

TTF – temporary blip or permanent phenomenon?

Can TTF become the dominant pricing reference for gas in mainland Europe?

David Yamoah, Vice-president Analysis at Essent Trading, shares his insight

The Netherlands plays a pivotal role in the transit of gas in north-western Europe, and only half of the 95 billion m³/year flowing into the Netherlands is consumed domestically. It exports gas to the UK, Belgium, Italy and Germany and imports gas from Norway and Russia. Liberalisation of the Dutch gas market was completed in July 2004. Gasunie, the former monopoly, unbundled its transportation activities to form Gas Transport Services (GTS), and its marketing and sales activities to form GasTerra. GTS is 100% state-owned and GasTerra is 50% owned by the state, with ExxonMobil and Shell each having a 25% stake. Over 70% of the gas consumed in the Netherlands is sourced from GasTerra. The Title Transfer Facility (TTF) was introduced in November 2002 as the virtual pricing hub for gas, which is fed into the GTS grid via one of the system entry points. Gas on the TTF sits alongside gas from GasTerra and can be delivered at the plant gate. The TTF, together with the NBP and Zeebrugge, are the three most established gas hubs in Europe. The NBP accounts for around half of the combined liquidity on all three hubs. Due to the gradual liberalisation of the German market and the strategic location of the Netherlands, the TTF hub has the opportunity to overtake Zeebrugge to become the main liquidly traded price reference in mainland Europe.

Development of liquidity to date

The TTF was initially used by parties that have physical positions to hedge and to cover physical shortfalls. The level of market-making has risen due to the increase in involvement of players without physical requirements or sourcing in the Netherlands market. This is illustrated by the increase in churn ratio¹ from approximately 1.5 to 4.2 (see figure 1). A growing number of these players are acquiring physical positions on pipelines and storage in and around the Netherlands, and are monetising these positions on the TTF. Some larger upstream players are also beginning to sell their gas at the TTF as it provides them with the opportunity to sell gas to the domestic markets.

Gas hubs in Germany have recently been introduced, but have been slow to develop due to limited market liberalisation; on the whole, liquidity has failed to develop. The BEB and EGT are the most developed German hubs but are still very illiquid and derive their price characteristic from the TTF. The TTF has become the main viably traded price reference due to its proximity. It offers

good liquidity and transparent prices that allow parties to hedge and optimise their positions. The TTF is also used as the relevant market price index in locations such as Austria, the Czech Republic and Italy. This has led to a dramatic increase in the average daily traded volume from approximately three million m³/day at the beginning of 2003 to currently over 80 million m³/day. Active members have also increased from approximately 10 to 42 daily.

Development of traded products

Almost all trades conducted so far have been physical trades. Although the majority of the trades are done over the counter, the Endex (www.Endex.nl) and APX exchanges (www.apxgroup.com) have started trading standardised contracts. The day-ahead product is the most liquidly traded product. Approximately 15% of traded volumes are forward trades, this compares with 20% on the NBP and 9% on Zeebrugge. The TTF is mirroring the stages of development of the NBP and Henry Hub, with trading initially centred around the prompt followed by the growth of the forward curve liquidity. As the sophistication and risk management requirements of market participants increases, standardised futures markets might develop similar to the Henry Hub's markets.

Though Endex has launched a standardised TTF futures contract, its interest has been limited due to the lack of appetite from market participants.

An increasing number of banks with a more sophisticated approach to risk management are taking physical positions in assets, in and around the Netherlands. Their involvement might see an increase in the use of derivative instruments offered on the TTF. However, the trade of derivatives products even on the NBP has been very limited and it remains to be seen whether the greater involvement of the financial institutions will increase the sophistication of the products traded.

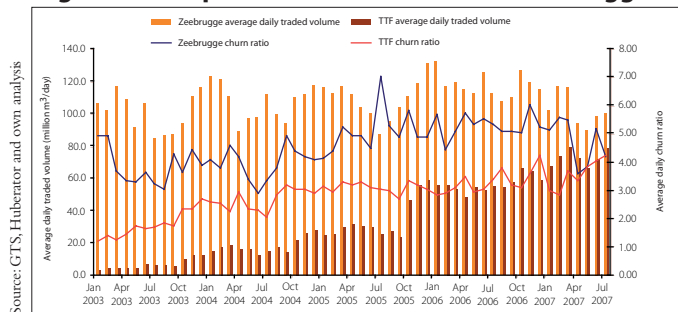
Price setting/determinants on the TTF

The TTF is driven mainly by the following:

- **Gas supply/demand fundamentals** – The TTF is linked physically to both Belgium and the UK (via the Balgzand to Bacton BBL pipeline). Due to BBL (which started its one-way deliveries in late 2006), gas now flows directly from TTF

¹ The number of times a unit of gas is resold before delivery.

Figure 1: Comparison between TTF and Zeebrugge



Source: GTS, Hubertor and own analysis

towards the NBP, which in turn feeds back to influence the TTF price. As a result, the correlation between the TTF and NBP for the month ahead contract has increased from about 0.85 to 0.99 since the commissioning of the BBL at the end of 2006.

- **Gas indexed to oil products** – The majority of the gas flowing around the Netherlands on long- and medium-term contracts is indexed to oil and oil products. The TTF can be arbitrated against these prices; this introduces a linkage to oil prices. With the commissioning of the BBL, the influence of oil has all but disappeared.

Factors driving even greater liquidity in the future

We expect the liquidity on the TTF to increase significantly over the coming years for the following reasons:

- GasTerra is planning to move away from offering its customers prices linked to oil products and offer gas at the TTF instead. They made a material volume available on the TTF in 2006, and these volumes are expected to increase over the coming years.
- As liberalisation slowly takes hold, growing interest in the German market and markets further east and to the south will increase the use of the TTF for both short- and long-term indexations.
- As the BBL can presently only flow from the TTF to NBP, it will provide an incentive for forward contracts to be sent to TTF before NBP in order to preserve its optionality value as it approaches delivery (that is, the gas can stay at TTF if the price is right, or later move down BBL if it turns out to be worth more in the UK, but it cannot go directly from NBP to TTF).
- Commissioning of the North Stream gas pipeline will flow more gas from Russia via Germany into north-west Europe. Some of this gas will transit through the Netherlands to the main demand centre in the UK. The TTF would offer shippers an alternative to arbitrage.
- The commissioning of any one of the four proposed LNG terminals² into the Netherlands will provide gas to the Netherlands which could be transited in any direction in Europe –

² ConocoPhillips-Essent project due in 2010; Dutch Gate Terminal due in 2010; LionGas LNG due in 2010; and TAQA Energy commissioning date is still unknown.

³ Source: Statoil.

as long as the price is right. This will link the TTF to Henry Hub prices and enable parties to exercise the option on spot cargos.

- There are proposals to allow the BBL interconnector to flow multidirectionally to allow gas to flow into the continent – if the price is right. This will enable parties in the UK to access the TTF directly and not via Zeebrugge.
- The Gas Network Expansion (GNE) project, part of the Troll expansion, is considering building a pipeline to land either at Zeebrugge or Balgzand in the Netherlands in 2012.³ This could bring additional gas to the Netherlands.
- There is additional entry and exit capacity planned for the Netherlands and thus more gas will access the TTF.

The TTF could be used to capture optionality between fundamentally driven gas coming from the UK; internationally priced LNG; substantial domestic production landing in the Netherlands; and gas transiting through the Netherlands.

GTS is already actively encouraging this process by releasing more entry/exit capacity to allow third parties access to the Netherlands and TTF.

Is TTF evolving into the main pricing reference for continental Europe?

With its interconnections to the UK, Norway, France, the Netherlands and Germany, as well as access to LNG, Zeebrugge has historically been the dominant pricing reference in continental Europe. However, the balance of power has been slowly shifting towards the TTF. TTF daily traded volumes increased by 80% between 2005 and 2006 and, while August 2007 marked its highest liquidity yet with 80.3million m³/day traded on average, volumes on the Zeebrugge have not increased over the past few years and actually decreased during last year. The churn ratio on the TTF is currently marginally higher than on Zeebrugge and rising, suggesting that more and more players are viewing the TTF as the most viable pricing reference to cover positions on mainland Europe.

The question remains as to whether the TTF can become, and remain, the dominant trading hub in Europe. The TTF has benefited from the lack of an available reference in Germany. The German market is the largest on mainland Europe and is expected to grow significantly over the next decade as new gas capacity is commissioned and the pace of liberalisation increases. The lack of a suitable gas reference in Germany is key to the TTF remaining the dominant pricing reference on mainland Europe. There are currently several initiatives under way to combine the various German trading hubs under a single platform. If any of these initiatives are successful, the growth and future dominance of the TTF will be limited.

Contact:

David Yamoah, Vice-president Analysis
 T: +31 646 741 852
 E: David.Yamoah@essent.nl
 W: www.essenttrading.com