

Liquidity & price evolution at European gas hubs

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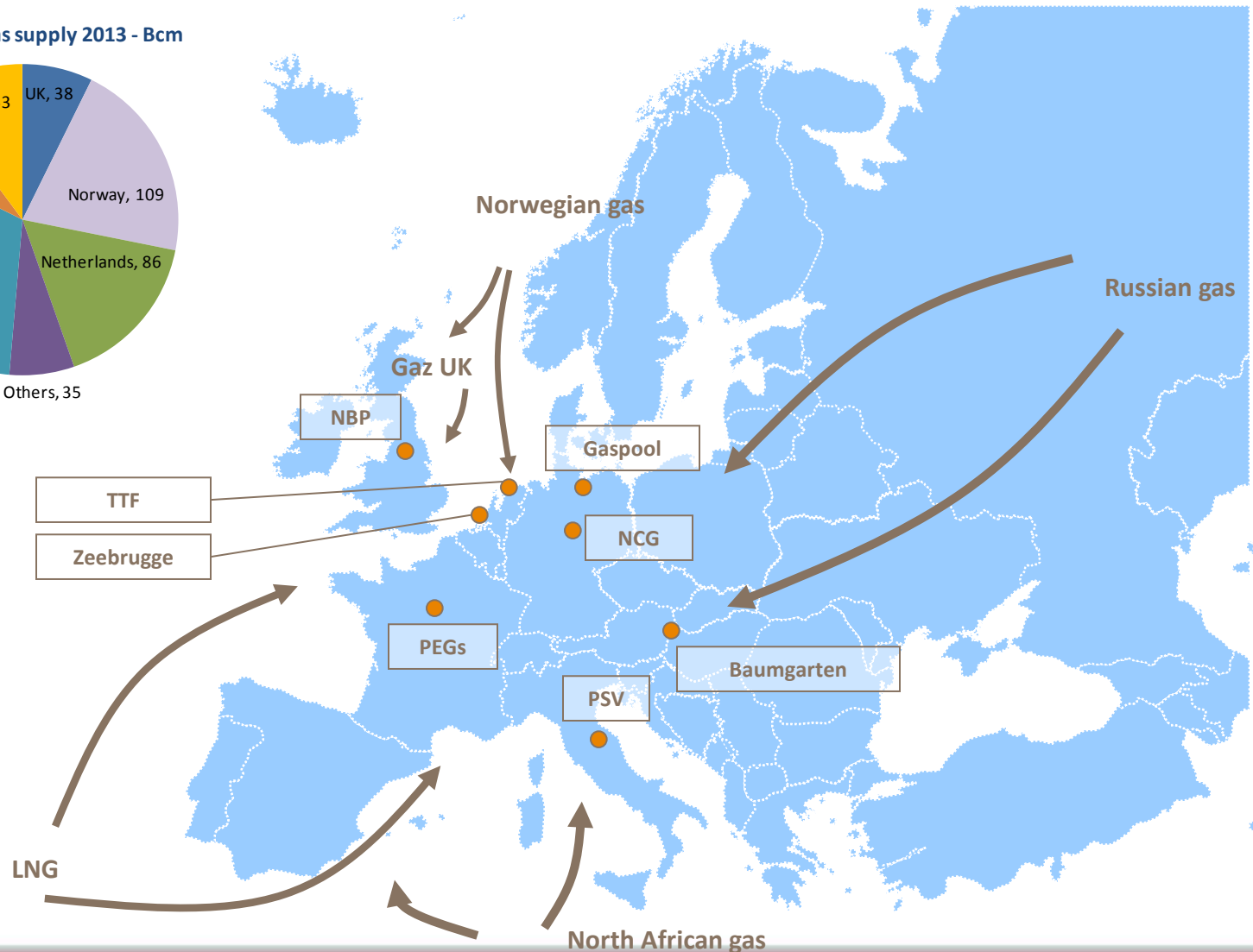
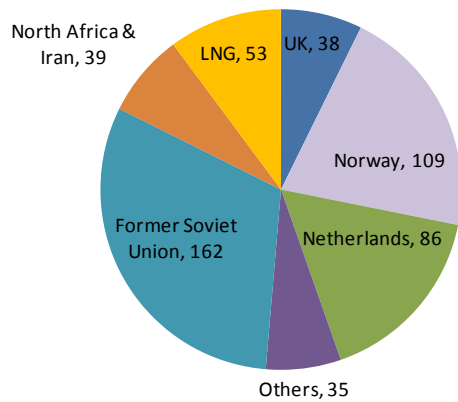
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1 Evolution of liquidity at European gas hubs

2 Liquidity versus price trends

Gas supply and main market places in Europe

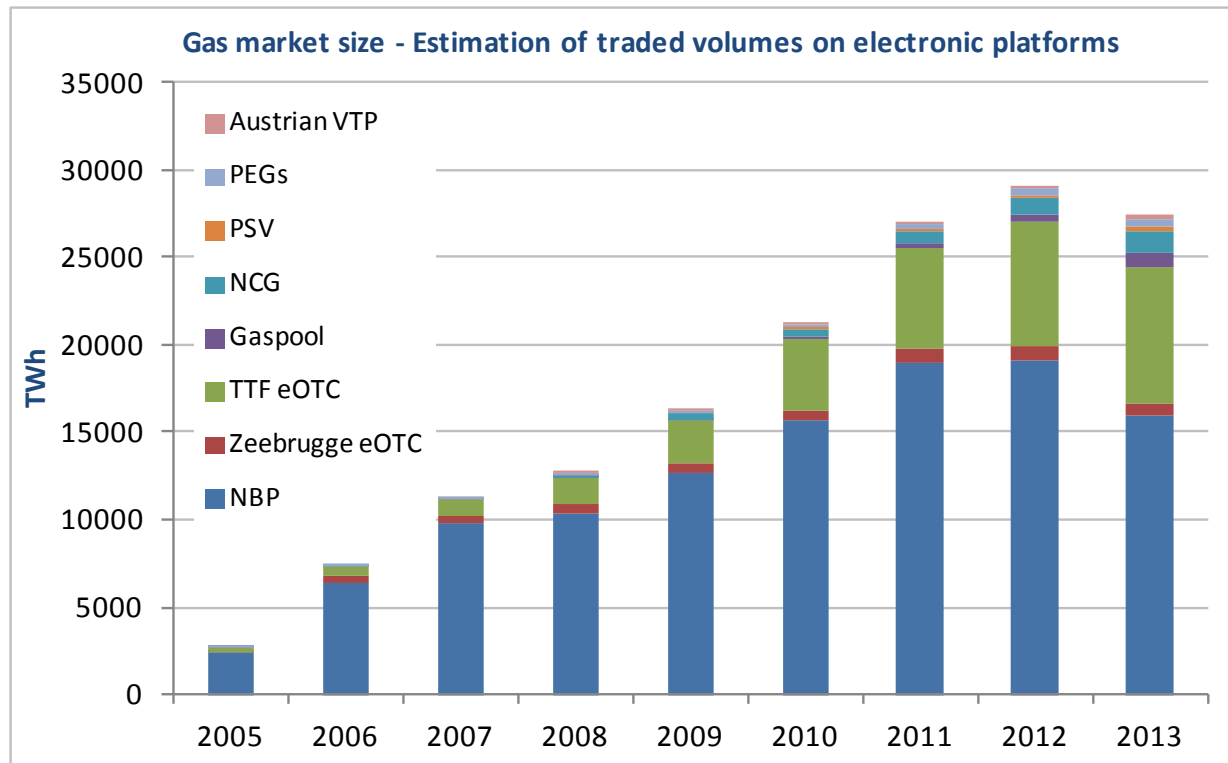
OECD Europe gas supply 2013 - Bcm



NBP (and US Henry Hub): structural liquidity!

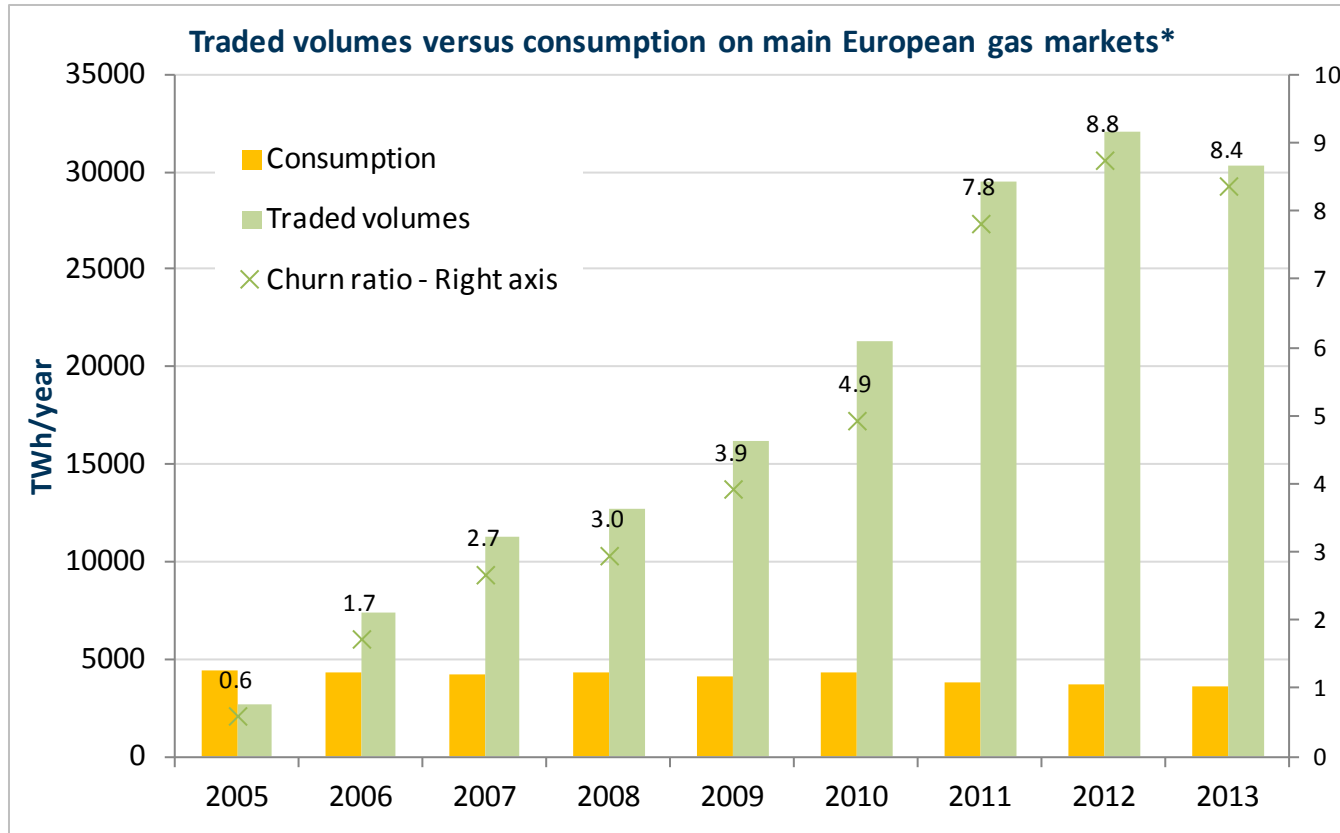
Continental Europe: more short term liquidity, fuelled recently by gas oversupply.

Rising traded volumes in European gas markets,...



- NBP remains the most liquid European market, but its traded volumes tend now to decrease.
- By contrast, traded volumes are increasing significantly in continental markets, particularly on the TTF.

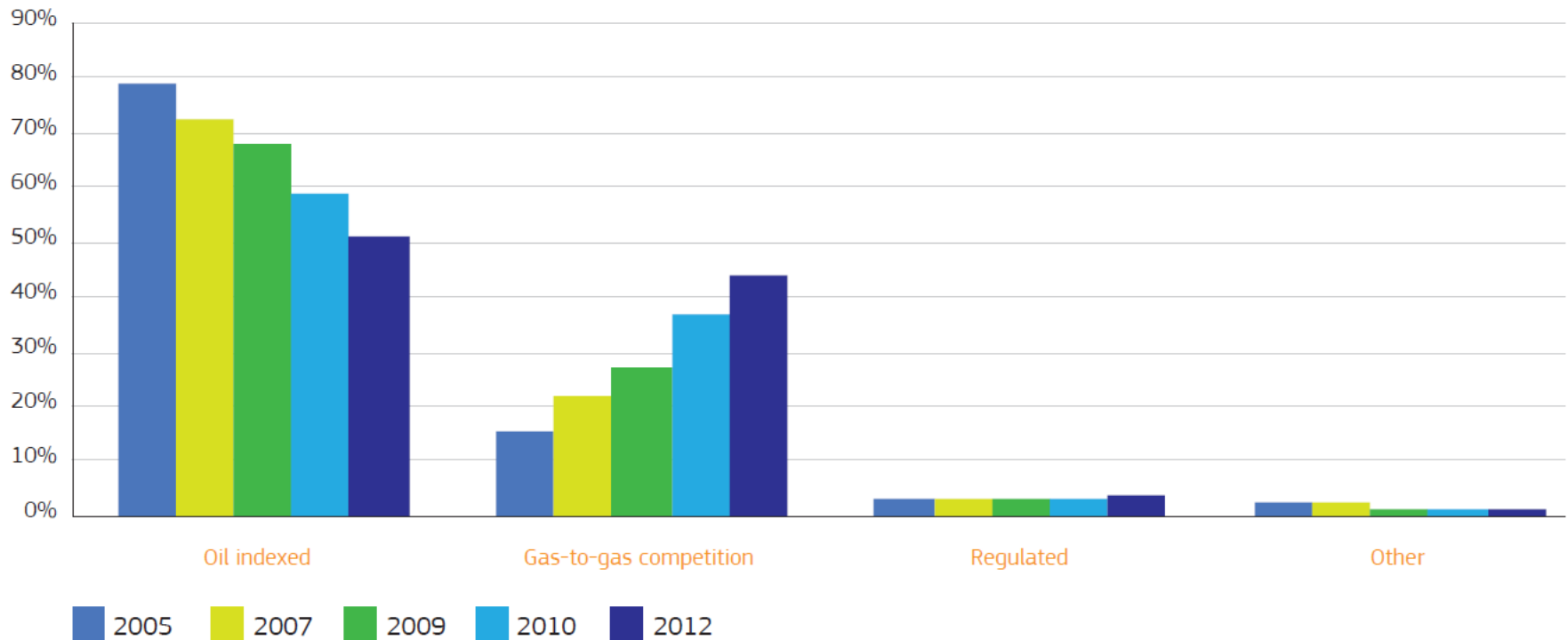
... at levels significantly above consumption levels



* UK, Netherlands, Belgium, Germany, France, Italy

Churn ratio = Traded volumes / Consumption

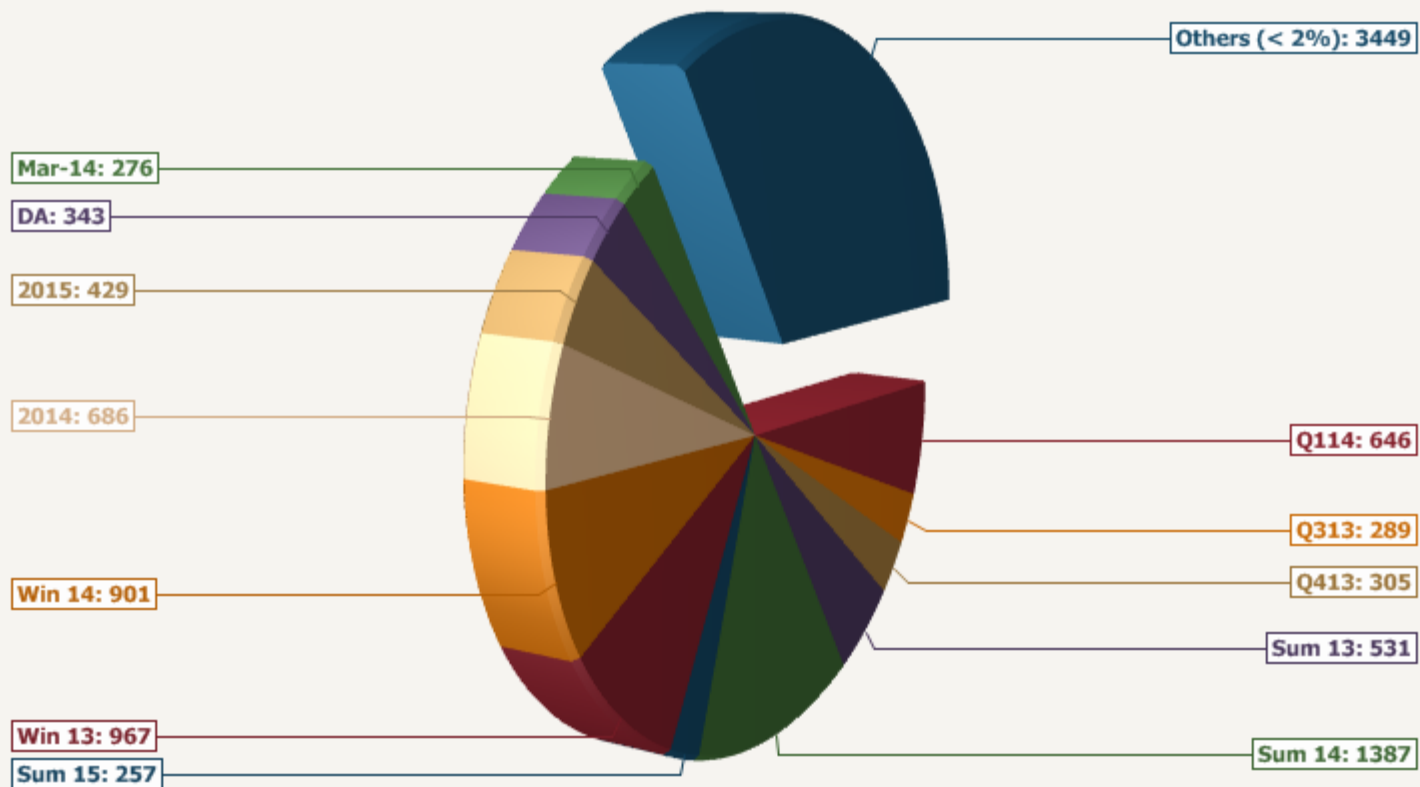
Wholesale gas price formation in Europe (% of consumption)



- The share of oil-indexation (upstream and downstream) is falling,...
- ... in favor of market pricing.

Traded volume distribution: liquidity is increasing on the curve as well

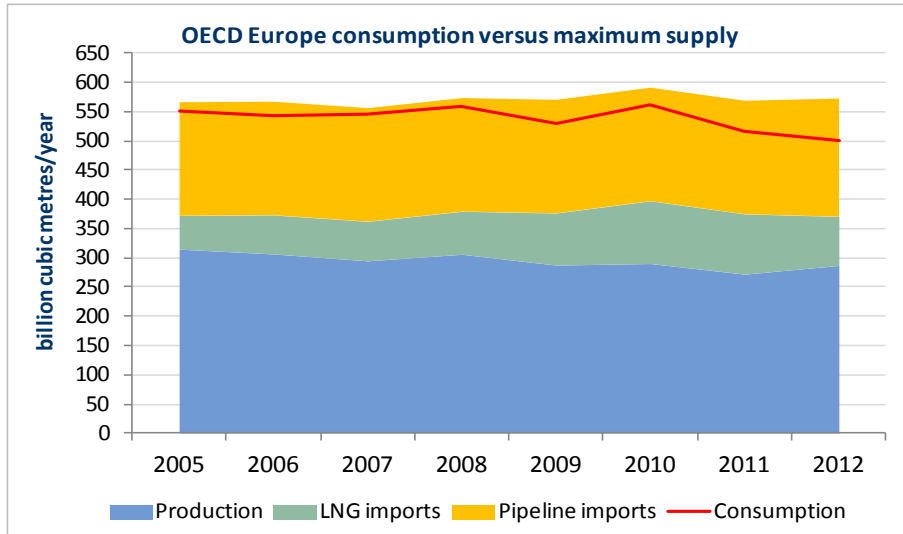
Volume Distribution for TTF Hi Cal 51.6 from 01/01/2013 to 20/03/2014 (Total: 10,467 Million M W H)



1 Evolution of liquidity at European gas hubs

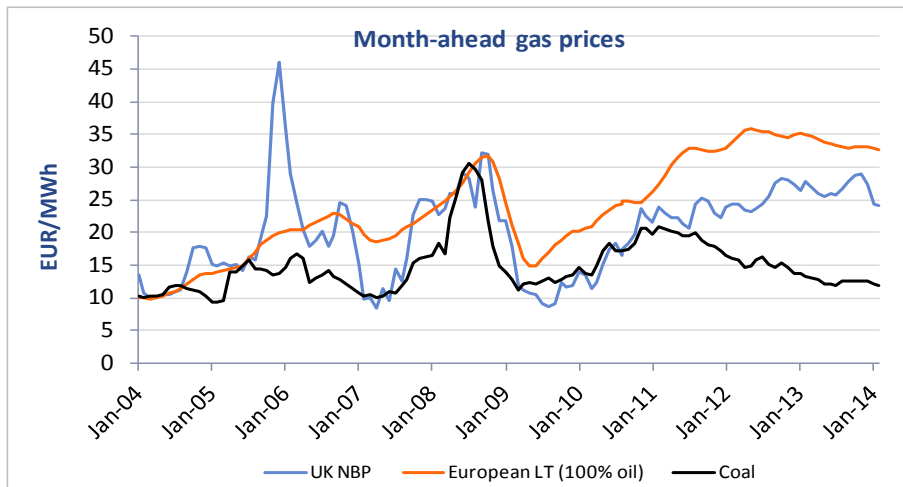
2 **Liquidity versus price trends**

The European gas bubble contributes to fuel liquidity



- Higher LNG supply and weak demand (economic slowdown from 2009, weak coal prices from 2011) lead to a European gas bubble, leaving most of mid-streamers long of gas:

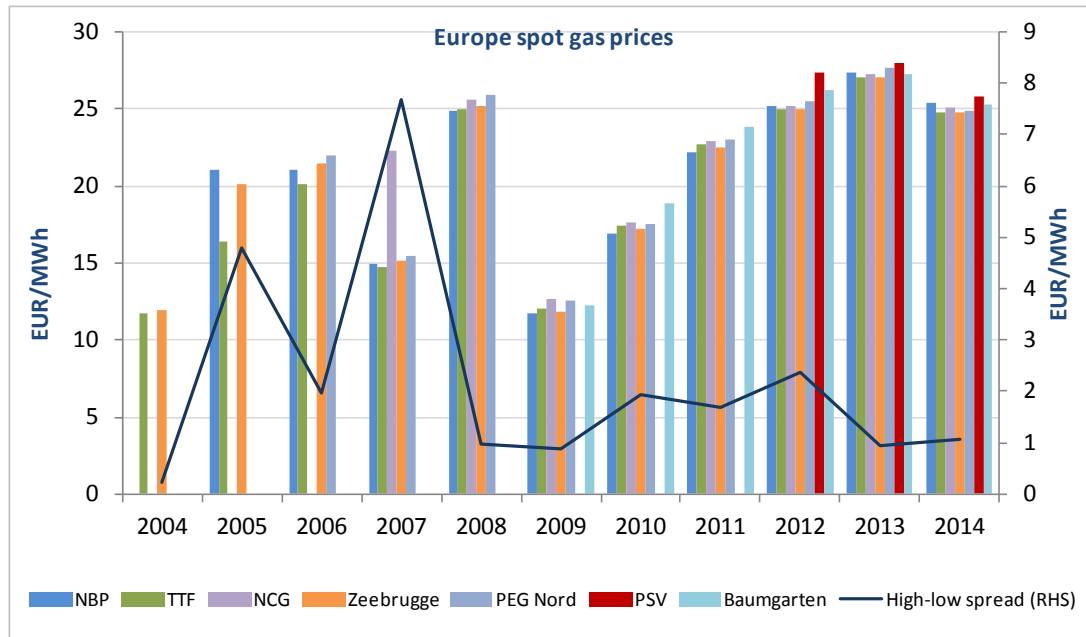
- Excess volumes were sold on market places, increasing (short-term) liquidity,... and pushing prices lower.
- Low market prices (versus long-term oil-indexed prices) lead to contract renegotiations... and higher share of market-based pricing, which tends to increase (structural, long-term) liquidity.



• Due to competition from low coal prices, gas consumption in the power generation sector dropped significantly:

- UK: -43% in 2012 and -8% in 2013
- Italy: -13% in 2012 and -17% in 2013
- Spain: -22% in 2012 and -28% in 2013

Liquidity and price differences



- Despite differences in traded volumes, prices in European gas markets are very close, thanks particularly to the transportation network which facilitates arbitrages.

2012 values - Bcm	Production	Imports				Consumption
		Russia	Norway	Netherlands	LNG	
Austria		4.7	1.3			9.0
Belgium		7.3	9.0	5.2	4.5	16.9
France		7.3	17.9	9.4	10.3	42.5
Germany	9.0	30.0	30.8	25.3		75.2
Italy	7.8	13.6	6.3	6.8	7.1	68.7
Netherlands	63.9	2.1	8.0			36.4
United Kingdom	41.0		26.8	7.3	13.7	78.3
TOTAL	121.7	65.0	100.1	54.0	35.6	327.1

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