

# The rising power of gas traders

*Securing Europe's future gas supplies will depend increasingly on a combination of physical hubs and trading skills as gas imports rise and Europe's indigenous gas reserves dwindle. Crispian McCredie and Ruud Weijermars\*, Alboran Energy Strategy Consultants, explain how trading works and what action is needed to further improve liquidity in a nascent pan-European gas trading system.*

A major difference between the world's two leading liberalised gas markets is that US gas imports are less than 5% of total consumption; Europe's imports are over 45%. The decline in Europe's indigenous gas production continues. The International Energy Agency's (IEA) data shows that of the 16 European OECD members, only Norway, the Netherlands and Denmark can cover domestic demand. All other European OECD members had become net-importers of natural gas by 2009.<sup>1</sup> Norway and the Netherlands export gas to the rest of Europe, but 33% of imported gas comes into OECD Europe by pipeline from Russia, Algeria, Libya and Azerbaijan, and a further 12% via LNG imports from Algeria, Qatar, Nigeria, Trinidad and Egypt.

As of 2011, international gas trading from outside the OECD accounts for nearly half of Europe's gas supply. More gas imports will be delivered to northern Europe by the Nord Stream pipelines. The first pipeline with a transmission capacity of approximately 27bn cm<sup>3</sup>/y is due for completion this year. The second line is due to be completed in 2012. Further into the future, either the South Stream or Nabucco pipelines will supply gas from Asia.

International gas trading has become a critical strategic component in Europe's energy security. The trader's role is to guarantee the future matching of gas supply and demand. Gas traders have not only a powerful position in the physical gas market but also in the gas derivatives market. Their trades may affect wholesale gas prices when specu-

lative positions start to dominate the natural requirement to balance physical gas supply and demand.

## Efforts to boost trading liquidity

The European Union's (EU) Third Energy Directive outlines a requirement for competitive gas prices and now Europe has its own federal regulatory agency, the Agency for the Cooperation of Energy Regulators (ACER), legally empowered as of March 2011. ACER, headquartered in Ljubljana, Slovenia, must transform Europe's patchy regulatory regime with the objective of increasing liquidity in the European gas market.

In the US gas market, the Federal Energy Regulatory Commission (FERC) has been active for decades, improving liquidity and price transparency. To achieve better liquidity in Europe's gas markets, a number of issues need to be addressed. Primarily, the regional transmission operators (TSOs) must agree the harmonisation of contracts across regional markets to permit one common trading platform with a standardisation of balancing fees and tariffs for transportation. Secondly, an auction process needs to be established to allow primary base load supply allocation with long-term contracts for up to a period of 10 years. Sufficient spare capacity on the regional hubs must allow for spot gas physical contracts to meet demand peaks, which will require access to sufficient gas storage and fungibility between LNG and pipeline hubs.

The European Federation of Energy Traders is a group of more than 90 energy trading companies from 23

European countries, dedicated to stimulating and promoting energy trading throughout Europe. It has been proactive in promoting pan-European energy trading and regularly provides the regional TSOs with practical framework guidelines.<sup>2</sup> The ultimate aim is to integrate the regional gas networks into a single European network, with true liquidity for supply/demand driven allocation of physical gas volumes. However, achieving greater liquidity in gas transmission and trading will not necessarily result in competitive pricing if past contract practices block progress.

## US vs Europe pricing

Competitive pricing can only be achieved if gas transmission systems and agreements across borders and hubs are harmonised. The US gas market is the role model, where the Henry Hub provides a national reference price point for all gas trades. Two gas commodity trading systems co-exist – the New York Mercantile Exchange (NYMEX) for gas futures and the Intercontinental Exchange (ICE) in Atlanta for gas swaps. Derivatives are indexed with the Henry Hub spot gas price. Spot gas indexing is also used in bilateral contracts for long-term physical gas deliveries. Consequently, all US gas contracts, both physical and derivative, are price-indexed to the gas price for physical gas deliveries at a single reference point, the Henry Hub. Physical gas deliveries at US gas hubs other than Henry simply have an upward or downward price differential relative to the Henry Hub reference price (see **Figure 1**).

Regional gas hubs have also emerged throughout Europe, after the UK set the example in the 1990s (see **Figure 2**). The physical metrics of the US and EU gas markets are broadly comparable, with similar consumption volumes, converging storage and LNG landing capacities. However, Europe still lacks a single reference price for its physical gas and deals in a range of locally-indexed derivative contracts. Furthermore, gas contracts in continental Europe are oil-indexed, not spot gas-indexed.

## US gas traders' role

In the old model, US gas traders only bought gas from producers and sold physical gas to consumers. In today's liberalised market, US gas market traders provide liquidity in the value chain by price-making in physical, as well as the futures and swap markets. US gas traders are a highly diverse group and can be divided into three main groups:

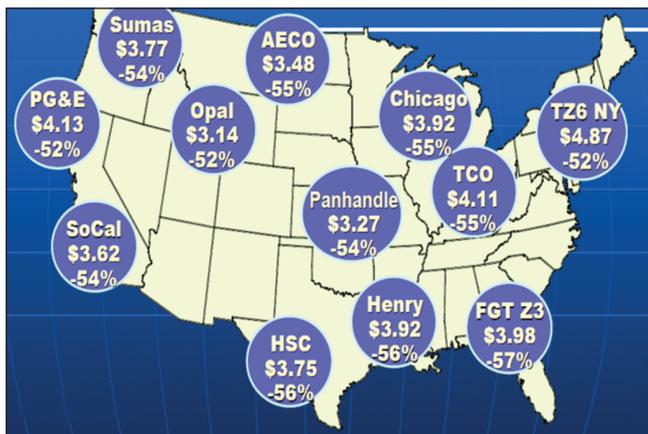


Figure 1: Major US gas hub prices – 2009 averages (\$/1,000 cf, % drop relative to 2008) Source: ICE data

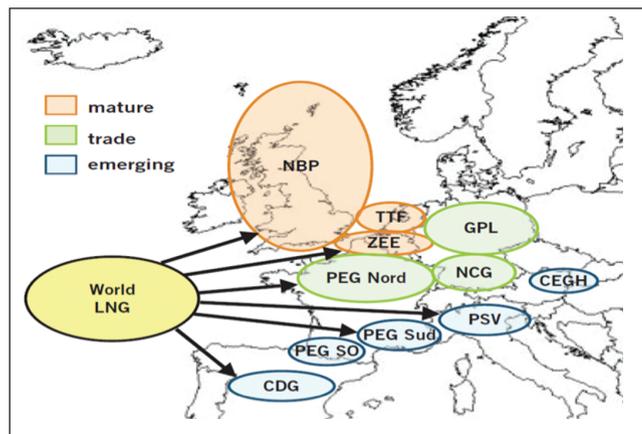


Figure 2: Major EU gas hubs – 2009 Source: Gas Hub report

- Gas producers that sell physical gas over the hubs and who hedge against low prices by using NYMEX gas futures and ICE gas swaps.
- Gas utilities and other consumers that buy gas priced at physical network exits and hedge against high prices by using NYMEX and ICE derivatives, often as counterparties to the producers.
- Speculators, including hedge funds, that trade in the gas market's financial derivatives purely for financial return without any direct interest in owning physical gas volumes, the so-called 'non-commercial players' in the US Commodity Futures Trading Commission's jargon.

The traders are supported by banks acting as clearing houses and brokers that offer aggregated gas trading services for gas buyers. A minor role is played by transmission system operators, who must buy or sell spot gas to balance their physical gas transmission system. Any gain or loss in spot gas trades is passed on to users in their transmission system tariffs.

A cursory review of the major physical gas marketers in the US shows major gas producers acting as sellers, sometimes as aggregators for smaller producers, with major financial institutions (Louis Dreyfus, JP Morgan, Citigroup, BOA/Merrill Lynch) acting as clearing houses. The average daily volume marketed and reported to Energy Intelligence is about 125bn cf/d – double the 62.5bn cf/d US gas consumption, as both buyers via clearing houses acting for the third-party buyers and sellers (marketing subsidiaries of the gas producers) report their traded physical volumes. In the US, the majority of gas derivatives at NYMEX and ICE are traded as pure financial transactions – churn rates are close to 100, meaning that only one out of 100 trades is linked to a physical delivery.

### UK gas trading

In the UK, the counterpart of NYMEX gas futures and ICE gas swaps are traded on the APX-ENDEX futures market with swaps at ICE UK. It uses physical reference prices from the National Balancing Point (NBP), a virtual hub with a UK price average, for gas deliveries under a mix of long and short-term contracts, which are, in turn, indexed by NBP spot prices. The churn rate of APX-ENDEX (NBP) trades is below 20, one fifth of the US liquidity indicator. The UK gas trading market is dominated by producer traders, banks acting as clearing houses and hedge funds. The same US clearing house banks operate in the UK, complemented with EU banks (Credit Suisse, Deutsche, BarCap). European producer traders include Gazprom. Hedge funds (Centaur, Citadel) are joined by a range of other proprietary traders (EDF trading, Gunvor, Hetco, Koch, Mercuria, Noble, Vitol).

### Continental Europe gas trading

From a liquidity point of view, gas prices in continental Europe are set mostly by gas producers who allocate oil-indexed gas deliveries to 'preferred' traders, commonly via their own gas marketing divisions. For example, Dutch gas trader GasTerra is owned by the same parties that own Dutch gas producer NAM (Shell, ExxonMobil, state). In other EU countries, the relationship between producer trader and producer parent is obvious, as they trade under similar names – BG Group, BP, ConocoPhillips, Eni, ExxonMobil, Gazprom, Shell, Statoil and Total. Speculative traders are either Swiss-based (Alpiq, EGL, Mercuria, Vitol, Gunvor) or subsidiaries of US conglomerates (Hetco belongs to Hess Corporation; Koch Energy to Koch Group).

Speculative gas traders provide an important market driver for both volume and liquidity. They take positions as counterparts to the physical gas traders, who otherwise might find price hedging options limited due to lack of market trade liquidity. Continental European hubs' spot markets still have relatively poor liquidity due to relatively few market participants. In terms of churn rates, the 2009 average was 6.6 for TTF, 3.7 for Zeebrugge and 1.1 for NCG. At TTF, the volume of speculative trades is about 40% of the total.

The most aggressive European traders are gas utilities with little gas production but increasing storage capacity, who combine physical gas stock with derivative price hedging and price speculation. It is these organisations that can lead the way in Europe to negotiate long-term contracts for base-load gas deliveries from gas producers, and help develop spot gas price indexation to decouple gas prices from an oil-based index. By oil-decoupling, utilities will increase their ability to reduce gas prices when the spot markets provide the liquidity to do so.

European spot gas prices are raised by the high price of gas delivered to the continental gas network under long-term contracts, which are at present oil-indexed on a six-month rolling oil price average.<sup>3</sup> These physical gas prices cannot immediately respond to price volatility in spot gas, but may result in take-or-pay (TOP) arbitrage at preset intervals when spot gas provides a cheaper alternative to the oil-index gas price.

### A word of caution

Much of the gas derivative trade in the US is driven by spreads on the price differential between winter and summer gas. This is most dramatically illustrated

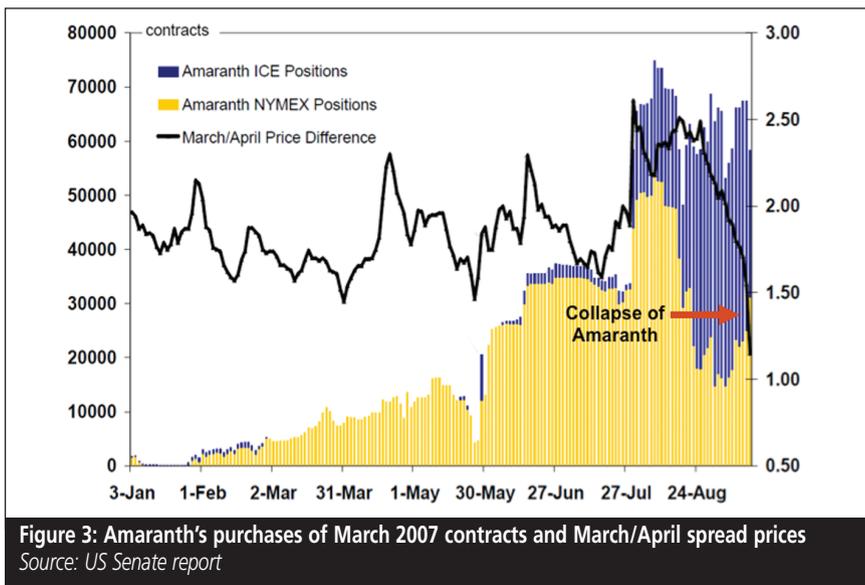


Figure 3: Amaranth's purchases of March 2007 contracts and March/April spread prices  
Source: US Senate report

by the 2006 demise of Amaranth, the then largest US gas trader, which lost \$6.6bn by being on the wrong side of the market. Figure 3 shows the two final sets of spreads that cost Amaranth the house and the chief trader his job. Centaur Energy, the counter party, made over a billion dollars profit from Amaranth's final trades. Amaranth collapsed in September 2006.

The detailed US Senate Subcommittee

investigation report for the original 2007 hearings showed how Amaranth trades controlled up to 80% of the total volume on NYMEX gas futures. The company found no buyers to offload its positions as gas prices fell. The US congressional investigation report should be recommended reading for any organisation that wants to boost liquidity in the European gas markets by increasing trading volumes.<sup>4</sup>

**Benefits and pitfalls**

Gas producers naturally want high gas prices and short domestic supply is in their favour. If the utility gas traders do not succeed in delinking long-term base-load gas from oil, then they will never be able to pass on lower spot gas prices to their end consumers, and prices for LNG imports and pipeline imports will remain under the firm control of the gas producers.

Whether or not spot markets are delinked, market prices will continue to be driven by tugs of war between the producers, consumers and speculators. If Günther Oettinger, the European Commissioner for Energy, has his way, European gas consumers will win cheaper gas. That means producer prices must come down. So, now is the time to move rapidly forward in establishing a reliable, pan-European gas trading system.

**References**

1. *Natural gas report*, OECD/IEA, 2010.
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4. *Excessive speculation natural gas market*, US Senate Report, 2007.

\* Also at Delft University of Technology

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