

Q4 2016: TTF volatility commentary

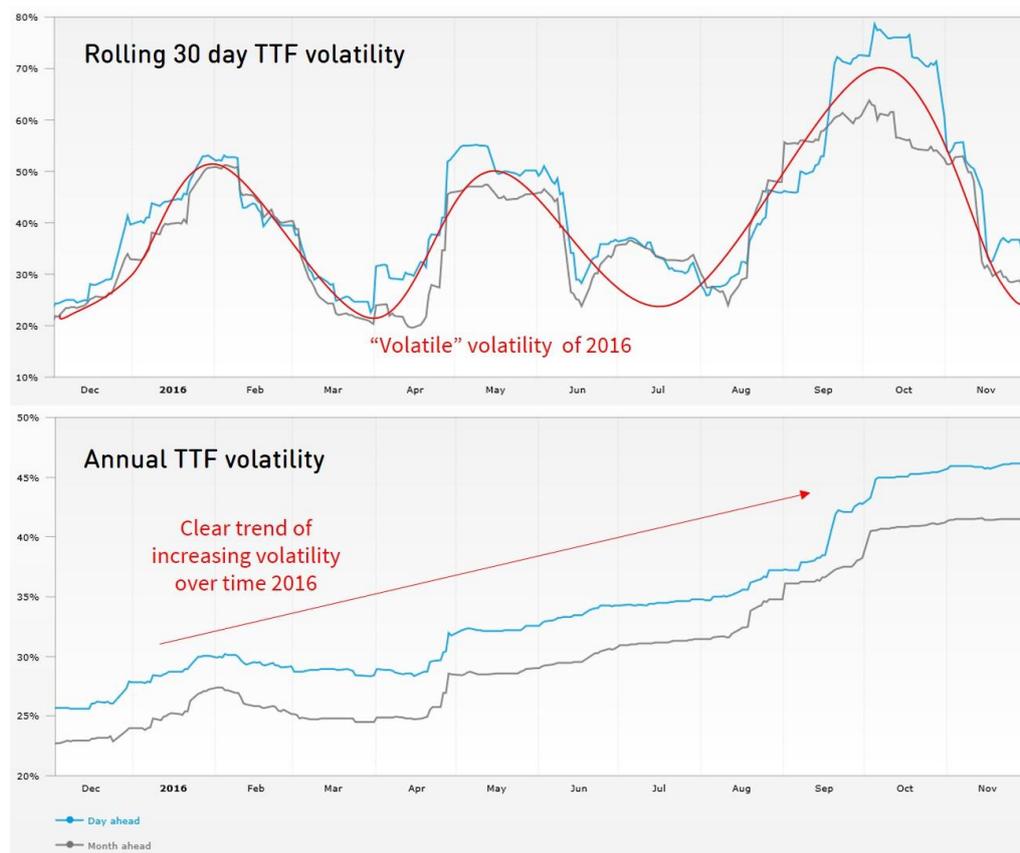
The start of the festive holiday season is an appropriate time to look back and review the evolution of volatility over the last twelve months and think about what may lie ahead for the current winter and beyond.

2016 volatility year in review

Previous quarterly updates have explored specific 'volatility events' where significant changes in volatility have occurred:

- Q1: volatility rises on the back of falling gas (and oil) prices, but then falls again as prices stabilise
- Q2: volatility increases as the market is caught out by a 'short squeeze'¹ in spring.
- Q3: after falling back again over the summer, TTF spot volatility rises to its highest level in 2016 on the back of a renewed gas price fall, with volatility 'exported' from the UK gas market on the back of uncertainty around the Rough storage facility outage.

Chart 1: Evolution of the Energystock volatility indices over the last 12 months



The shorter horizon rolling 30 day measure of TTF historic volatility has fallen away again into November. But this fall may be short lived. Volatility across the English Channel at the UK NBP

¹ Given big price declines and bearish market sentiment from Q1, gas portfolios were positioned for further price falls at the start of Q2. But as the market recovered in April, market players were forced to cover short positions (or 'squeezed').

has remained high through the start of winter on the back of continued absence of and future uncertainty around Rough capacity. Any shock in NBP prices this winter will likely feed through into TTF prices.

The observed ebb and flow of rolling 30 day volatility across 2016 is not a new phenomenon. Volatility, as a measure of uncertainty, is uncertain itself, particularly over a relatively short 30 day rolling calculation window. The more stable rolling annual volatility measure in Chart 1 shows clear evidence of spot volatility trending higher across the year.

Evolution of TTF volatility over the current winter

The Q3 volatility update presented 5 key factors likely to drive the evolution of TTF volatility over the current winter. The table below provides a status check on these issues:

Table 1: key factors driving volatility for current winter (2016-17)

Volatility factor	Assessment
Rough impact	<p>Following a further delay in returning Rough to operation, Centrica Storage Limited announced that withdrawals for the current winter will start from the 9th December. A full injection outage remains, which means that gas available for withdrawal this winter will be limited to current inventory, which is less than half the volume of a year ago.</p> <p>The partial return of Rough should somewhat reduce the risk of extreme prices in the UK, although the market remains tight. But beyond the coming winter, the long term future of Rough remains uncertain.</p>
Higher CCGT swing demand	<p>The sharp rise in thermal coal prices since Q1 2016 and ongoing French nuclear outages (current availability is lowest for 10 years) have significantly improved the load factors of gas fired power plants. This is supporting a recovery in North West European gas demand, and importantly gas flexibility requirement from the power sector.</p>
Groningen	<p>The Groningen field is now working within the new production cap (24 bcma) and Dutch government rules to reduce the seasonal production profile. This is resulting in a much lower and flatter production profile.</p> <p>Whilst the absolute loss of Groningen production can be replaced by other sources of supply (e.g. LNG imports or increased pipeline flows), the loss of seasonal production profile will need to be met by other sources of seasonal flexibility.</p> <p>To date, the loss of the Groningen flexibility has had little impact on forward market pricing of seasonal flexibility, with forward TTF seasonal spreads remaining close to historically low levels.</p>
LNG imports	<p>LNG imports into Europe continue to gradually increase in 2016, albeit at a slower pace than market consensus anticipated. Delays in commissioning of new liquefaction capacity and higher than expected seasonal demand in some Asian markets (e.g. China) have reduced the volume of surplus LNG that Europe needs to absorb in 2016.</p>

	The big ramp up in global LNG supply and consequently European imports is expected over the 2017-19 period when over 150 bcm of new liquefaction capacity is due to come online.
Weather/outages	As always, European hub price volatility will be sensitive to more prolonged periods of cold weather or major infrastructure outages. Globally, 2016 will likely be the hottest year on record. But it has been a cooler start to the European winter and forecasters are flagging a higher risk of a cold winter. Long term weather forecasting remains a tough business, although the track record of weather forecasters in 2016 has been more reliable than that of commodity price forecasters.

In summary the scorecard across these 5 key drivers is mixed. Conditions across this winter remain supportive of spot volatility, but uncertainty remains high.

Looking beyond the current winter

Looking beyond the current winter there are three key drivers acting to support an increase in volatility over the long term:

- Import dependence - Domestic production (across NL, UK and NO) is in decline, reducing access to production flexibility (e.g. from Groningen, Troll fields). This means the European gas market will become increasingly reliant on imports over the next decade.
- Ageing infrastructure - Since 2010, weak market price signals have choked off investment in flexible supply infrastructure. This has meant a sharp fall in the commissioning profile of new flexible assets and that owners are not investing in renewal or life extension capex to maintain the capacity of existing flexible assets. Rough is a high profile example of this dynamic in action at a broader level ~5% of European storage capacity has been closed over the last 6 years.
- Power sector - increased gas fired power margins relative to coal (clean spark spreads vs. clean dark spread) over the short to medium term and regulatory moves to phase out coal capacity over the long term, are acting to increase gas demand from the power sector. Regulatory support for renewables continues to deliver impressive volumes of new capacity (e.g. 141 GW installed wind capacity in Europe at the end of 2015 vs 12 GW in 2000). Intermittent renewable output is supported by swings in gas-fired plant output, which translate into swings in power sector gas demand and ultimately gas price volatility.

The market is currently seeing evidence of all of these factors over the coming winter. Whilst this will be good news for existing storage asset owners, capacity holders and traders (who can make more margin in a volatile market), the timing remains uncertain as to when volatility will recover towards levels required to support the investment in new flexible capacity.