Towards a global reference price

LNG is one of the fastest-growing energy markets. But although there has been movement towards a global reference price, the costs involved along the value chain suggest the commoditisation achieved in the oil sector is unlikely. By Pooya Alai, manager, Adrian Leaker, assistant director, and Michael Hurley, global LNG leader, PricewaterhouseCoopers

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ACCORDING to the International Energy Agency (IEA), LNG is expected to deliver around 40% of the growth in global gas supply between 2005 and 2010, a doubling in size in just five years. As the sector develops, the structure of the market will also change. The traditional model consisted mainly of dedicated point-to-point supply chains underpinned by long-term, back-to-back contracts.

But now, national oil companies – as suppliers – are seeking positions in regasification terminals (for example, Algerian Sonatrach's capacity stake in the UK's Isle of Grain plant) and, conversely, utilities – as offtakers – taking positions in the development of export terminals (for example, Unión Fenosa's equity stake in Egypt's Damietta plant).

At the same time, a short-term LNG spot market has developed, accounting for around 11% of global sales in 2004, if swaps and diversions are included, which the IEA predicts will grow to 20% in the coming years.

This presents an investment opportunity, but it also presents a problem. LNG investments, in particular in liquefaction plants, are large, long-term capital commitments, requiring a degree of demand certainty over the life of the project, and any investment decision must take into account the possibility of the underlying economics of the market changing during the life of that investment. A key concern, especially for players wishing to establish a portfolio of assets or contracts, is to understand the effect of forecast sector growth on the main value drivers – in particular whether the price of LNG will be set globally, outside the control of any individual project.

Links between markets

Two indicators suggest the market is moving towards a global reference price:

- **Geographical connections** – since 1970, LNG trading has evolved regionally, in the Atlantic and Pacific basins, with hardly any interaction between the two markets. But recently, links between the regions have grown as a result of variations in demand and supply. In the Atlantic basin, the US Henry Hub index is increasingly used as the reference price against which other markets compete for LNG, on a netback basis to the point of supply. Demand-pull – excess demand together with relative ease of access through east-coast terminals – has established the US gas market as the benchmark LNG market and the Henry Hub price as the reference in the Atlantic basin.

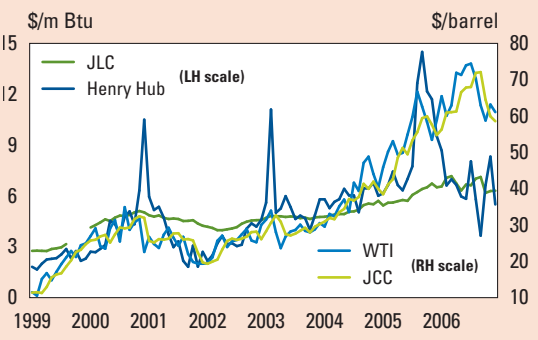
Conversely, Middle East producers, such as Qatar, are emerging as the primary linkage between the Atlantic and Pacific basins because of their geographical position between both markets and their ability to generate supply push – excess production capacity that enables them to deliver spot cargoes east or west, depending on the relative netback price from each market, creating a pricing bridge; and

- **Oil-price indexation** – the price of imported gas, whether by pipeline or as LNG, has traditionally been linked to competing fuels in importing countries. For example, contracts in Japan are indexed to the Japanese Crude Cocktail (JCC) and in Europe to fuel oil and gasoil, which are the principal substitute fuels for gas' main use in those markets – power and heat generation. In the UK and the US, which have traded gas markets, the price of LNG is linked to the National Balancing Point and Henry Hub indices, respectively.

There are regular discussions about oil-price indexation. Points of debate are that gas prices are correlated (or, more technically, co-integrated) with oil prices over the long term (see Figures 1 and 2); and that the main exporters of gas to Europe – Russia, Algeria and Norway – have no incentive to break the oil-price link, as the EU's push for greater gas-to-gas competition will drive down prices.

For much of 2006, however, US and UK gas prices decoupled from oil prices, which soared to record highs. Although not necessarily an indicator of a break in the historic price relationship, this short-term divergence created unexpected anomalies to the disadvantage of consumers and producers alike, which could have been avoided had LNG been benchmarked against pipeline gas. For example, although Japanese

Figure 1: LNG and oil reference prices, US and Asia



Source: Bloomberg

buyers were protected from the high oil price through price caps in their long-term LNG contracts, any savings were eroded by the cost of supplementing contracted supplies with higher-priced spot cargos.

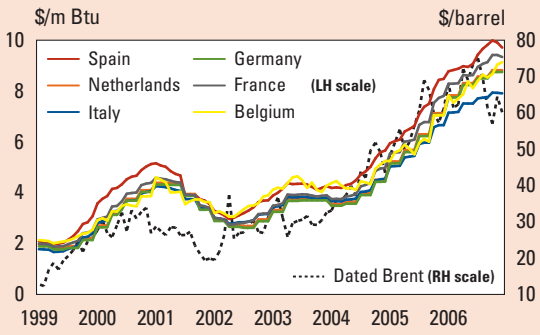
The development of spot market and perhaps even a futures market for LNG is a possibility. One clear signal that indicates a desire for a more actively traded market is that some buyers in Japan – the largest consumer of LNG, constituting over 40% of global demand – want to switch part or all of the indexation of their long-term LNG purchase contracts from the JCC to the Henry Hub index, which, unlike the JCC, has an actively traded futures market on Nymex that enables buyers to manage their price-risk exposures through hedging.

In a separate development, Dubai is planning an LNG storage hub, with a capacity of 40bn-65bn cubic feet, in a bid to become the LNG trading capital of the world. Acting as an intermediary between buyers and sellers, the hub would enable both to take advantage of price and demand volatility, which in turn would help the spot market to expand and could stimulate the creation of futures or other derivative instruments for LNG and LNG shipping. Dubai may find competition from Qatar, which, on course to become the world's largest LNG producer, may wish to develop such a hub itself. And both could face competition from Singapore, the Pacific region's traditional oil-storage and -trading hub.

Constraints to commoditisation

It is tempting to draw an analogy with the development of the oil market, where shipping and trading have become fully commoditised through the development of spot and futures markets. The oil sector also started with point-to-point contracts and was strongly influenced by the major international oil companies until the oil-price shocks of the 1970s. Opec took over until the introduction of netback pricing in mid-1980s since when, arguably, the market has governed prices. Prices now fluctuate freely in response to demand, spare production capacity, refining capacity and supply security. Oil futures have been traded since 1983.

Figure 2: LNG and oil reference prices, Europe



Source: Bloomberg; Energy Intelligence

LNG shares many of the characteristics of the oil market. Netback pricing is already a reality, the spot market is growing and a futures market is a definite possibility. However, there are structural differences between the two markets. Oil price differentials are much smaller than for LNG because of the lower cost of shipping – the cryogenic technology required to ship LNG is expensive – and the greater number of points of supply and offtake.

Additionally, building liquefaction and regasification capacity is capital-intensive. Consequently, speculative investments in either without a supply contact are rare, especially if the terminal is project-financed. Limited production and import capacity is an impediment to the development of the spot market.

Volatility is generally undesirable for all counterparties. Just as consumer countries discuss the merits and downsides of the contractual link between gas and oil prices, so producer countries have discussed forming a gas cartel, similar to Opec, in an effort to influence the price. In the absence of any serious incentives, both camps seem unwilling to depart radically from the traditional model. Consequently, in the long-term, point-to-point contracts will remain the mainstay model for the largest players, whether they are international or state-controlled companies.

Opposing forces

There is evidence that Henry Hub prices will emerge as the market reference in the Atlantic basin, and as a reference price alongside oil in the Pacific, against which importers must offer a higher price on a netback basis to compete for supply. There are also signs of a desire to hedge against excessive volatility in LNG prices through storage, spot trading, contract-indexation mechanisms and financial instruments. This would also lead towards greater standardisation in pricing to facilitate trading, similar to existing exchange-traded contracts.

However, with the greater capital costs involved along the LNG value chain, achieving the degree of commoditisation seen in the oil sector is unlikely and the traditional model of long-term contracts will remain in place.

These two opposing forces may stimulate technological innovations as a solution. The resurgence in the LNG market in the 1990s and early 2000s came about following the lowering of unit costs as a result of increasing economies of scale. As markets become more interconnected and the requirements for risk management increase, small-scale, mobile, offshore production concepts may evolve, providing a means to monetise previously stranded reserves. An increase in liquefaction and regasification capacity will spur trading, both physical and financial, and enable the rate of growth of the market to continue. ■

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