

## Q4 2018: TTF volatility commentary

When our Q3 commentary was published, TTF month-ahead prices had just surged across the summer from 22 €/MWh towards 30 €/MWh (~10 \$/mmbtu). It's an understatement to say that such a sharp move took the market by surprise.

We wrote about three key drivers of this move higher in prices:

1. LNG flows: with strong Asian demand pulling flexible LNG cargoes away from Europe across the summer
2. Power switching: with a tripling of carbon prices across Q2-Q3 acting to drag up gas to coal plant switching levels in the power sector
3. Russian flows: with some near-term flow constraints in ramping up Russian supply in response to higher prices.

These three factors have been just as important in driving hub prices across Q4. However, they have been working in reverse.

TTF prices have fallen sharply since late Sep to reverse all of the summer gains (see chart of ICE front month futures prices below). In today's commentary we look at what has been behind this decline and the impact on TTF spot price volatility.



Source: [barcharts.com](http://barcharts.com)

### Prices down, volatility up

It is often the case in energy markets that higher prices coincide with higher volatility. That was true across in the first part of 2018 as the 'beast from the east' whether pattern drove both prices and volatility up in Mar & Apr. It was also true in Aug & Sep as a rapid price rise fed through into higher TTF spot volatility.

In Q4 however, it has been the sharp fall in TTF prices that has helped ensure volatility remains elevated. The evolution of volatility since Q2 18 can be seen in the chart below showing Energystock's rolling 30 day month-ahead and day-ahead historical volatility indices.



So how have the 3 key drivers we set out in our Q3 commentary been behaving in Q4?

### LNG flows

Strong Asian demand and higher spot LNG prices resulted in Asia pulling LNG volumes from Europe across the summer. The Asian spot LNG price spread over TTF opened up in Q2, supporting both cargo diversions and reloads from Europe. This contributed to the rise in TTF prices across the summer.

However in Q4, the Asia vs European spot price arbitrage closed out, with price spreads falling below 1 \$/mmbtu, well below the variable cost of moving gas from Europe to Asia. As a result, LNG imports into Europe have been steadily rising across Q4. For example, Europe is now a more attractive destination for US export cargoes given more attractive netback prices vs Asia.

Two factors have contributed to a close out in the Asian LNG arbitrage and the resulting rise in European LNG imports:

1. Asian demand: Asian buyers (particularly from China) have been caught short LNG over the last two winters and forced to chase rising spot prices to secure cargoes as the winter sets in. The opposite is happening this year, with Asian buyers appearing to be well contracted and not bidding for cargoes in the spot market. A relatively mild start to winter has also contributed.
2. Shipping costs: LNG spot charter rates exploded above 200,000 \$/day in Q4 2018 (a quadrupling in rates since 2017), although rates have now dropped back towards 150,000 \$/day. Longer voyages due to strong Asian demand in Q1-3 2018 have contributed to this squeeze. The impact of higher charter rates has been to reduce netback prices for sending cargoes to Asia (vs shorter voyages to Europe).

As LNG imports rise in Q4, they have been contributing to downward pressure on hub prices. But LNG imports can also support hub price volatility given they are relatively chunky in nature.

### **Power switching**

In late Sep 2018, coal prices had risen above 100 \$/t and carbon prices had shot up to 25 €/t. These price increases had eroded the competitiveness of coal fired power plants vs gas plants. This had in turn pulled up the switching boundaries from gas to coal plants (this effectively constitutes a increase in aggregate demand for gas or a shift to the right in the power sector gas demand curve).

As of early Dec, coal prices have decline 15% from these levels to around 85 \$/t. Carbon prices have declined 20% to around 20 €/t. These moves lower in price have been consistent with broader concerns about a slowdown in global growth (and therefore energy and commodity demand) that have emerged in Q4.

Just as coal and carbon price rises pulled up power sector switching levels in Q3, price declines in Q4 have reversed this effect. This has been an important factor contributing to falling TTF price levels.

### **Russian flows**

Russia has responded to higher hub price across Q4 2018 by auctioning incremental supply volumes. A total of around 1.1 bcm of gas was auctioned across Oct and Nov, before auctions were temporarily halted. But Gazprom has since indicated that it may auction further volumes through the winter.

In addition, it is likely Gazprom has been placing some uncontracted production volumes into Europe via its own marketing & trading capability. Incremental Russian supply has also contributed to downward pressure on TTF prices.

### **Factors to watch this winter**

So with TTF prices falling and spot price volatility so far this winter, what are the factors worth keeping an eye on:

1. Economic growth data: any further signs of a global or European growth slowdown will likely impact expectations on energy & commodity demand into 2019.
2. Storage levels: strong LNG import volumes and relatively mild weather have left Europe with record inventory levels in both gas storage and LNG tank storage facilities – how these are discharged across the winter will be important.
3. Fuel & carbon markets: switching levels remain key and movements in hub prices are set to retain a strong linkage to coal and carbon prices.
4. LNG flows: The pattern of LNG flows to Europe (vs Asia) across the winter will once again be important.
5. Weather & outages: The big unknowns across any winter are whether a market stress event may be triggered by a prolonged cold weather event and major supply outages (often correlated).

We'll return in 2019 to review how these factors play out.