

SPECIAL REPORT: LNG

A Change of Course for LNG

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Overview

Until the recent past, the course of liquefied natural gas shipments was predictable and fixed, with tankers plying routes determined by complex and rigid long-term contracts. Now, as global gas markets try to adapt to a new era of highly volatile oil prices, growing LNG supply and technological innovation, LNG sellers and buyers are going to have to cope with a very different environment. Following the price of gas in the three main regions – the Americas, Europe and north Asia – will be more critical than ever to a trader’s success.

As the graph below shows, the UK – home to the most liquid gas market in Europe and to plenty of regasification capacity – has nosed ahead of prices in Japan and Korea. It will likely be the destination of choice for spot cargoes while the winter continues. But the industrial downturn in the UK – which has seen the energy-intensive automotive and construction industries, cut output by about half, as of early January – will likely lead to further cuts in demand.

In Asia and Europe, the major energy importers had historically built their power generation and manufacturing sectors around a diverse mix of fuels for political and commercial reasons. Some countries had to ship gas in from the nearest sources: North Africa, the Middle East and Southeast Asia. Distances made pipelines uneconomic, but technology came to the rescue with a variety of ways of liquefying gas that otherwise would not find a market.

A web of contracts upstream and downstream covering complex gas pricing formulae and stringent rules on redelivery, combined with national monopoly purchasers and regulated utility prices, ensured that neither the buyer nor seller, let alone the final customer, had much incentive to seek out opportunities for short-term commercial gain.

The Changing Landscape

Described as a long-term business and with contracts to match, the accepted wisdom was that buyers and sellers stuck by each other and tried to avoid commercial disputes where possible. It was a difficult market for outsiders to understand, let alone trade in profitably, and it was culturally resistant to the idea of new entrants adding value.

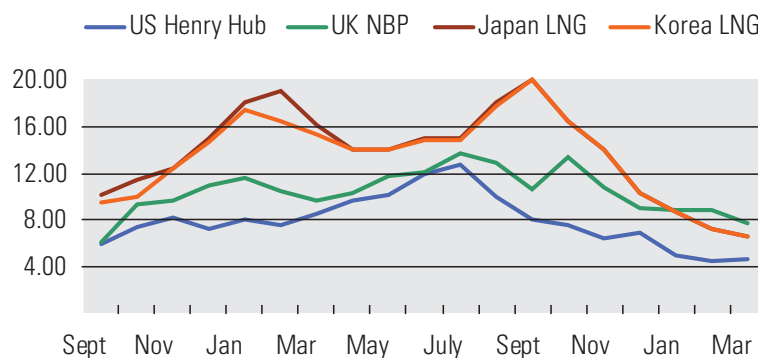
That description is now becoming outdated. In recent years, two major events in Asia suddenly and comprehensively rewrote the scenario. An earthquake in Japan in the summer of 2007 took 4 GW of nuclear capacity off the market. And leaky storage tanks in Korea forced more reliance on prompt purchases for immediate regasification.

The demand this created for spot cargoes was felt as far away as Norway. Indeed, in a generally dire first year of operations for the national champion Statoil Hydro, its liquefaction plant at Hammerfest – which had been dogged by late deliveries and underperformance since it started in 2007 – was at least able to send one cargo on the month-long voyage to Japan last March, although it was originally scheduled to go to the US.

True, there was not as much whetting of knives in the Middle East as could be expected from this golden opportunity to make money. And, true, there are still many restrictions on the redelivery of cargoes. Japanese buyers, for example, have to take gas they do not want, while prices in Europe move the opposite way.

But the inefficiencies produced by the market structure has led to a lot of rescheduling of cargoes which otherwise would have plied routes elsewhere in the world. While all gas producers made more money than usual, riding on the

Exhibit 1: Front month prices



Source: Platts

back of high oil prices, there were exceptionally high profits in the LNG businesses, especially for companies like BG, which had adopted a contrary strategy in the early years of this decade for building upstream and downstream length (see below).

The Paradigm Shift

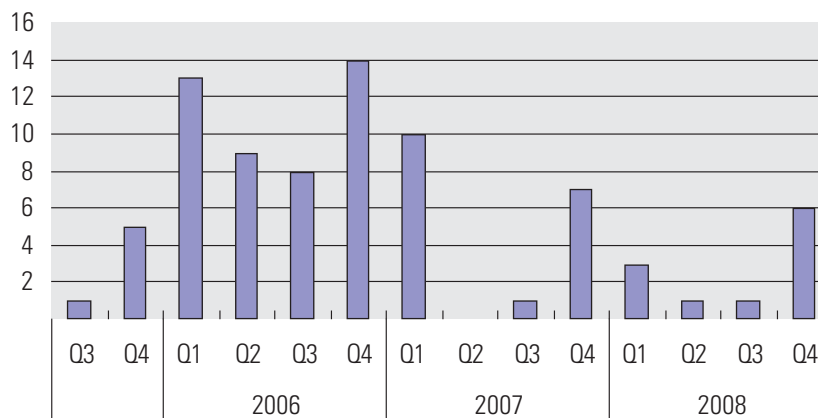
Center of gravity moves from Asia to Europe

If the world divides into three major consuming centers, price signals in the three show demand is moving from Asia to Europe, while US prices show very little appetite for gas at all. The first indication of market change was the reported purchase of a cargo from Trinidad & Tobago last autumn at around \$18/MMBtu, but by the time of its arrival in north Asia, prices were down to the low double-digits.

In the first few weeks of January, Europe witnessed a dispute between Ukraine and Russia of unprecedented duration. With European prices easily topping \$10/MMBtu, and Asian buyers looking to a sub-crude oil parity price of around \$8/MMBtu, there was a steady stream of ships into the UK's Isle of Grain, Belgium's Zeebrugge terminal, and, in particular, the Spanish regasification terminals.

An indication of the switch from Asia is the use of capacity at the Isle of Grain in the UK. It has seen a weekly cargo since the start of the year. Four tankers, from Algerian Sonatrach or UK major BP, had docked already by late January. While the UK price is lower in absolute terms than Asia was last year, the LNG has to go somewhere and Europe – for the time being – is the place for it. Baseload deliveries at Grain might be the norm this year, as they were in 2007.

Exhibit 2: Cargoes



Source: Platts

Supply, Seasonality and Contract Prices

With the softening of global gas demand in the context of economic stagnation or even shrinkage, the LNG market could very well be oversupplied in the near term, even before new liquefaction plants come online. As a next step, if Europe cannot absorb all surplus LNG, this could well lead to increased flows of LNG to the US, which is seen as the global sink for LNG owing to the liquidity and depth of the market.

But if Asian buyers continue to look at oil parity for their price determination, then the forward curve should be relatively flat, as the oil forward curve is typically flat and not seasonal. Meanwhile, wholesale European gas hubs have significant seasonality. Depending on the evolution of price drivers, that could easily lead to a situation whereby cargo deliveries swing east during the summer, and then back west during the winters. Looking at the current forward curve at the UK's NBP, summer '09 is a few dollars below the oil parity price – perhaps enough to attract cargoes to Asia. But in the winter, the UK is now the higher market, barring oil reaching the \$70/barrel mark. So the LNG market could display its own form of seasonality, with location rather than price being the overt symptom (see Exhibit 3).

Higher oil prices would in turn pull up European long-term contract prices, which are generally linked to oil products via a six-month or more average. But because of the lag created by that contract structure, any significant jump in the oil price would at first push up Asian demand for LNG, and only later lead to higher European prices.

In fact, the lag in the effect of crude on European prices was evident at the start of 2009, when long-term contracts were still averaging prices over a period that included the peak of crude prices in July 2008, whereas for Asian buyers, memories of that period had already faded. When oil prices were on the rise, it was Asian buyers who were willing and able to pay up for LNG spot cargoes. In the first place, they were able to pass on the costs, in their monopoly markets, to their consumers. A European seller cannot make money if the delivered cost of his cargo is higher than the prevailing market price when it arrives there. But also the delayed reaction of European long-term gas contracts to oil markets means that whatever oil does, Europe will react to later than Asian buyers.

Even without a jump in crude oil prices, the same seasonal swing could be created by a fallback in European hub prices. The NBP has been supported of late by the effects of a particularly cold winter and the support problems created by the dispute between Russia and Ukraine. But with the latter over for the moment, and warmer weather in sight, the whole NBP curve could fall sharply.

Europe's seasonality could be exported to the global LNG market with only a slight change to current prices, either through a rise in crude oil prices or through a softening of European hub prices.

In the first case, higher crude prices would push up hub prices down the line, but not quickly enough to win the price competi-

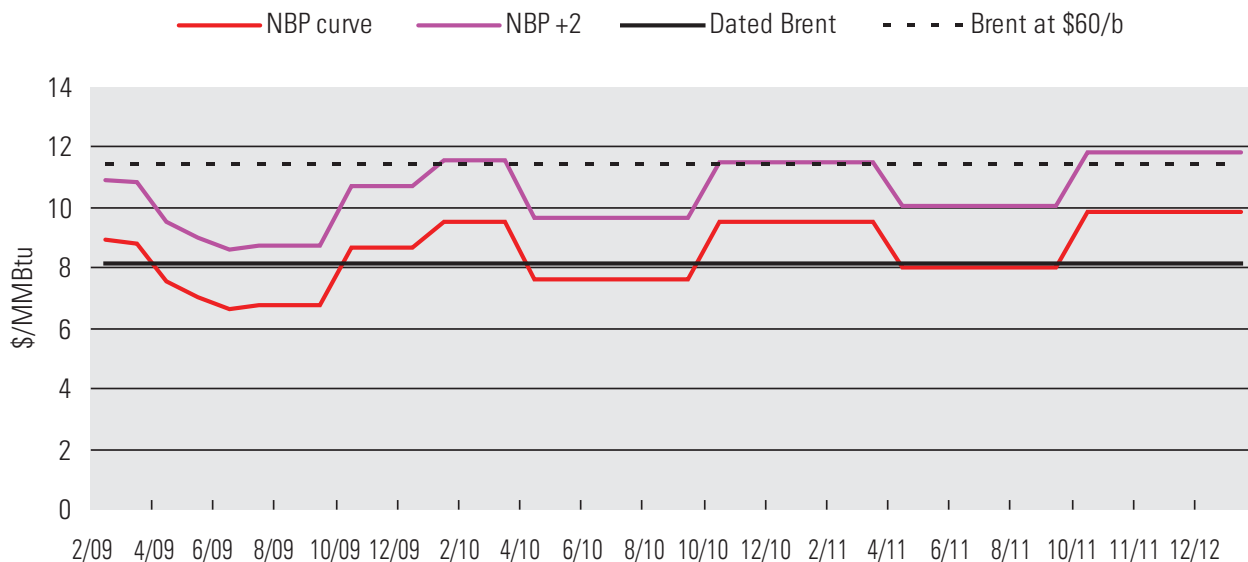
tion with Asia until the winter period. In the second, recent experience of colder weather and regional supply difficulties is likely to keep the colder months more expensive in Europe. But for the moment, oil prices seem to be fairly stable and low relative to Europe, and it is the European hub prices – responding to localized supply and demand concerns, as well as the very high Q1 price of about \$12.50/MMBtu in European long-term import contracts – that dominate the cargo destination equation. In comparison the Platts Asia daily spot LNG Japan/Korea Marker (JKM) was at around \$7/MMBtu in early February.

Asia over-stocked

Demand destruction took its toll on Asian LNG purchasers, who found they had more supply than demand. An indicator of the low confidence in the Asian economy was the cuts announced by Toyota, Honda and Nissan of between 20% and 30% late last year. Consumers with unseasonably high winter inventories were this winter able to resist sellers' usual practice of pegging spot cargo offers to western gas prices, with the result that trade dried up as neither side was willing, or needed, to budge.

Buyers said their LNG stocks were largely sufficient to cover their winter requirements, so they would only consider buying a spot cargo if it was priced lower than oil, or "a single digit."

Exhibit 3: Diversion pricing



Source: Platts

Sellers, on the other hand, saw no incentive to divert LNG cargoes to Asia if they could not fetch a premium of at least \$2-\$3/MMBtu to the UK National Balancing Point gas prices. In the context of falling output, Asian utilities that had contracted winter-arrival cargoes earlier based on pre-recession demand projections have had to manage brimming inventories. The only buyers that might be able to absorb an attractively priced spot cargo are the larger utilities with more extensive storage facilities.

Kogas, which suffered a storage crisis when four of its LNG tanks were shut in early 2007 because of leaks, has brought its tanks back into operation.

However, even if storage were no longer an issue, Kogas was unlikely to be a supportive factor. Fears of a demand slowdown were confirmed when the company's October gas sales figures showed a 3.7% year-on-year decline to the equivalent of 1.82 million mt of LNG. While Kogas' total sales for the first 10 months of the year were still up 6.6% on the year to 20.91 million mt, the company was expecting a flat figure for the entire year, instead of the 10% growth that was forecast early in 2008.

In Japan, although there were still nuclear power supply uncertainties, their impact might be "balanced" by a demand slowdown, said traders in Tokyo.

US

Spot cargoes will not be a regular feature of the US supply sheet for some time to come, although the market's depth, storage capacity and liquidity mean that it will always be able to absorb excess LNG.

At the moment though, apart from strong environmental lobbying which has stopped a number of projects in their tracks, the commercial case for building regasification capacity is weak. The latest casualty is Woodside's Ocean Way, an import project it proposed for the Los Angeles region.

Ocean Way was designed to include two delivery buoys about 20 miles offshore from Los Angeles and link into the Southern California Gas distribution network. But in January, the company said the market did not make this worthwhile, as a glance at the Henry Hub market shows.

The gas market in North America likely will remain in an oversupplied state, creating downward pressure on prices, until at least 2010 before a sharp fall in rig counts helps bring the market back into balance, according to one analyst.

The global financial panic and related concerns about global oil demand, coupled with stronger gas production growth, have pushed gas prices even lower in sympathy.

The US Energy Information Administration cut its projected 2009 average Henry Hub spot price to \$5.78/Mcf in January (\$5.52/MMBtu) from its December forecast that prices would average \$6.25/Mcf this year.

The Henry Hub spot price averaged \$9.13/Mcf in 2008 but ended the year averaging \$5.99/Mcf in December, the report noted.

"As consumption reacts to worsening economic factors, natural gas prices may need to fall further than currently forecast in order to restrain production activities and balance the market during the second half of 2009," EIA said, "particularly as inventory nears storage capacity." But prices are expected to begin to increase in 2010 as the economy improves. EIA predicted prices to average \$6.63/Mcf in 2010.

As well as the economic collapse, shale gas is another reason for the downturn. The head of a major shale gas producer, Chesapeake Energy, Aubrey McClendon, jokingly remarked that the US should build not regasification but liquefaction plant to cope with the possible length in the US gas supply portfolio.

Analysts at Wood Mackenzie think LNG and shale gas would be among the lower cost supplies of gas, and compete with each other for market share, at the expense of the more expensive domestic developments, whose turn would come later.

A sustained period of low oil prices would make the North American gas market more attractive to LNG suppliers as the oil-linked gas prices in European markets soften and Asian buyers switch from gas to oil resulting in more LNG on the market.

US LNG imports totaled 350 Bcf in 2008, according to the Energy Information Agency, which predicted that they would increase to 420 Bcf in 2009.

The agency added that LNG shipments to the US could increase beyond 420 Bcf this year if global demand for gas did not increase as expected. EIA put estimated US LNG imports in 2010 at a little more than 500 Bcf.

Even so, there is a risk of viewing the US as a Henry Hub, Louisiana-driven market, which is misleading. Although it is the most liquid hub by far, it is possible to take advantage of prices in the Northeast, which can see big premiums to the hub in the winter. Algonquin prices can be seen as a proxy for Suez' Everett, Massachusetts terminal as well as for Excelerate's buoy offshore Boston. However, some trading dexterity is needed to avoid being caught out holding an expensive cargo, if temperatures in the Northeast suddenly rise and depress prices there, for example.

Contrarian, innovative thinking

In this emerging global LNG market structure, cargo diversions have become part of the accepted vocabulary. Last year, 14 million mt (653.8 Bcf) of Atlantic Basin LNG were expected to be delivered to Asia, twice as much as in 2007. Most of that gas was originally destined for the US. BG has long-term storage capacity in Lake Charles in Louisiana, which means it is never a distressed seller. That has underpinned its aggressive marketing strategy, which saw most of its cargoes going to the east last year.

With its long-term gas sourced from Egypt, Equatorial Guinea and Trinidad and Tobago, BG has reaped the rewards of its contrarian strategy of taking a big upstream or contractual purchasing position in the early years of this decade.

Then, there are more traders. In addition to the majors, more recent arrivals such as banks and pure trading houses have tried to add value through more sophisticated approach to energy.

And companies such as Malaysia's Petronas are hedging their positions up- and downstream, taking equity in gas production and in regasification facilities in the Western Hemisphere, for example. Companies are also pairing up to swap regasification capacity across the globe, to enable each to manage their supply and demand better.

On the technology side, Excelerate and Flex LNG are operating new vessels that are not only transportation plant, but can also perform more functions, such as produce gas, liquefy and reliquefy gas or regasify it on board. This slashes capital costs and reduces the need for permitting expensive, often controversial and always inflexible plant bolted to the shoreline. But some innovations do not look so clever, when oil is trading below \$50/barrel.

In turn, import terminals, such as at Zeebrugge, have been modified to allow LNG to be reinjected into a vessel and taken to higher-priced markets. That enabled capacity holders to reshipe LNG to be delivered there from Qatar last autumn and forwarded again to Asia soon after.

Further upstream, there are new sources of gas as well. In Australia, there is a score of projects planned, including several in eastern Australia based on the next big thing – coal-seam gas. BG and ConocoPhillips are among the companies fighting for access to these prized reserves, which are so close to the potential power-houses of future industrial growth fast-growing markets of India and China.

And two years ago, LNG vessels were used as floating storage – either as insurance against a physical demand, as Spain has very limited dry gas storage, or for commercial reasons. Moored in a Norwegian fjord, an LNG tanker's contents are worth very much more to French customers in January than they are in October, for example. The cost of boil-off and daily rates might still allow seasonal arbitrage, harmful though it might be to the environment.

Changes in technology, trade and geopolitics all introduce volatility into the LNG market. The process of price discovery in northern Asia, which Platts has developed, and the growth of regasification capacity elsewhere in the world, will contribute to ironing out some of the inefficiencies and to redistributing more evenly the wealth that LNG represents.



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