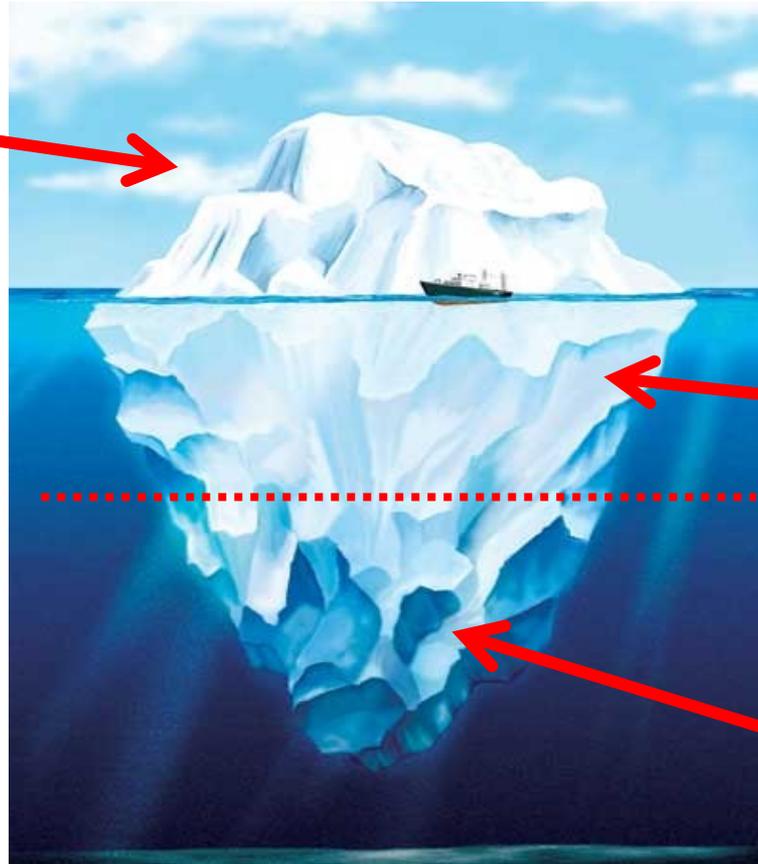
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Role of storage

The Market Value of Storage

- Intrinsic value
- Extrinsic value



System Value of Storage

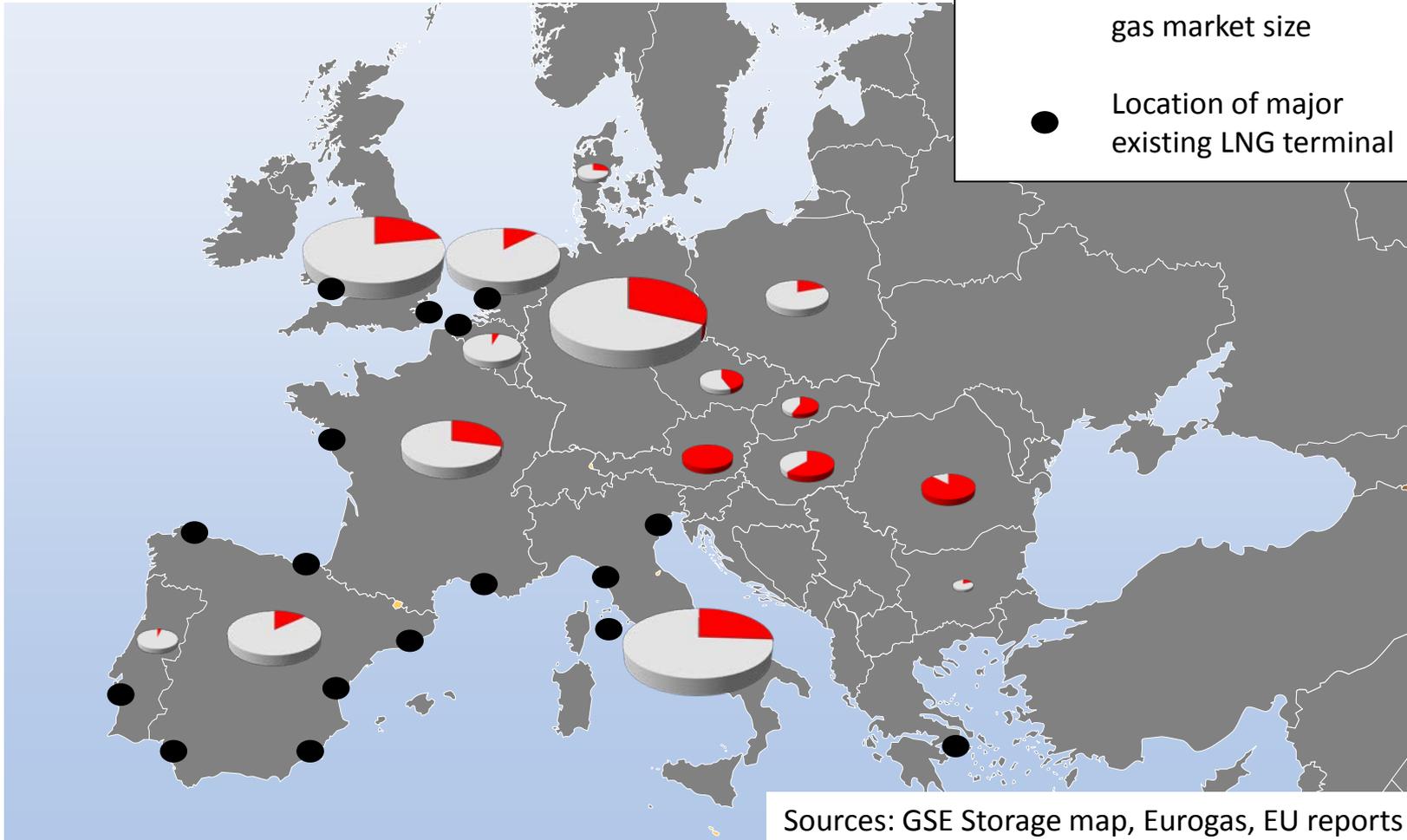
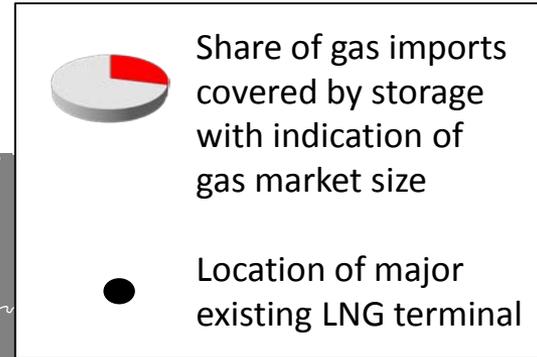
- Optimized production
- Efficient gas transport

The Insurance Value of Storage

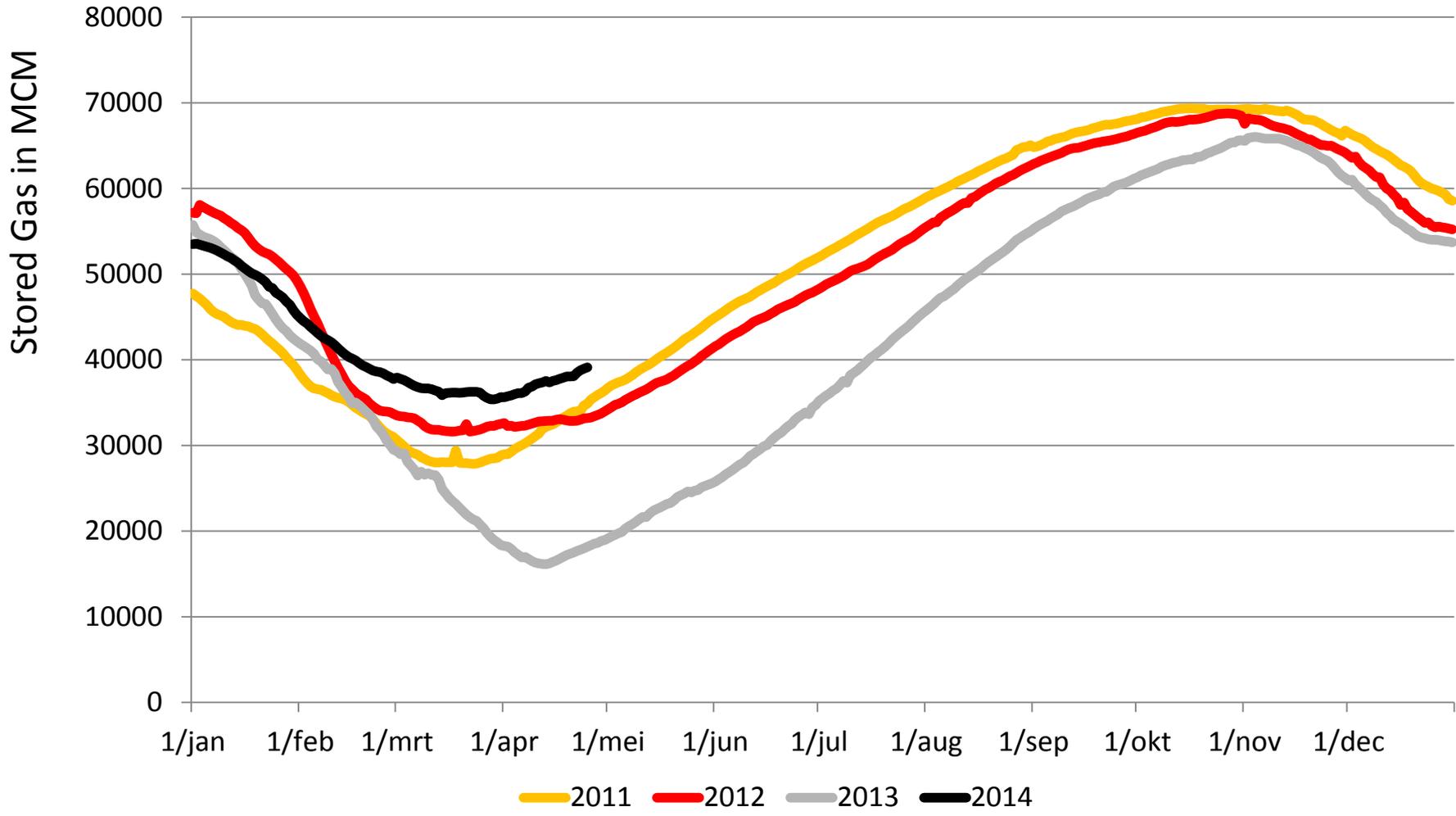
- Hedge against supply risk



Gas storage capacity in Europe

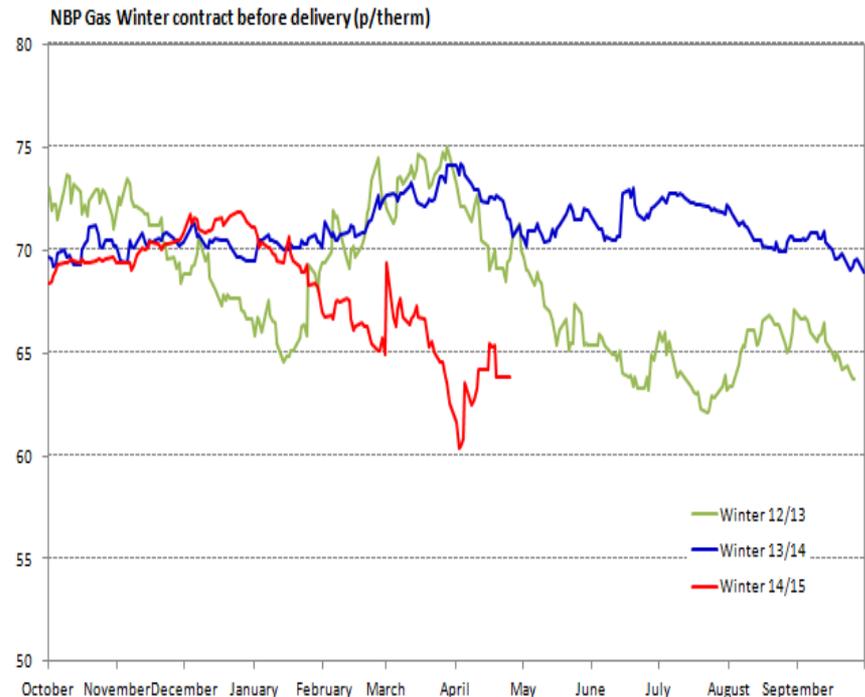


Current storage levels above previous years



Storage plays a key role in providing Security of Supply during this crisis

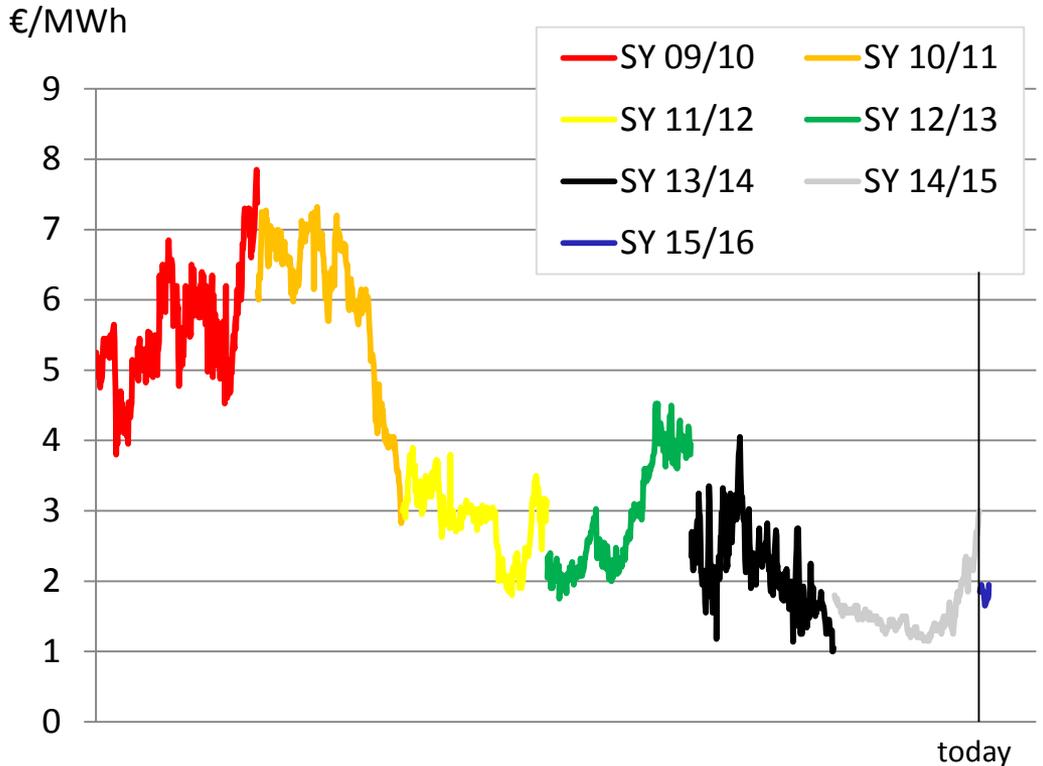
- The political situation in Ukraine since the beginning of the year has had no impact on delivery of Russian gas through the different import routes
- Due to the warm winter storage stocks across Europe remain high
- The Russia-Ukraine crisis created an initial shock in prices but this has dampened due to high stock levels
- There is sufficient spare import capacity from Russia into Europe to allow 67% of Ukrainian flows to the EU via alternative routes
- ENTSOG analysis shows that EU stock levels could reach 90% by the end of the Summer even in the event of a one month disruption to Russian supplies¹



¹ENTSOG Summer Supply Outlook 2014

Going forward the outlook is unclear

Seasonal price spread at historical lows discouraging users from contracting storage, but the spreads...



Evolution of forward seasonal spreads on TTF for the following storage year

...cannot predict exceptional events

...may be a vicious cycle as storage use influence them

...ignore short-term, extrinsic value

...disregard system efficiency

...reflect only part of the market (futures)

Sustained low spreads may ultimately lead to facility closures...

SSOs may be
unable to recover
their costs

Mothballing?
De-commissioning?

Both measures are
expensive and even
sale of recoverable
cushion gas destroys
value

Decommissioned capacity may be missing in the future when
demand picks up
But it takes 5-8 years to construct storage

During this cycle, Security of Supply is gradually reduced

...which is irreversible, costly and short-sighted

But is this likely to happen?

Demand

Scenario 1: demand recovers

- Economic downturn could be reversed
- Gas power plant as back up RES
- Gas favorable generation fuel

Scenario 2: demand remains low

- More efficiency measures/ district heating
- Mild temperatures and climate
- New technologies for power generation

Supply

- Loss of flexible indigenous gas fields may not be coped with by other tools
- Import dependency rises and need to store gas close to market
- Competitiveness of storage facilities compared to other flexibility tools
 - Summer/ winter spread
 - Level playing field
 - Regulatory framework fit for purpose

How to realise the full value of storage?

Benefits to the market and system	Possible regulatory arrangements
<ul style="list-style-type: none"> • exploiting price differentials in the market • meeting flexibility requirements • optimising use of transmission systems 	<ul style="list-style-type: none"> • a level playing field for storage in the flexibility market • regulatory framework conducive to commercial innovation • transmission fees that reflect potential storage benefits for end-users • non-discrimination between network users
Security of Supply benefits	Possible out of market interventions
<ul style="list-style-type: none"> • response to demand peaks • insulation against supply interruptions • a value for security of supply? 	<ul style="list-style-type: none"> • non-discriminatory rules for storage users in system emergency • supply obligations • strategic storage

CEER and GSE Vision

CEER published “Changing storage usage and effects on security of supply” in November 2013, its initial conclusions were:

- Storage competes in a wider flexibility market
- A shift to short term booking is (likely) to take place
- Storage is available in the short term
- Longer term capacities less, clear

GSE published “Gas Storage Value” in 2013. It concluded that storage provides value in the following ways:

- Market Value
- System Value
- Insurance value



Changing storage usage and effects on
security of supply
CEER interim report

Ref: C13-GWG-102-03
20-November-2013

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Gas Storage Value

Next Steps: joint stakeholder workshop is planned for May to develop a joint CEER and GSE vision