



CAN PRICE TERMS IN YESTERDAY'S LNG CONTRACTS SURVIVE THE UPHEAVAL OF TODAY'S MARKETS?

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ABSTRACT

The torrent of events engulfing and driving today's LNG markets are severely testing the business plans, agreements and expectations of the LNG business. Not only have we had to face a global recession but do so concurrently with unprecedented reductions in gas demand, volatile pricing and a surge in new gas supply. The situation defies the neat labels that fit past "buyers' markets" or "sellers' markets". And with unprecedented conditions come new questions and challenges for both LNG producers and buyers to manage.

Consider just one of those questions: one that has come more and more to fore. Just how robust are the pricing terms drawn up in agreements for a very different LNG world? Volumes which had been safely placed in traditional markets are now coming loose resulting in sudden changes in trade flows defying the expectations of only a few months ago let alone years ago. Even agreements with clear review clauses find themselves envisioning a world which events have passed by.

This paper will examine these challenges; consider just how different conditions are; and address whether a "return to normal" is a real possibility or whether different terms and practices will be required – not least in price and volume provisions. As the behaviours of producers, markets and buyers adapt to new conditions just how well will contracts reflect the increased volatility and (global) flexibility of the business, what kind of commercial teams are needed to deliver them and what defines the sufficiently skilled personnel and suitable processes and mandates to enable them to operate effectively?



INTRODUCTION

The LNG industry is passing through a period of change on a scale far greater than its usual cyclical shifts. In the years of booming economic growth up to 2008 demand for LNG was outstripping supply, it was a sellers' market with competition between buyers driving up prices. The market became truly global for the first time with cargoes flowing from the Atlantic Basin to Asia where buyers were willing to pay a premium over Henry Hub and NBP to secure supply. Investment in the construction of new capacity was proceeding at an unprecedented rate chasing the growing demand – despite rising costs.

Then, the LNG world turned upside down in 2009 as economies crashed the world over, and especially in the main LNG importing regions. Growth of LNG demand gave way to a severe decline just as major volumes of LNG from newly completed projects started coming into the market. As a result there was much unexpected LNG seeking diversion to different markets around the world. And, while there has been a major shift in the prospects for LNG pricing, especially in Europe, some pricing traditions have been remarkably resilient . . . so far. The way LNG is priced around the world is being challenged by the enormous shifts of trade with an interplay of forces driving and resisting change. This is not the orderly world of LNG of just a few years ago.

LONG TERM CONTRACTS STILL DOMINATE

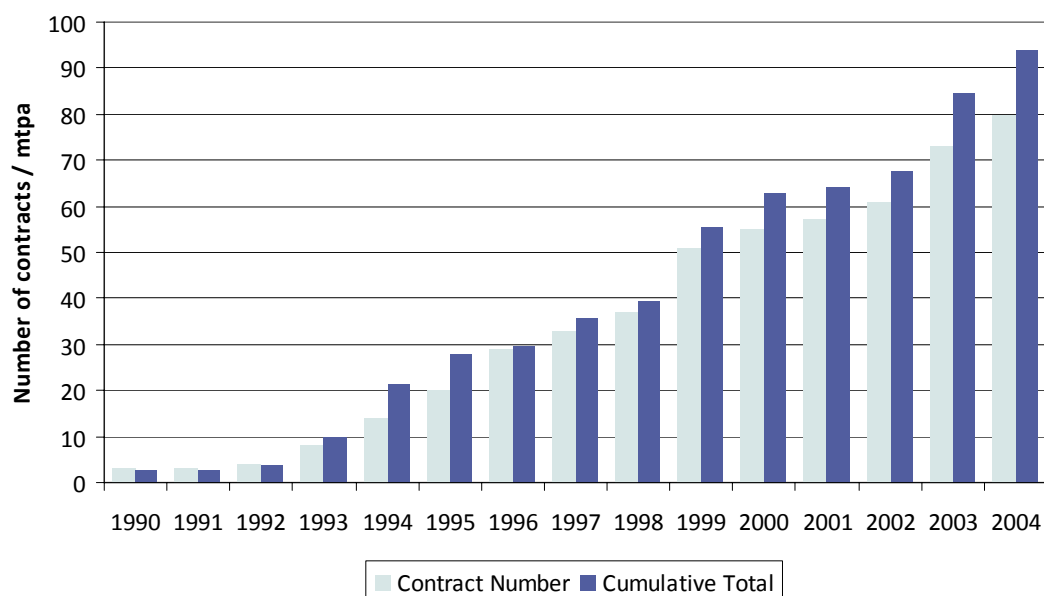
The majority of LNG being bought and sold today is covered by long term sale and purchase contracts. LNG sold on these contracts is priced differently in the main markets around the world: crude oil indexation in Asia; oil product indexation in continental Europe; and gas trading hub-based pricing in North America and north-west Europe (primarily UK). Many have anticipated that amid the turmoil and emergence of global trade, the differences would be eroded as prices converged with the result that oil indexation mechanisms would be replaced by some form of gas market indexation.

Today, on the contrary, oil indexation of long term contracts appears to be holding up, albeit coming under renewed strain in Europe. Although thus far we have seen little movement in the Asian market away from crude oil-indexation,. Continental Europe is increasingly emerging as a battleground for pricing, between oil-product indexed LNG and pipeline gas on one hand and hub-based pipeline gas and LNG on the other. The outcome of this battle will be influential on the world of LNG. If the result is a move towards more hub-based pricing it will create a much larger pool of LNG priced on quite a different basis from that in Asia. If that happens the question will then be; how long can two regions with different LNG prices co-exist?

With such fundamental shifts possible going forward, it becomes increasingly necessary to be able to adapt, not only in the way companies typically adjust and negotiate price terms, but also that they are prepared to do so in different ways in each of the regions they are exposed to.

PRICING GAS IN LONG TERM LNG CONTRACTS

LNG projects are usually built to operate for 20 years or more with most of the production sold on long term sales and purchase contracts of about that duration. In 2010, at the time of writing, there are an estimated 80 contracts operating, accounting for some 94 mtpa or 37% of all LNG being bought and sold, that were signed between 1990 and 2004, a period when the LNG business was somewhat different, and simpler than it is today.



Source: Gas Strategies

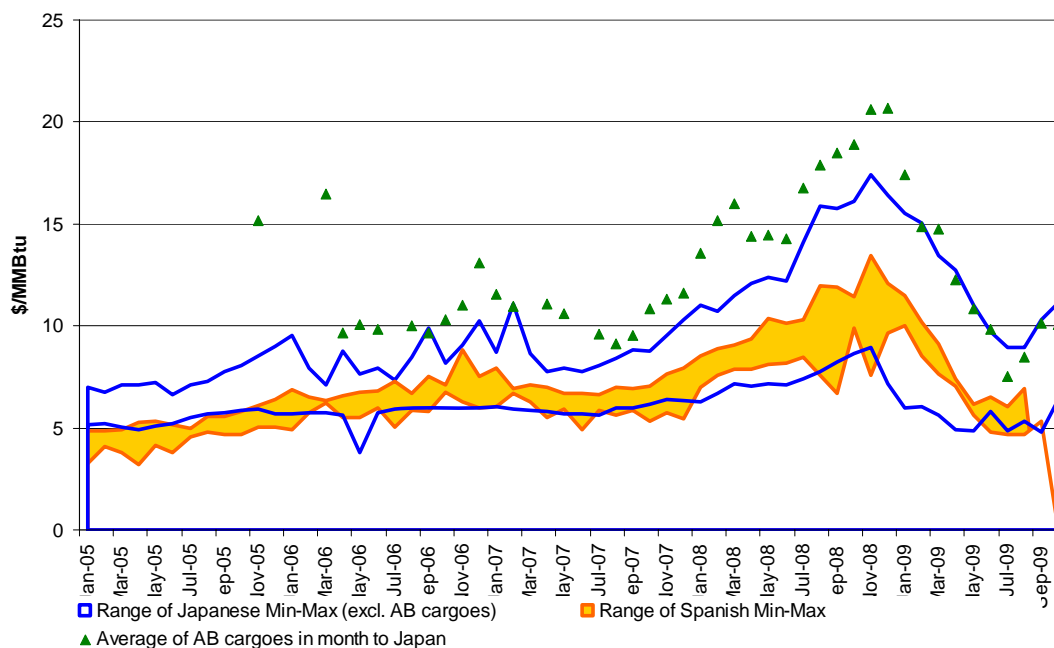
Fig 1 Numbers and annual contract quantities of LNG of long term contracts in operation in 2010 by date of signature.

Globally, there are three basic mechanisms employed for pricing LNG.

In North America, UK and a small portion of western Europe, the price is set by direct reference to a trading hub, Henry Hub or some variant on the UK's National Balancing Point (NBP). The markets are liberalised, wholly or in material part, with competing gas suppliers and the price being set at the level where supply and demand are balanced in the short term.

In continental Europe, LNG and pipeline gas are indexed primarily to oil products, reflecting the original principle of this pricing concept of gas competing with these products in different sectors. There is quite strong convergence of pipeline gas prices across Europe and as LNG has been the marginal supply it is generally priced closely to that same level. This ensures it is competitive with other gas. There is only a small spread between the prices of different streams of LNG into a specific country.

Asian markets take their lead from Japan, the world's largest LNG consumer. LNG is indexed to crude oil, reflecting a historical reference to gas competing with oil in power generation. The exact relationship between gas price and JCC has varied reflecting the perceptions of supply and demand of LNG and the relative negotiating strengths of the seller and buyer. The price is therefore competitive in the market for long term LNG at the time of negotiation of the contract: when the market for LNG is perceived to be tight sellers can command higher linkages to crude oil and thus prices and vice versa. Unlike continental Europe, let alone traded gas markets, prices do not tend to converge over time (Fig 2).



Source: Gas Strategies

Fig. 2 Contract prices for LNG into Japan and Spain at a single oil price.

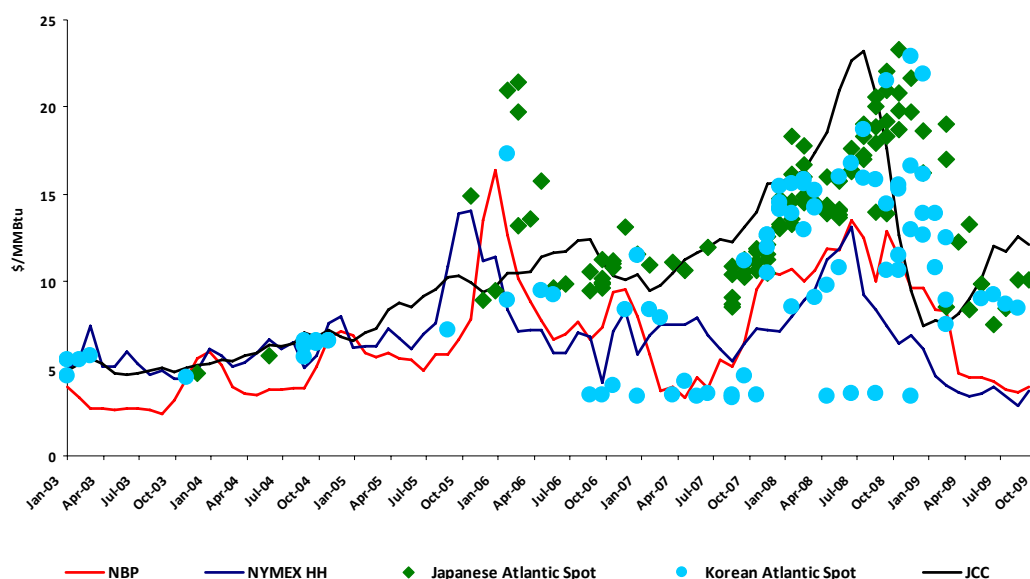
Consequently while the pricing mechanisms in these Asian contracts are fundamentally the same, the very different perceptions of supply and demand outlook at the time of the negotiations mean that prices active in the market today differ surprisingly widely across different contracts for LNG going into the same Asian market. This is an aspect of the trade where it seems that buyers particularly would seek an alternative pricing mechanism to remove wide disparities in their costs of supply. In fact, the only party which has challenged the traditional structure have been sellers at the height of the sellers market. Then, they often priced spot cargoes at a premium to Henry Hub or NBP. How long will buyers continue to resist the temptation to return the favour in leaner times? The basis of a possible alternative to the status quo has certainly been put on the agenda with the development of short term LNG trade in the Asia market.

SHORT-TERM PRICING OF LNG

In parallel with long term oil-indexed prices, many buyers and sellers have dealt increasingly with another way of valuing LNG, that provided by the trade of short term and spot cargoes.

Liquid, traded markets for gas in USA and UK provide an outlet for LNG that mitigates the volume risk. They are also generally easier markets for LNG to be diverted to or from at relatively short notice creating opportunities of arbitrage. The removal of volume risk and the transparent valuation of gas in the liquid markets have driven the growth of short term trade of LNG.

Consequently, prior to late 2008 prices when Asian demand was strong, the price of short term LNG into Asia markets was determined by the value of HH and the NBP (Fig 3).



Source: Gas Strategies

Fig. 3 Spot cargo prices for LNG into Japan and Korea vs. HH and NBP.

The short term LNG market is starting to emulate that operating for crude oil in which a few key liquid trading centres around the world set global prices for international trade.

Despite this experience, and being aware for that last year that Henry Hub and NBP prices were well below long term contract prices, which in some cases have made gas non-competitive particularly for gas companies, there has not been any significant move in the Asian market to change pricing in long term contracts. So the short term answer to whether buyers will turn the tables on sellers and demand discounts in this environment is “no”. Why?

LONG TERM RELATIONSHIPS PARAMOUNT IN TRADITIONAL ASIAN MARKETS

The use of crude oil price indexation in Asia appears to be well ingrained and there seem to be several reasons why this is so. Structurally, the most important reason is that where LNG is going into markets that are not liberalised and competitive, as is the case in Asia, there is no pressure from an alternative source of available gas at a different price that undermines the market share of the buyer.

This is a fundamental point but there are other cultural factors that contribute. Asian buyers in the traditional markets of Japan, Korea and Taiwan place great importance on maintaining long term relations with their suppliers, assiduously applying the terms of contracts and trying to resolve differences by negotiation rather than external dispute resolution. Buyers have not pressed the argument strongly about the great differences of LNG price in existing contracts. When applying downward quantity tolerance (DQT) for example, it appears this was done evenly across the board, rather than on the basis of minimising acquisition costs as would probably have been the case in Atlantic markets. Indeed, a typical and quite accepted Atlantic basin commercial practice would be to go further: maximise DQT to the full extent possible and replace any needed supply with cheaper short term volumes. This has not happened to Japanese contracts.

This focus on the relationship is a corollary of the importance placed on security of supply. With limited alternative sources of gas buyers are willing to pay the premium to attract supply, and to work hard to maintain that position.

The conservatism of buyers is supported by the producers who usually have interests in both gas and oil. There is a sense in which all parties feel comfortable with oil pricing. They understand how the market

functions and have a good appreciation of the risks. So much oil is traded that great reliance can be placed on the validity of the oil price as a true indicator of value. In addition crude oil-linked gas prices are less volatile as OPEC seeks to manage production to achieve oil price stability.

There will, however, be a strong short term market for LNG in which the logic of price formation will be becoming more transparent, as discussed above, and the argument for reducing the strict adherence to oil indexation and incorporating price signals from the short term market will become stronger.

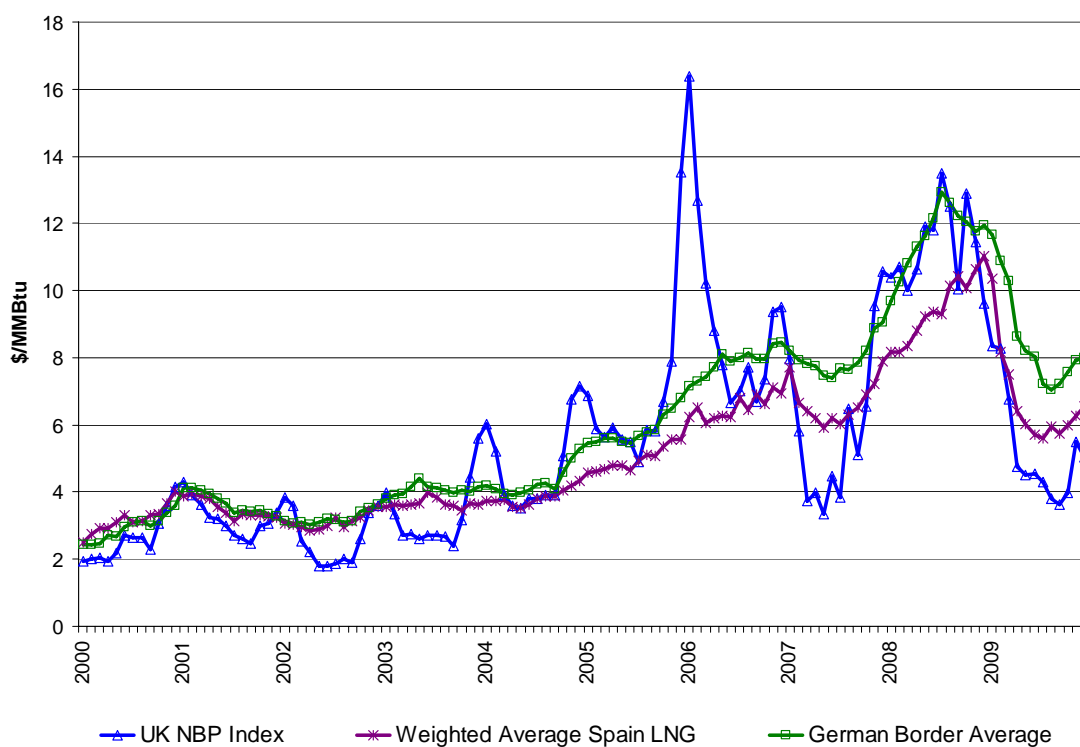
CONTINENTAL EUROPE

In continental Europe the picture is very different. There is much greater pressure on oil-indexation because gas purchased on this basis, under long term pipeline and LNG contracts, is in increasing competition with gas that is differently priced. At present, these two worlds co-exist, but it is an uneasy and unstable relationship which has been gradually edging towards traded prices prevailing in the long term, if not sooner.

The UK market has been liberalised for many years with the gas price established by trading at the NBP. The UK price has fluctuated widely over time, but because of the inter-connections with continental Europe this variation has often been around the level set by the oil-indexed long term contracts in that larger market.

Today in continental Europe, competing companies are driving liberalisation of the markets and other trading hubs are emerging in the Netherlands, Belgium, France and Germany. At the same time the underlying direct competition between gas and oil products reflected in the oil indexation formulae, has weakened considerably. Patterns of fuel use are changing and for gas the principal competitors are coal, electricity and other gas. The number of consumers who have the ability to switch between oil and gas has declined in many markets. When the decision is taken to construct a new fuel-consuming facility the investors will take a view on which fuel to use and fix on that. Having made the decision they will not incur the additional costs of maintaining an option for fuel switching to oil with different burners, storage and supply arrangements. Consequently fuel switching does not drive gas price convergence in Europe. What has largely maintained oil indexation past the relevance of a direct link with competing products, however, has been the liquidity of traded oil products and thus their ability to be hedged. But with so many of the oil linked contracts strongly out of the money, even this attraction is diminished, if liquidity rises materially in traded markets as appears to be happening.

Without a formal link, hub-based prices and oil-indexed prices are able to move along independent paths; no problem in past years. However when hub-based prices are significantly below oil-indexed prices (Fig 4) buyers who have the freedom to do so, will prefer to buy this gas, taking market share from those who are locked into differently priced contracts. Long term buyers of oil-indexed gas and their suppliers are faced either with the loss of market share or changing to hub-based pricing.



Source: Gas Strategies

Fig. 4 Comparison of NBP and European long term LNG and pipeline gas prices

That is what is happening today and the globalisation and turmoil of LNG are contributing directly to the pressure on oil-indexation.

FUNDAMENTAL CHANGE IN THE US MARKET

Global flows of LNG are also affected by the status of the gas market in USA. For many projects initiated over the last few years, the USA market was seen as a safe anchor for LNG. Indigenous gas production was considered to be in decline or at best holding flat creating a firm outlook for Henry Hub with the advantage that cargoes could be diverted to more attractive markets that presented themselves while not being that unattractive if the US was all there was. That picture has been dramatically changed by the emergence of non-conventional gas from shales, tight sands and coal beds. The long term productivity and economics of these sources is still uncertain but the impact on gas prices has been profound pushing Henry Hub down and reducing the attraction for LNG. Cargoes are still flowing to the USA but mainly to those locations in the north east enjoying a significant basis premium.

This transformation is occurring at the same time as a wave of recently completed new production capacity of LNG is coming onto the market, particularly the large quantity from Qatar. By the end of 2012 another 85 Mtpa will be on the market compared with the world at the beginning of 2008 and looking for a home. Much of this new capacity has been financed on the assumption it will flow to USA or UK but with the expectation it will be sold into higher value markets. Some of the LNG has been committed to long term sales in other countries, but there is still 34 Mtpa that will go to USA or UK unless it is redirected.

Consequently, the prospect for the next few years is for an excess of supply over demand fuelling the liquidity of the LNG market.



Alongside the immense growth of LNG supply investment in ships and re-gasification capacity has also moved on apace to the extent that today we have a considerable “oversupply” of both in relation to LNG supply. The conditions are in place for the appearance of an unprecedented level of liquidity in the global

LNG market over the next two years or so. In a world where supply is no longer tied to only one market, shipping and regasification capacity will remain in excess of supply capacity.

NEW LNG COMING TO EUROPE

In the absence of strong demand growth in Asia and with North American prices low, Europe has become the market of choice for divertible LNG, attracted by the liquid traded markets and higher prices supported by oil-indexed long term contracts. While it faces some competition from China and India – which could rise to material levels – Europe is the focus of the changing LNG world. Short term LNG is providing the competition that is putting pressure on oil indexed contracts for both pipeline gas and LNG.

It may be that the global economy rebounds quickly, that non-conventional gas does not prove so ubiquitous and gas demand is supported in dealing with climate change. These circumstances will relieve the pressure in Europe but if they do not an accommodation will need to be found.

Buyers will pursue price reviews citing the fundamental change in market conditions as a basis for change. Suppliers will no doubt be reluctant given the likely impact on their revenues and seek to delay with the hope the pressure will subside. The process of finding agreement will be protracted but generally parties will no doubt prefer to reach a negotiated settlement rather than have a solution imposed on them through arbitration given the unusual circumstances prevailing at the moment and the more arbitrary nature of LNG arbitration in this setting.

Once the ball is rolling however, with more gas being priced alternatively, the momentum for change will grow exerting more pressure until most contracts have been converted away from oil-indexation. If this happens, it will be time to revisit the picture in Asia and the status quo will come under much greater pressure than it has been in 2009.

IMPACT ON ASIAN MARKETS

The establishment of a new large, liquid gas market and the conversion of continental European LNG contracts to hub-based pricing would create a profound shift in the LNG market. Collectively, continental European LNG contracts account for 103 mtpa, some 40% of the total. Globally there would then be two major blocks with different LNG pricing. Would these be able to co-exist?

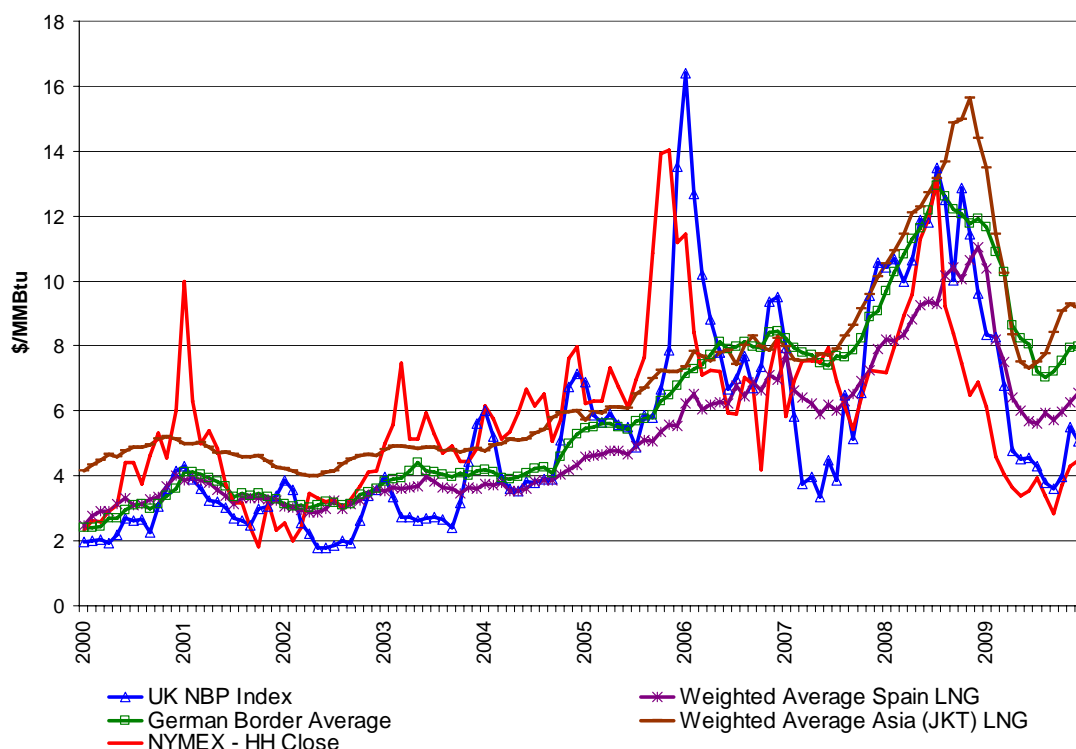


Fig. 5 Comparison of NBP and European long term LNG and pipeline gas prices plus HH and Japanese average LNG prices

It is noticeable that today Asian buyers are not taking the opportunity to lower costs (Fig 5) by bringing in cargoes from the Atlantic Basin. If there is a much larger pool of flexible LNG available, will these buyers continue this stance?

If the two systems continue to co-exist there will be major opportunities for those with flexible LNG to profit from the arbitrage. Would this remain a marginal activity would Asian buyers be drawn into the trade? Despite their conservatism some buyers are voicing a need for change. Morikawa of Tokyo Gas at the LNG Summit in Barcelona indicated that Japanese buyers could see an opportunity in LNG prices not solely linked to JCC prices. Yoneyama of Osaka Gas pointed recently to the loss of competitiveness of JCC indexed LNG against other fuels and Jane Liao of CPC pointed to the erosion of long term relationships by suppliers focused on short term profit, quoting the difficulties experienced as a result of rigid destination constraints.

What might further stimulate this trend is if the traditional Asian markets see the new Asian LNG entrants and major industrial competitors, China, India and several others, taking advantage of lower priced cargoes available.

MANAGING CONTRACTS IN THIS UNCERTAINTY

Conditions in the LNG industry are, as never before, creating the potential for significant changes in price terms and probably also the volume offtake obligations of existing contracts.

With these forces at play on existing contracts, the commercial managers responsible for their administration on behalf of sellers and buyers need to be highly proactive. There is potentially a lot of value at stake with the contracts as they are and major risks associated with making a significant change.

There are five key areas for managers to address if they are to be prepared to meet the challenge:

Anticipate the pressures

Understanding the dynamics of supply and demand for LNG in the next few years is essential, especially the trend towards excess of supply and the patterns of LNG trade this elicits in the context of the supply / demand and pricing environment that prevails. The balance has swung strongly over the last year with more cargoes coming into the Atlantic Basin markets as a result.

Both new entrants and established players already face opportunity and challenge as a result of the market changes we have seen. Defending existing positions through active portfolio management or opportunistically taking advantage of changes will be key.

Be prepared to deal with those pressures using the mechanisms specified in the contracts

With major complicating factors at play, now more than ever parties will need to be able to conduct analysis, to understand and defend their positions whether to initiate a Price Review or anticipate one being called by a counterparty. This is a particular challenge for sellers who have a portfolio of sales contracts into multiple markets, each of which requires a detailed understanding of local conditions of supply, demand, competing fuels, regulations and policies.

Most importantly, companies need to consider how useful past assumptions are to what is likely to unfold in the near future.

Identify and analyse potential solutions

The structure of the market and nature of competition may mean that the price terms in existing contracts are not wholly suitable for the future. In looking at potential outcomes for a Price Review, parties will need to consider whether more fundamental changes are warranted, particularly with respect to index elements and whether to incorporate some element of hub-based pricing. If this is to be seriously considered then the relationship of the hub price in relation to the market for the LNG needs to be established and the factors driving value at that hub fully understood to decide whether it will provide a reliable, long term index. Importantly, the impact on price of LNG and the competitive position in the market and in relation to other LNG needs to be assessed to determine the changes of value and risks that would result. In setting new price terms, extra attention now needs to be given to the trigger clauses and grounds for change in future reviews. Further, adequate hedging and risk mitigation against new pricing indices will need to be applied.

Be prepared to negotiate these potentially radical changes.

It may be concluded that changing price terms is but to get the change will require negotiation and agreement with the counterparty. The counterparty's own position will need to be analysed to identify a solution that is potentially acceptable to them. It might be necessary to educate the counterparty in more than the detail of the analysis to gain their commitment to this path. In recent years companies have increasingly turned to arbitration but parties have to decide if they are prepared in this environment to accept an outside solution where fundamental change is required.

Change the portfolio to include more short term LNG

If we enter a period of greatly increased liquidity then both buyers and sellers will become more reliant on the short term market to balance their supply and demand positions and maximise value. Commercial teams will require the skills to engage in short term trading of LNG that demand greater flexibility and speed of action, more day to day engagement with portfolio balancing and participation in the market to understand cargo availability and pricing. Where these capabilities and teams will need to be reorganised or created, new business processes will have to also be put in place and new competences acquired.

CONCLUSION

The global oil market moved to prices being set by short term traded markets when many long term supply contracts were terminated in the early 1970s. Similarly, the traded gas market in USA emerged when key elements of long term contracts for gas supply from pipeline companies were terminated. In both cases the effect was to boost the short term availability of supply in a market where there was abundant infrastructure, for storage, processing and delivery driving liquidity. Potentially similar conditions are apparent in the world today.

The LNG industry is passing through turmoil that may be short-lived, but might also be sustained. It is an environment in which liquidity will add significantly to the pressures on the price terms in existing sales and purchase contracts. The consequences cannot be predicted but conditions could prevail that will drive parties to look at alternative approaches to pricing other than indexation to crude oil and oil products.

Asian markets are proving resilient to these pressures and seem unlikely to be changed in the absence of some other major external factor. The focus today is on the battle between supplies of gas priced on different bases in continental Europe. There is the potential for sufficient momentum to build leading to a change of existing contracts for more to hub-based pricing. If that occurs we could enter a period of great uncertainty with the world divided into two LNG trading blocks with different prices.

For all companies with existing LNG contracts, being aware of these events and determining how they should respond in renegotiation and creation of contracts and adjusting their business model is of great importance. These uncertain times will also present major opportunities for new players, without existing supply contracts, to enter the business.