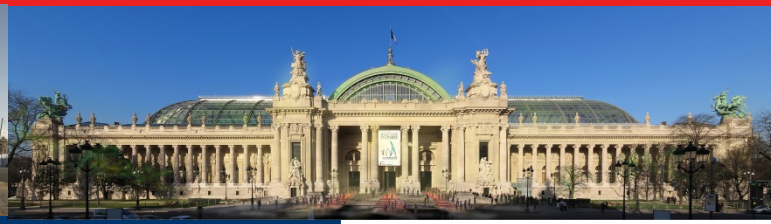
26th World Gas Conference

1 – 5 June 2015, Paris, France



Thematic Session WOC 2-1:
What is ahead of us? Trends and perspectives for UGS
3 June 2015

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Storengy

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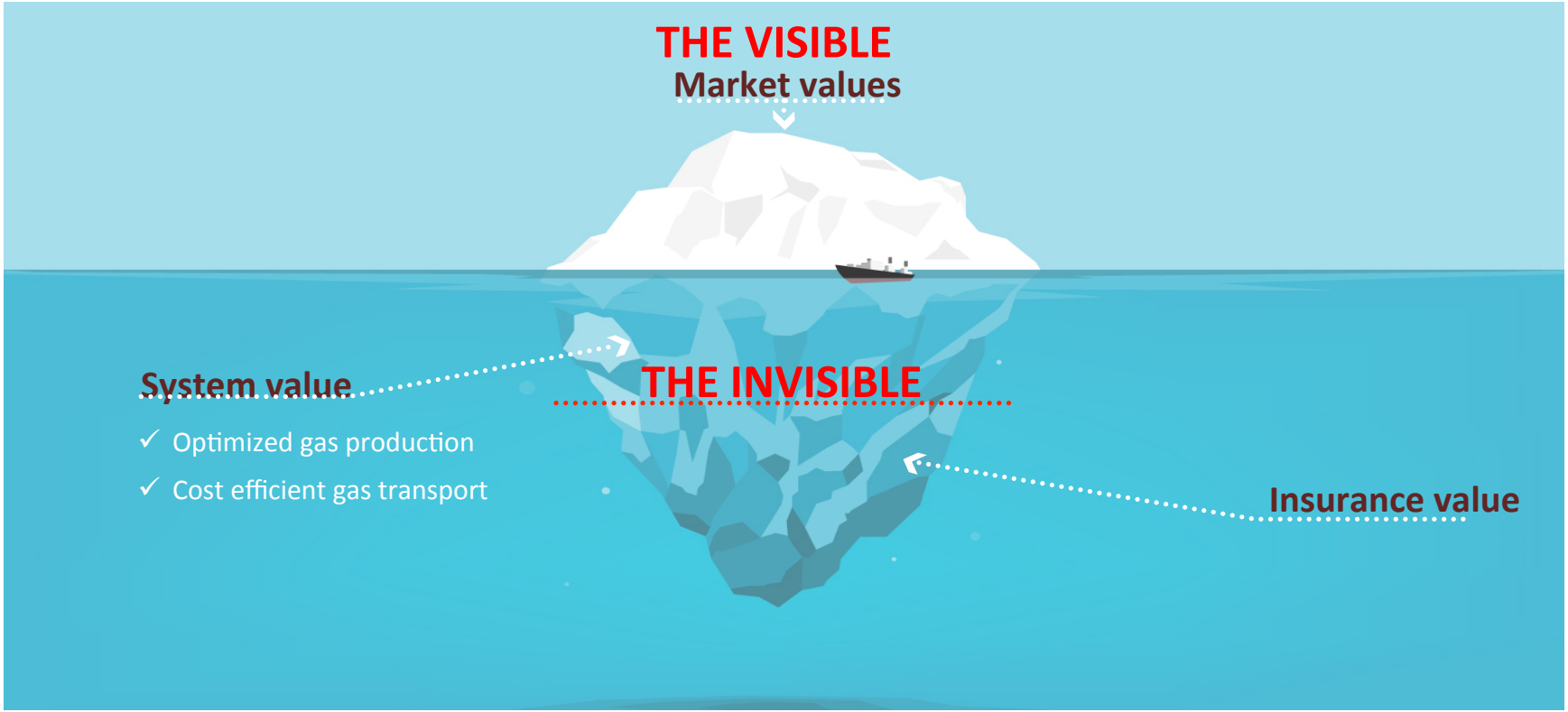
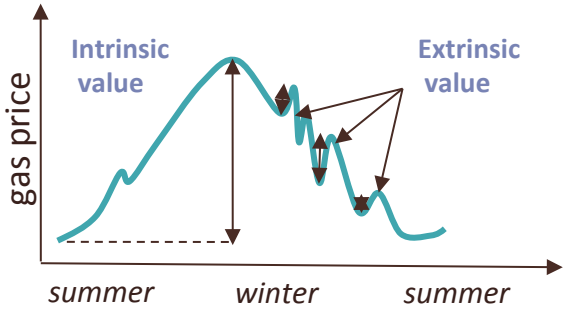
The value of gas storage in Europe is like an iceberg



Market values: price signals for storage are historically low

Intrinsic

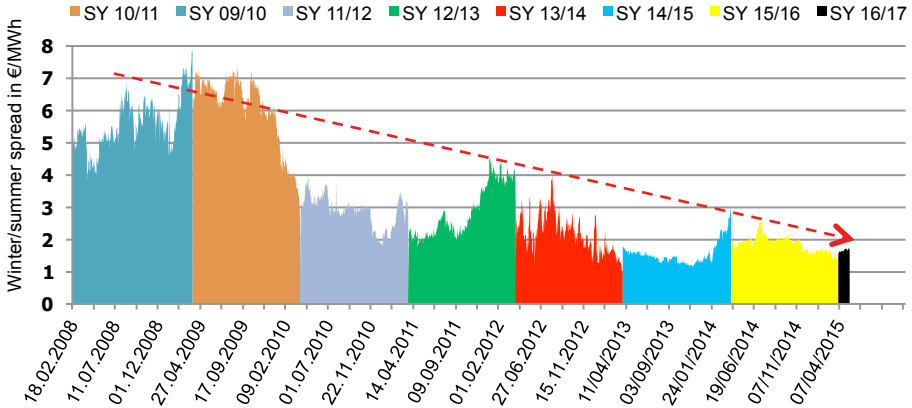
- Based on gas price differential between summer and winter.
- Reflects the traditional use of storage.
- A “static view” of the seasonal forward price curve.



Extrinsic

- Based on shorter-term price differentials : day-ahead, weekend, month ahead etc.
- Function of price volatility, asset flexibility, optimization strategies.
- Potential high value but limited price visibility

Evolution of the S/W spread at the TTF hub



System values: storage benefits are enormous but neglected

Cost efficient gas transport

- Investment savings thanks to lower peak load requirement:
  - **Europe: avoided CAPEX of up to 16%***
  - **France : avoided CAPEX of ca. 3 bn €**
  - **UK : annual savings of up to £ 300m****
- **Up to 25% reduced operating and maintenance costs** thanks to optimized compression.
- Reduction of local transport bottlenecks.

Optimized gas production

- **Up to 80% avoided investment** in wells and surface facilities (depending on swing).
- **Prolonged lifespan of production fields** thanks to optimization of operations and maintenance (plateau vs. swing).
- Enhanced ultimate recovery: **avoided loss of reserves of ca. 10-15%** (depending on reservoir).

Storage is 5-7 times less expensive than the extraction of the corresponding reserve and construction of transmission facilities (source : Gazprom)

Source : * Pöyry 2012 / ** Waters Wye 2014

Insurance value: storage helps avoid supply risk exposure

A number of issues may trigger gas supply risk…

Weather

- Cold wave in the US: winter 2013/2014
- Cold snap in Europe in Feb 2012
- Prolonged winter end 2013 in Europe
- Rough sea causing Skikda (Algeria) liquefaction train shutdown in Jan. 2015

Technical failures

- Technical issue at Rough (UK) in March 2015 resulting in storage output reduction
- 6-month shutdown of Transitgas pipeline in 2010 due to a landslide in Switzerland.

Geopolitics

- Russia- Ukraine tensions; 2009 supply disruption
- Interruption of Greenstream (Libya-IT) flow following outbreak of the Arab Spring: Feb. 2011

Environment

- Gas production induced earthquakes in Groningen (NL)

Gas shortage may be costly…

AU$1.3bn: cost of 19-day gas shortage in Melbourne (1998)

Up to £10bn: cost estimate of a 6-week gas disruption to industry in UK*

£14/therm (ca 650 EUR/MWh): Value of Lost Load in UK

*Ilex Energy Consulting, 2006

Gas storage in Europe is facing uncertain future

- Seasonal spreads are the main indicator for storage appetite. These have been persistently low over the past years.

  If low spreads equal low perceived value of storage, does this equal low value of security of supply?

- So far long-term contracts have been safeguarding European storage operators against full market exposure but most of them will expire in 2017. What will happen next?

  Storage can exist and survive only if it has a business case.

Regulatory incentives are needed to re-establish storage value

Market value

- ✓ Flexibility for storage operators to pursue commercial innovation
- ✓ Possibility to provide customized products

System value

- ✓ Removal of transmission tariffs at storage-transmission points
- ✓ Firm capacity at storage-transmission points

Insurance value

- ✓ Specific security of supply arrangements that respect local market specificities

Thank you