

Session 4

Gas storage

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IEA Brazil Gas Workshop 2019

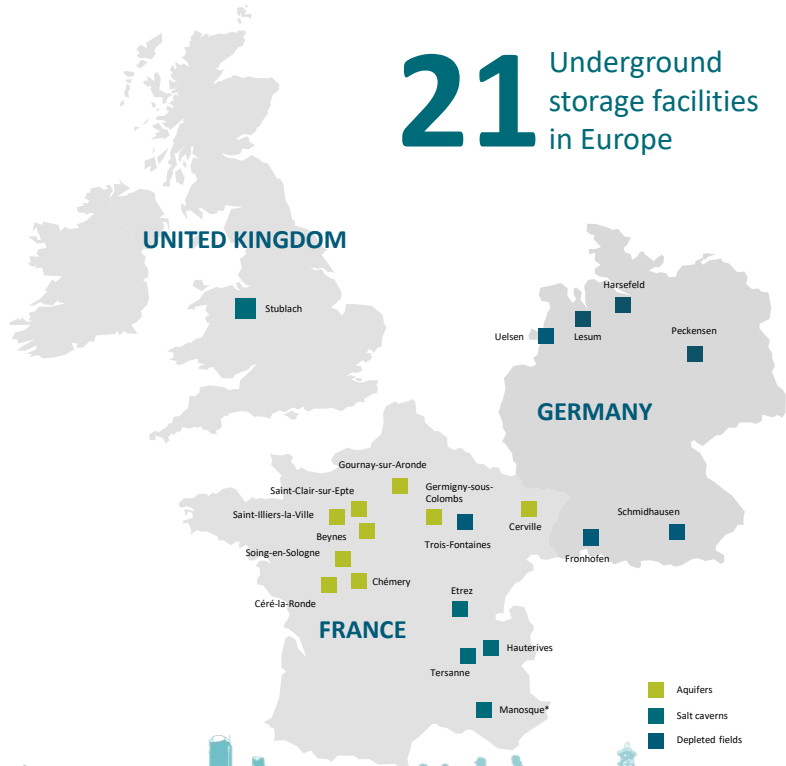
Towards modern transmission & distribution services in Brazil

Modernização dos serviços de transporte e distribuição no Brasil




Storengy, fully committed to the energy transition

21 Underground storage facilities in Europe





Underground gas storage


Geothermal solutions



Production & storage of low-carbon energy


1st
Europe's leading operator of natural gas storage facilities

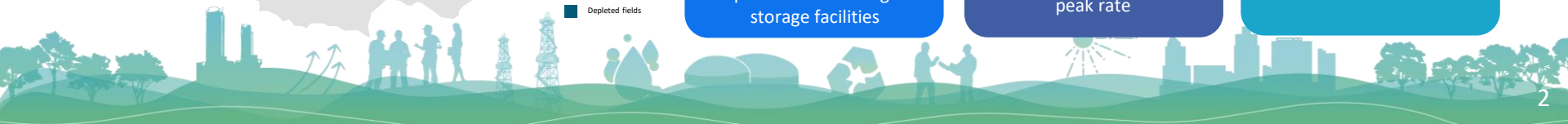

12.2 Bcm
Gas storage capacity


Employees
800
In France


4th
World's largest operator of natural gas storage facilities


300 Mcm/d
cumulated withdrawal peak rate

160
In Germany
45
In the United Kingdom



AGENDA

1

Evolved regulatory framework in France to unlock full potential of gas storage

2

Key principles of a regulatory framework for gas storage to recognize its contribution to the energy transition





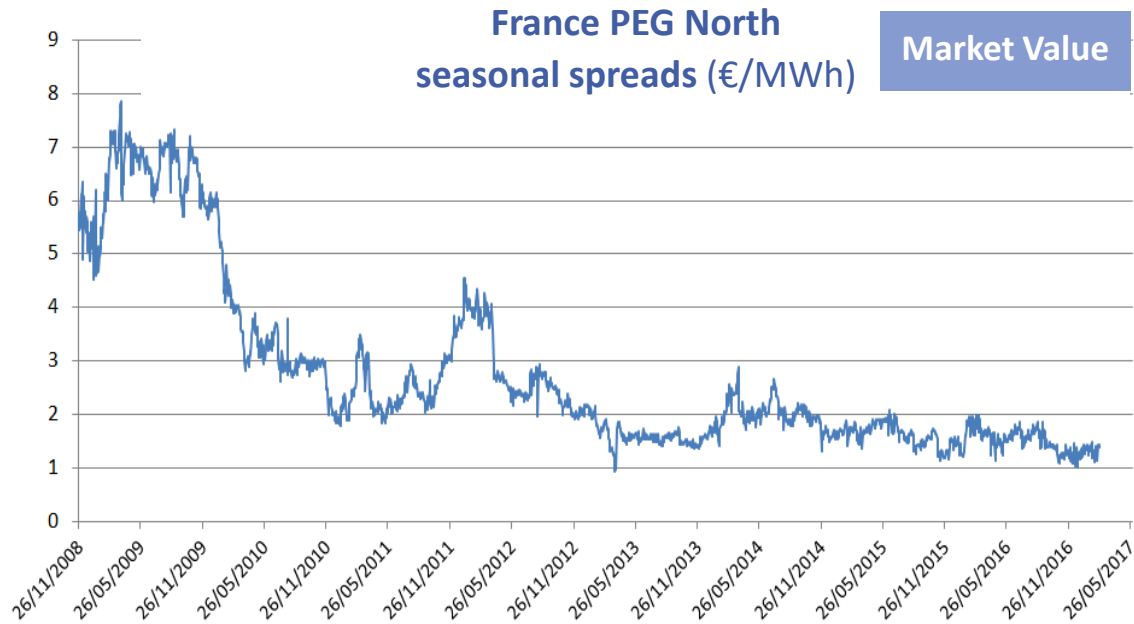
Evolved regulatory framework in France to unlock full potential of gas storage



For many years, the remuneration of storage value by markets has sharply declined

In the last ten years

- Decline in price spreads
- Eroding the market value of natural gas storage
- Weighing on the revenue streams of merchant storage operators

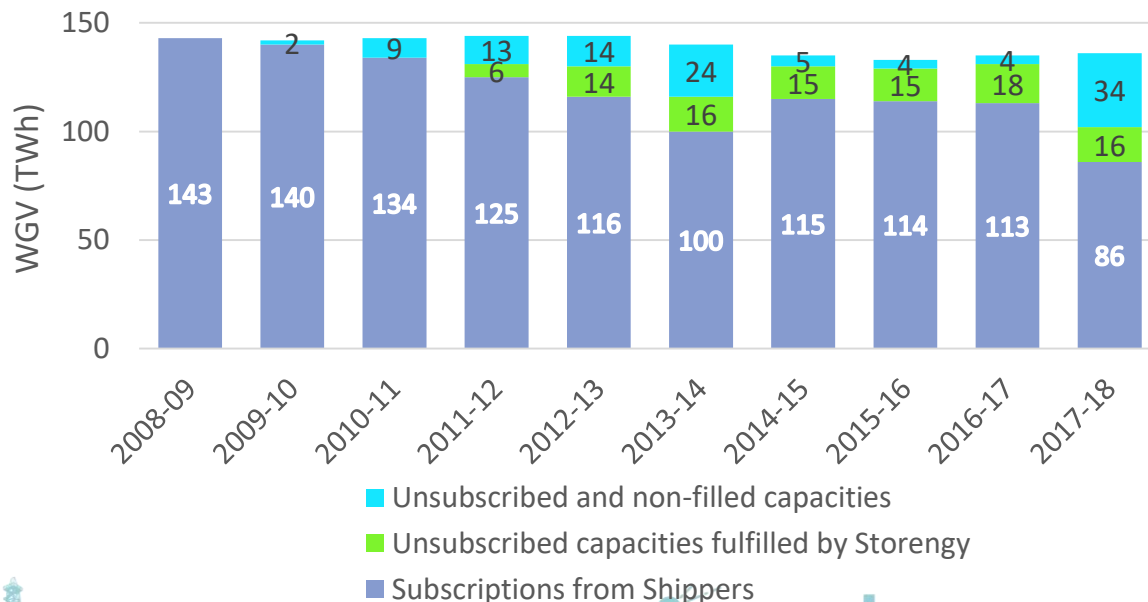


Previous regulation – Negotiated framework

Previous regulation

A confirmed under-filling of storage leading to a threat on security of supply

Storage subscriptions and filling level in France



Regulated TPA with market-based pricing

Evolving regulatory framework

Step 1:

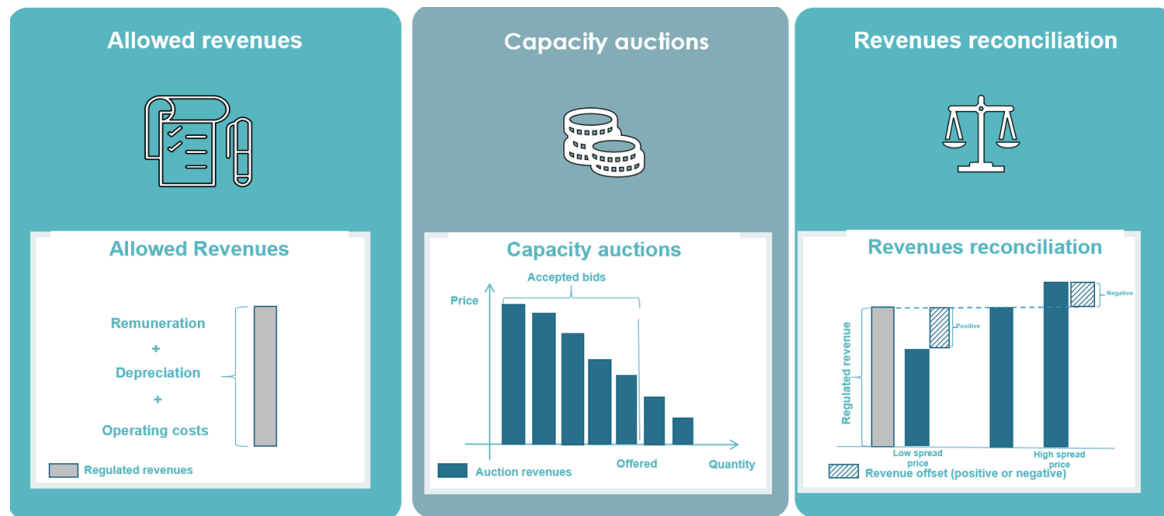
- Authorized revenues under the control of the regulator

Step 2:

- Storage operators sell auctions

Step 3:

- Auctions revenues offset to match the authorized revenue, through gas transmission tariffs



End of regulated tariff

2014
Italy

End of supplier's obligations

2018
France



2

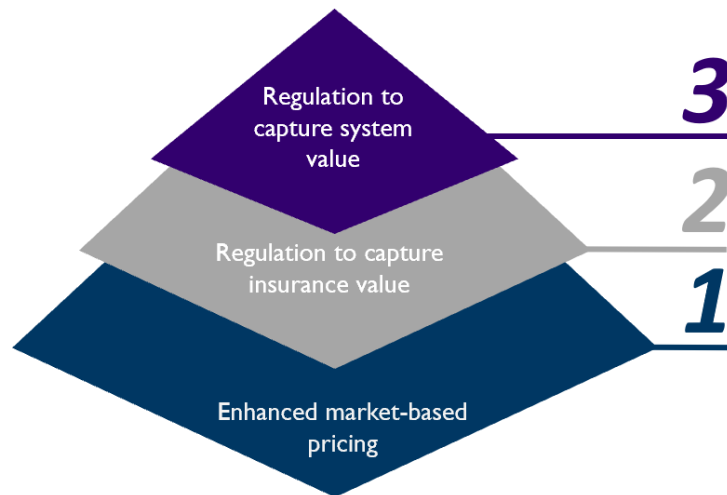
Key principles of a regulatory framework for gas storage to recognize its contribution to the energy transition



Measures for a sustainable gas storage market

Storage business model in an energy integrated system

- Enhanced market-based pricing should continue to be central to the gas storage business model.
- Regulatory measures should be deployed to internalise externalities which market-based pricing does not capture.



Social benefits:

- Additional measures could be considered to ensure that society continues to benefit from the insurance and system value of gas storage
- Consistent and “coupled regulation” to support efficient sector coupling
- If deemed necessary, facilitate cost recovery to ensure SSOs can maintain a socially optimum level of storage

Market enhancements:

- Enhanced market-based pricing to capture arbitrage benefits across different times frames and geographies
- Removal of market failures through development of new products and penalties

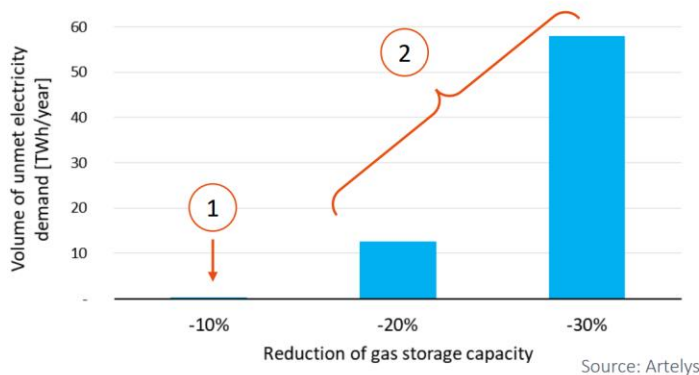


Value of the gas storage infrastructure for the electricity system

Reduction of flexibility (storage) in the gas system will negatively impact the electricity system

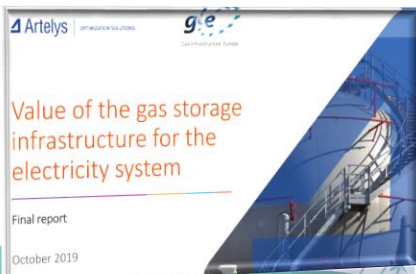
Where is the tipping point?

In the scenario we have considered, the tipping point between the two regimes appears between 10% and 20% reduction of gas storage capacity. The following figure presents the annual volumes of electricity demand that cannot be met in the sensitivity analyses:



1 The reduction of gas storage capacity prevents CCGTs and OCGTs to run during high electricity demand episodes in winter due to the lack of readily available gas. The production costs of alternative generation units are found to increase.

2 A further reduction of gas storage capacity would result in **electricity demand curtailment**. This signals a need for investments in electricity flexibility or generation technologies to allow the system to meet the demand.



Key take aways

Storage is a strategic asset that provides value to the gas and electricity systems

Market-based pricing are required to assess the market value of storage

As the market doesn't value the full benefit of storage, appropriate regulation is required



LET'S TALK ABOUT IT!

Thank you for your interest



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