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A VITAL LINK IN ENERGY TRADING

Energy Viewpoints

Developing Energy Markets

Issue 3 – Summer 2005

Developing Energy Markets

Contents

Dear Reader,

Economic growth and energy consumption are closely correlated, and a modest growth in the so-called developed world will add to the rapidly increasing demand for energy in emerging economies such as India and China. The exploration of new oil wells cannot keep up with the depletion of existing wells; and drilling is typically moving to more remote areas. In NW Europe, much power generation capacity is becoming technically obsolete and the costs of emissions allowances have become a substantial proportion of power prices.

These factors have fuelled demand for new and cleaner energy sources like gas. In NW Europe, which is relatively distant from major gas resources, transport of gas in liquefied form (LNG) is probably the most economical way to guarantee security of supply. Several new LNG terminals are under construction throughout NW Europe, and others are under consideration. LNG activity is especially high in the UK, where large influxes of LNG may preserve the UK's current role as gas exporter, with infrastructural developments in the North Sea well on their way (Interconnector, BBL pipeline). The UK and continental European gas markets will be tied together.

However, LNG also forces Europe into a worldwide competition for gas. LNG tankers may rapidly change course if prices are better in the US or China. In fact, this is exactly what happened a couple of weeks ago with the first LNG shipment to the new LNG terminal at the Isle of Grain. Will a global LNG market develop? What is the difference between security of supply and competition for supply?

I do not know the definitive answer to these questions but do believe in the further development of a NW European gas market. With this conviction, APX entered the UK gas market in 1993 and launched new gas exchanges at Zeebrugge and TTF earlier this year. APX is dedicated to progress – will you join us?

We hope that you continue to enjoy reading *Energy Viewpoints* – please send your feedback to us at **apx@apxgroup.com**.

Bert den Ouden
CEO

LNG – Prospects for the Future

The prospect that LNG could become a major global energy source is one of the most keenly debated issues in the sector. This was reflected in this quarter's survey, conducted by ***Moffatt Associates***, which produced a wide range of views from panel members, and although there is a general consensus that LNG will grow in importance over the next few years, it is still not clear how much it will contribute towards Europe's energy portfolio in the future.

In 2004, LNG supplied 9% of Europe's gas demand, while LNG trade to Europe rose by 5.4% on the previous year, a smaller increase than in 2002/2003.
Table 1 shows total imports of LNG to Europe in 2004 by country.

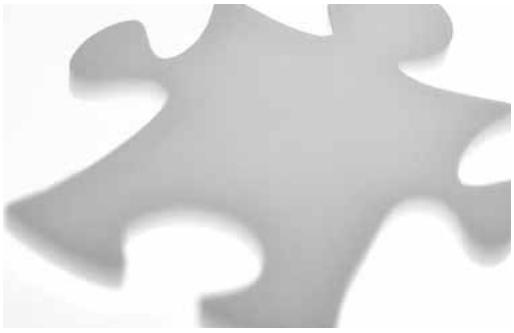
Table 1 Trade movements 2004 – LNG (Bcm)

Importing countries	Exporting countries							Total imports
	Oman	Qatar	U.A.E.	Algeria	Libya	Nigeria	Malaysia	
Belgium				2.85				**2.85**
France	0.08			6.72		0.83		**7.63**
Greece				0.55				**0.55**
Italy				2.10		3.80		**5.90**
Portugal						1.31		**1.31**
Spain	1.20	3.91	0.20	6.58	0.63	4.81	0.81	**17.51**

NB: Flows are on a contractual basis and may not correspond to physical gas flows in all cases.

Panel members agreed that the current contribution of LNG to the European energy market is relatively small, but growing. A number of new terminals are planned and LNG use is expected to rise slightly within the next 2 years, and more substantially in 5 years and beyond. At present, it is estimated that by 2015 LNG will supply 12% of EU gas demand, but this figure could rise.

The growing importance of gas for European power generation is one of the driving forces behind the greater use of LNG as a supply source, as is the increased importance of security of supply. Environmental concerns are also driving interest in LNG, while technological improvements are helping to reduce the costs of delivering LNG.



UK identified as key market for future

Respondents agree that Belgium, France, Italy, Spain and the UK were the European countries most likely to be most affected by LNG in the future. As the table above shows, Spain is currently the main market for LNG, followed by France. After Japan and South Korea, Spain is the third largest importer of LNG in the world, and LNG represents over 60% of total gas demand. Spanish gas demand is growing substantially: in 2004 it rose by 20%.

The country's gas pipeline infrastructure is still relatively limited, with only restricted potential for natural gas imports, and for this reason LNG has become increasingly important in meeting demand. Although Spain imports competitively-priced piped gas through the GME pipeline from North Africa, and the Medgaz project now under construction will increase capacity when it is completed from 2007 onwards, LNG shipments are expected to continue to play a crucial role in meeting demand.

Spain has four of the EU-15's 10 LNG terminals and more are planned, with Spanish power companies keen to invest in new terminals as part of their strategy to expand gas-fired generation. The three largest electricity companies (Endesa, Iberdrola and Unión Fenosa) are building a terminal near Valencia and will use the gas to feed their gas-fired power plants in the region. Iberdrola and Unión Fenosa are planning to build new power stations near the terminal, while Endesa and Unión Fenosa are involved in construction of another terminal in north-west Spain.

The rise in demand for gas as a power station feedstock is also leading some power companies to invest abroad in liquefaction export terminals, for example Unión Fenosa is investing in the Damietta LNG export terminal in Egypt, in collaboration with the Italian oil and gas group ENI.

There are also plans for new terminals in Belgium, France, Italy, Portugal and the UK. France, which has two LNG terminals, and Italy, which has one, both use LNG to supplement piped gas supplies, and with demand for gas also growing in these markets, the importance of LNG will continue to rise.

Despite the existence of gas pipelines between southern Europe and North Africa, physically transporting gas on to France remains difficult because of a lack of infrastructure, with new cross-border pipelines not expected to be in place until about 2012. For this reason, France is expected to continue to import nearly all its Algerian gas in LNG form. LNG covers about 25% of gas demand, and Gaz de France is constructing a new, offshore LNG terminal at Fos Cavaou, the site of an existing terminal on the Mediterranean coast. ExxonMobil has also proposed building an LNG import terminal near Fos Cavaou by 2009.

Panel members identified the UK as a key target market for LNG, and the country has probably the most ambitious expansion plans for LNG in Europe. Increasing gas demand, largely for power generation, has combined with the gradual decline in North Sea gas to encourage renewed interest in LNG.

The UK stopped importing LNG in the 1980s when its own indigenous gas fields more than covered UK demand. However, on July 4 2005 the first LNG imports for 20 years docked at a new terminal on the Isle of Grain near London, heralding the start of a new era. The shipment came from Algeria, and BP and the Algerian gas company Sonatrach own all the import capacity in the first phase of the terminal. Centrica has bought some of the expansion capacity for the terminal in the second phase and is talking to producers in the Middle East and Africa.

Two more import terminals will be built by 2007 at Milford Haven in South Wales, importing gas from countries such as Egypt and Qatar. In all, LNG could cover about 20-25% of the UK's gas demand by 2008-2009, and as much as 30-40% by 2012 as North Sea production continues to decline.

Substantial investment needed in LNG infrastructure

Panel members gave a wide range of responses to the question of what factors are inhibiting the growth of LNG in Europe. The high costs of LNG transportation (it is more difficult to move gas than to move oil), and the need to improve infrastructure were amongst the most frequently expressed reasons.

Over the period to 2010, it is estimated that the industry will be required to invest about 36 billion in LNG liquefaction, shipping and terminal receiving facilities to sustain LNG growth to the European market. Another 10-20 new terminal projects may be needed to keep up with the growth in demand for LNG. However, with different players becoming involved in the LNG market and gas demand increasing across Europe, there should be no shortage of investors in the future.

Regulation, and access to TPA, are also seen as possible obstacles to the growth of LNG. LNG faces competition from the incumbent gas utilities who own and operate the gas pipelines that take gas from the port to the consumers and who want to control all aspects of the gas chain. Indeed, some of these utilities are also investing in LNG projects to try to acquire this overall control. A number of LNG and piped gas projects are scheduled to be completed in 2008, and both will be chasing the same market. However, piped gas projects will still outnumber LNG schemes.

Competition from other sources

One key question is whether LNG will be able to compete against other major sources of piped gas. As mentioned, when LNG is landed it enters a competitive market, at least in some countries, and the more restrictive contract terms of current LNG supplies make it difficult for it to compete with piped gas. However, LNG supplies are flexible, and can be diverted from one destination to another if necessary. In addition, with supplies of piped gas increasingly transported longer distances within Europe, the threat of disruption to pipelines is a growing concern. LNG could therefore have intrinsic advantages in terms of security of supply, a growing concern for the EU.

LNG may also become more competitive in the future. The marginal unit costs of the LNG supply chain are falling and the number of supply sources are rising. The Middle East is the fastest growing source of supply, with Qatar in particular aggressively developing its LNG exports. Abu Dhabi and Oman are stepping up their supplies, while Algeria and Nigeria, already large producers of LNG, will soon be joined by Egypt.

With such a variety of supply sources, and the EU increasingly dependent on imports to meet gas demand, LNG would seem well placed to take off as a major energy source. For a long time it mainly supplied countries such as Japan which could not access natural gas supplies. Now, however, with gas increasingly important for power generation in Europe and elsewhere, and environmental concerns supporting the use of gas instead of coal and oil, the need for additional, more flexible gas resources is growing. By 2010, Europe and the USA are expected to have overtaken the Asia Pacific region as the main consumers of LNG, with Europe seeing the most dramatic increase in terms of gas imports with its dependency growing from 36% in 2001 to 65% in 2020.

Major international oil companies are investing in new tankers and infrastructure to prepare for the expected boom in LNG business. Traditionally, LNG projects in Europe and Asia have been carried out by a consortium of producers and consumers sharing the profitability and the risk across the value chain in the form of long-term contracts.

Even if significant amounts of LNG continue to be supplied on long-term contracts, however, contracts are likely to become increasingly flexible. In addition, the recent rise in oil prices appears to have encouraged some oil companies to build terminals without gas contracts to back these up, and there seems to be a greater willingness to carry over-capacity if necessary.

There was broad agreement amongst panel members that the current LNG infrastructure in Europe is not adequate to cope with medium-term needs, and that further investment is needed. However this is expensive, and environmental opposition to construction of terminals is also a significant factor. In Italy, for example, plans to build a new LNG terminal at Brindisi have resulted in strong protests. After continuing delays to the project, the power company ENEL has pulled out completely, selling its 50% share to its partner, BG.

Respondents found it difficult to predict how much LNG destined for Europe will be diverted to the US and Asia over the next 5 years. There was a consensus that there will be diversions, but the amount will depend on demand, prices, and the number of import terminals.

Arbitrage opportunities increasing

A global LNG market could develop in the same way as a global oil market. Arbitrage opportunities between the Atlantic Basin and the Pacific are emerging as demand for LNG increases, particularly in the USA, and in recent years there has been diversion of LNG supplies away from countries as a result of price differences. For example shipments from Trinidad or Nigeria have been diverted either to the USA or Spain, depending on price.

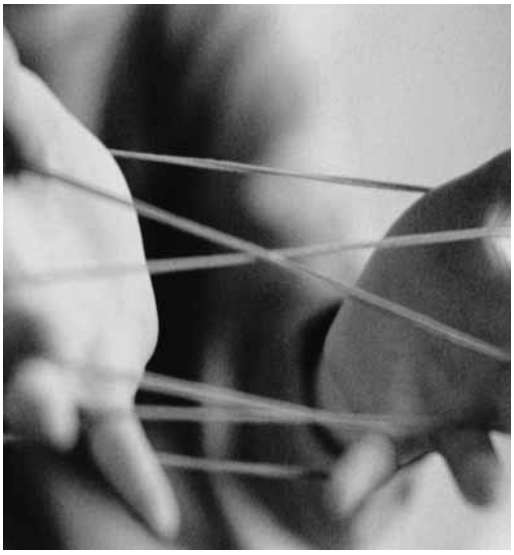
The growing number of supply sources, together with a relaxation of the previous rigid industry structure, have enabled price signals to be transmitted between previously isolated regional gas systems, and this trend is likely to continue. However, diversion also depends on excess tanker and terminal capacity being available at the time.

Summary

Although LNG is becoming increasingly popular in Europe, higher demand in the USA, where traditional gas supply sources are declining, could put pressure on supplies to European markets. The UK and other European markets may have to compete increasingly with the US and the Asia Pacific region for many of the same sources.

The popularity of gas-fired generation and the flexibility of LNG have combined to make this fuel increasingly attractive in Europe. However, significant investment is needed to improve the infrastructure to cope with higher deliveries of LNG, and there are uncertainties about how competitive LNG will be compared to piped gas. Despite these qualifications, however, the importance of LNG for Europe's energy portfolio is likely to grow, especially in the medium-term. ■

References: Cedigaz, BP, EuroStat, European Commission.



Supplying Growing European Gas Demand

Over the next 10 years European demand for gas is expected to increase by 37%. Brian Little of Energy Markets Ltd examines the key factors impacting on supply and demand and concludes that imports will rise significantly and LNG will play a critical role in meeting demand.

Setting the scene

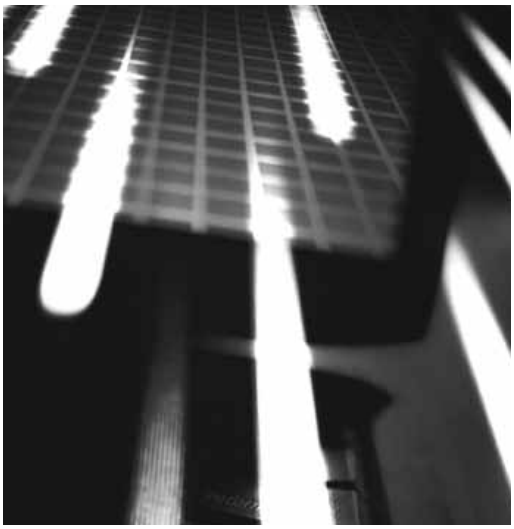
Over the next ten years gas demand in Europe[1] is expected to increase by 37% from 537 billion cubic metres (bcm) to 738 bcm. At the same time European gas production will barely maintain its current level, with increased Norwegian output offset by declining production elsewhere – particularly in the UK. The combined result of these two trends is that gas imports will need to more than double over the decade ahead from 205 bcm in 2003 to 469 bcm in 2015.

Russia accounted for almost 63% of gas imported into Europe in 2003, and Algeria accounted for 27% including both pipeline and Liquefied Natural Gas (LNG) shipments. The remaining 10% was supplied by LNG from a diverse range of exporters including Nigeria, Libya, Malaysia, Oman, Qatar, Trinidad and Tobago and UAE. These figures exclude imports and exports between European countries including, in particular imports from Norway, the Netherlands, the UK and Germany.

[1]By Europe we mean not just the EU but also Norway (an important gas producer), as well as Turkey, Romania and Bulgaria which are important gas markets. FSU countries are not included.

There is considerable uncertainty over how the growing import requirement may be met. There is certainly no shortage of available gas reserves in Russia, North Africa, the Middle East and Central Asia which could be made available to Europe. Exploiting these reserves to Europe's benefit will involve enormous investment in both production and transport capacity. Despite the huge sums involved, there are a great many pipeline and LNG projects already in progress and others are at the planning stage.

Energy Markets Limited has developed an integrated model of the European gas market and infrastructure in order to assist clients to investigate the impact of a wide range of scenarios for future gas demand and supply throughout Europe.



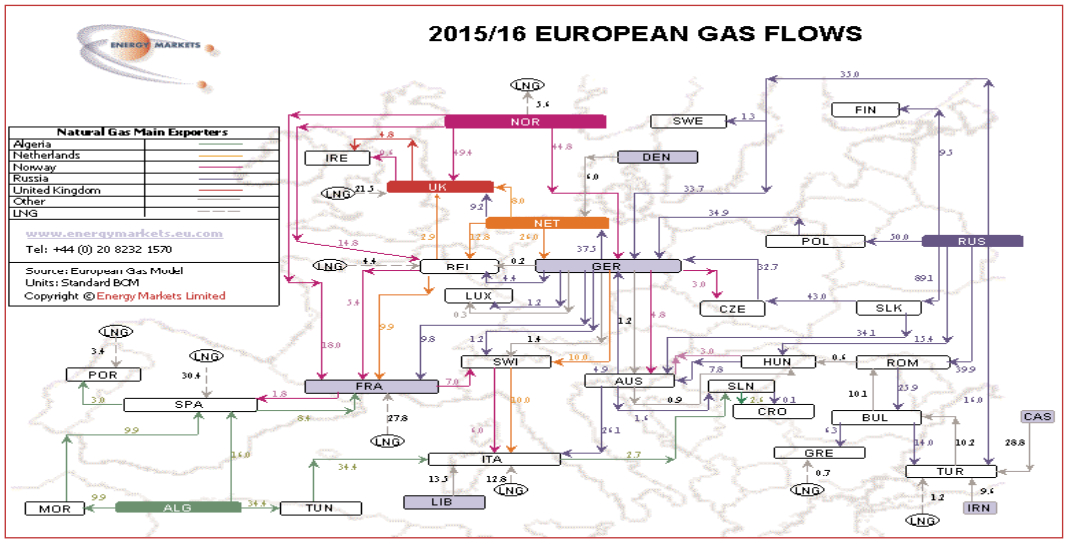


Figure 1

The diagram, which was produced using Energy Markets Limited's European Gas Model, shows one such scenario for how Europe may be supplied with gas in 2015/16[2]. The map shows projected flows from the major exporting countries to 25 gas consuming countries in Europe. Also shown is the route taken by the gas as it travels through transit countries before reaching its final destination. The map is colour coded so that for example Russian supplies are shown in dark blue. LNG imports are shown for each country where relevant.

We expect that imports from Russia and Algeria will increase in the next ten years in absolute terms but the dominance of these two sources will be reduced as Europe seeks a more diversified import portfolio. Our European Gas Model shows that Russian supplies could account for 54% of imports in 2015/16 and Algeria could account for 17%. The combined share of imports supplied by Algeria and Russia is reduced from 90% in 2003 to 71% in 2015/16.

New pipeline supplies are expected from Libya, Iran and the Former Soviet Union countries in the Caspian Sea area (Turkmenistan, Azerbaijan, Kazakhstan and Uzbekistan). Supplies from these areas could amount to 17% of total imports. LNG is also expected to expand to represent about 14% of imports by 2015/16.

The role of LNG

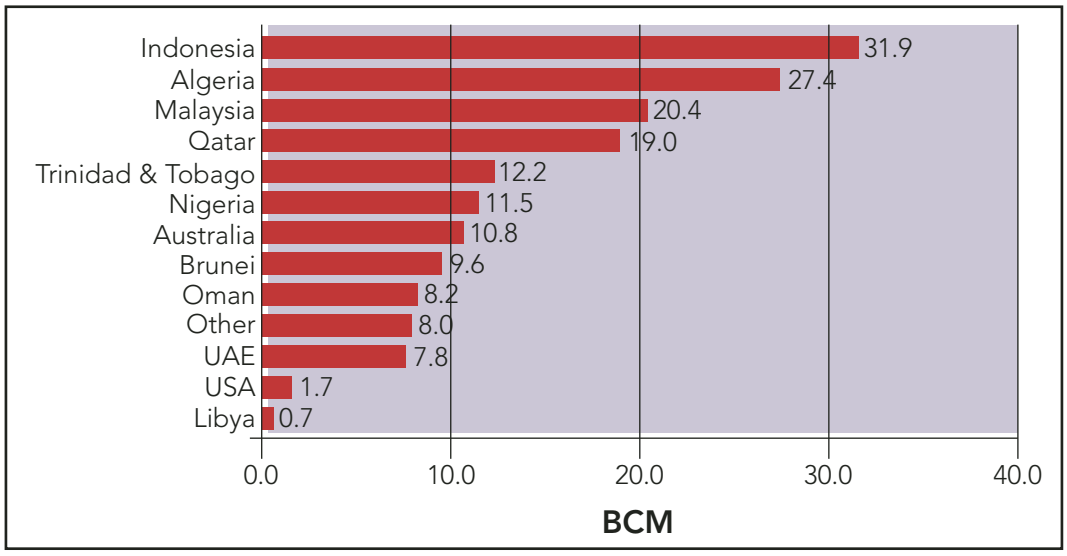
In the remainder of the article we focus on the prospects for gas supplies in the form of LNG.

LNG will play an increasingly important role in the supply mix with new or expanded import facilities in Spain, UK, Italy and France. Europe will have its first LNG export facility in Norway supplying gas to the USA as well as to Spain.

The Global LNG market is smaller and much more diversified than the pipeline supply area. Total World trade in LNG amounted to 169 BCM in 2003 compared with 613 BCM for pipeline exports. Twelve countries exported LNG in 2003 (see chart). The largest exporter was Indonesia with 31.9 BCM followed by Algeria with 27.4 BCM, Qatar (19 BCM) and Trinidad and Tobago (12.3 bcm).

[2]The European Gas Model produces outputs in gas years which run from October to September.

Figure 2 – World LNG Exports 2003



Source: IEA

Algeria was by far the biggest source of LNG for the European market in 2003, amounting to 65% of the total (see Table).

Table 2 – LNG Imports to Europe in 2003 by Origin

	Algeria	Nigeria	Qatar	Other	Total
Belgium	3.4				3.4
France	9				9
Greece	0.6				0.6
Italy	2.1	4.6			6.7
Portugal		0.6			0.6
Spain	7.1	3.9	1.9	1.8	14.7
Turkey	3.5	1			4.5
Total	25.7	10.1	1.9	1.8	39.5

Table 3 – European LNG import capacity

Total LNG import capacity is expected to increase from 70.8 bcm in 2003 to 182.5 bcm in 2015. This assumes plant capacity additions as shown in the table.

Country	Plant	Capacity 2003 bcm	Capacity 2013/4 (bcm)
Belgium	Zeebrugge	5.3	10.0
France	Fos Sur Mer	5.9	13.0
France	Montoir De Bretagne	11.4	11.4
France	Fos Cavou		7.1
Greece	Revithoussa	2.2	2.2
Italy	Brindisi		8.3
Italy	Marina Di Rovigo		6.0
Italy	LA Spezia (Panigaglia)	3.5	3.5
Italy	Rosignario		3.0
Italy	Gioia Tauro		7.0
Italy	Monfalcone		4.0
Portugal	Sines	5.8	5.8
Spain	Barcelona	11.1	11.1
Spain	Bilbao	6.3	10.5
Spain	Cartagena	9.1	9.1
Spain	Castellon		9.2
Spain	Ferrol		3.9
Spain	Huelva	4.1	5.3
Spain	Puerto Sagunto,Valencia		10.6
Turkey	Aliaga Izmir	6.1	6.21
Turkey	Marmara		5.5
UK	Isle of Grain		13.9
UK	Dragon LNG		6.0
UK	South Hook		9.9
Total Capacity		70.8	182.51

LNG spot market

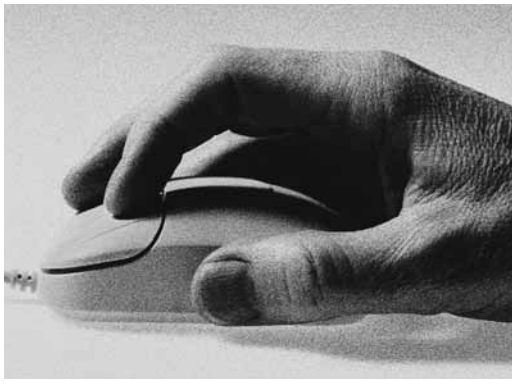
LNG spot and swap transactions amounted to about 7.6 BCM in 2002, or 7.6% of total LNG trade. The trend has been growing fairly rapidly in recent years. In 1997 spot trade was around 1.6 BCM or only 1.5% of total LNG trade. Nevertheless, most observers believe that long term contracts will continue to be the mainstay of the LNG market for many years to come and spot trading is not likely to exceed 15-30% of total LNG trade.

Large scale trading of LNG on the scale of crude oil, with markets in derivatives as well as physical commodity is not seen as very likely in the industry.

The factors which have led to increased spot trading in recent years fall into two groups. Firstly short term contracts, swaps and spot deals have emerged in response to unexpected changes in either the supply or demand side of the market.

For example:

- The Asian financial crisis in 1997/8 which caused supply surpluses in the Middle East.
- The temporary shut down of Arun liquefaction plant in Indonesia in 2001 resulted in production being replaced on short term contracts from other Asian sources.
- In 2002 the delay in bringing the Dabhol plant on stream in India meant shipments intended for Dabhol became available for spot sales.
- The shut down of 17 nuclear power plants in Japan in 2003 led to a surge in demand for LNG for gas-fired power plant.
- Some countries, including Korea and Spain in particular, have shifted from importing LNG as base load towards using it for seasonal load, by buying spot cargoes in winter.



The second driver of spot trade has been the re-emergence of the US LNG market, in response to high prices, and the creation of arbitrage opportunities as a consequence. In 2002, Middle East and Algerian cargoes destined for USA were diverted to Europe where prices were higher and in 2003 that situation was reversed with cargoes diverted from Europe to USA.

Last winter, Spanish LNG buyers, including Union Fenosa complain that they are caught between Henry hub price and regulated tariffs in Spain. The going rate for a spot cargo of LNG is the Henry Hub price less $1/mmbtu for transport and non-delivery costs. This makes the LNG more expensive than the regulated tariff rate of $4/mmbtu.

A number of companies are building up assets on both sides of the Atlantic to take advantage of the arbitrage opportunities:

- Tractabel owns Cabot LNG North America as well as the Zeebrugge terminal in Belgium. Tractabel is also a partner in Atlantic LNG (Trinidad and Tobago) and is building a regasification terminal in the Bahamas.
- BG has LNG liquefaction assets in Egypt, Nigeria, Equatorial Guinea and Trinidad. It owns Lake Charles terminal in the USA and is involved in Brindisi in Italy and a new terminal project in the US (Keyspan LNG).
- Repsol is a partner in Atlantic LNG (Trinidad and Tobago) and a shareholder in Gas Natural which has LNG regasification facilities in Spain.

- Gaz de France and Sonatrach have a joint venture Med LNG and Gas which was set up specifically to market LNG on both sides of the Atlantic.

- Statoil has marketed LNG on both sides of the Atlantic from its Snohvit terminal in Norway and has bought long term entry capacity at the US Cove Point Terminal.

- BP is a partner in Atlantic LNG and in regasification terminals in Spain and Italy.

- Shell which is one the world's biggest LNG producers owns capacity at Cove Point and Elba Island regasification plants in USA and recently announced plans for a new plant in Italy.

For an LNG spot market to flourish requires spare capacity in infrastructure. Spare capacity at liquefaction plant often arises as a result of unforeseen circumstances such as the unexpected delay to import facilities. There is also often spare liquefaction capacity in the early years of a contract when contracted offtake volumes build-up less quickly than liquefaction plant capacity is built. In both cases these are temporary phenomena but with a continuous programme of new projects coming on stream this could create a ready supply of spare capacity.

Shipping capacity has been more of a bottleneck in recent years. In June 2003 only 6% of the shipping fleet could be allocated to spot trading. However, there has been a big increase in the LNG fleet in the last two years with 26 tanker deliveries. Several ships were built with no dedicated route in mind either by the companies building up a portfolio approach to LNG or purely speculatively to cash in on the arbitrage opportunities.

Furthermore, several older tankers are going to be freed from their current trade routes in coming years. These tankers have been fully depreciated and are therefore more profitable for use in the spot trade because only operating costs need to be considered.

Contract development

A more flexible approach to pricing is emerging in the LNG industry worldwide. European contracts are still predominantly linked to fuel oil and gas oil prices (apart from UK as mentioned above). However, European contracts are subject to renegotiation every three years and there are some signs of more flexible contract terms. In some countries other indices are starting to be included to reflect competition in the power sector. One example is the contract between Trinidad and Tobago and Gas Natural of Spain which includes the electricity pool price.

Cost reductions

The growing interest in LNG is partly due to decreasing costs driven by technological developments and economies of scale.

Technological development over the last four decades has led to a decrease in average unit capital cost from $550/tonne of capacity in the 1960s to $350/tonne in the 1970s and 1980s and $250/tonne in the late 1990s. For a project starting operation today, the price is slightly less than $200/tonne (all at today's prices).

Significant cost reductions have been made in the cost of tankers due to economies of scale. Tankers have increased from 40,000 cm for the first generation of ships to 140,000 cm. Costs for LNG tankers dropped significantly following the Asian financial crisis.

Summary

The global LNG business is smaller but much more diversified than the pipeline supply area. Spot trade in LNG has been growing fairly rapidly and accounted for 7.6% of all LNG trade in 2002. We expect spot trade to continue to grow as a result of spare capacity in infrastructure, more flexible contractual terms and a desire to benefit from arbitrage opportunities in the Atlantic Basin in particular. Spot trade is not expected to emulate the market for crude with a paper market as well as a physical market and we do not expect spot trade to exceed 15-30% of total LNG trade.

Contractual terms are changing. In the Far East LNG prices are becoming less strongly tied to oil prices, indexation is switching to gas spot prices in UK and USA, and in Europe power prices are beginning to be included in the basket. Contract terms are becoming more flexible with less rigid take or pay terms. Shipping capacity was a bottleneck until very recently but new tanker deliveries will add to the number of tankers available for spot trades.

LNG capital costs have been coming down markedly as a result of technological development and economies of scale. ■

For more information about the European Gas Model please contact Energy Markets Limited at Enquiries@Energymarkets.eu.com.

EU to Punish Restrictive Business Practices in LNG Contracts

Whilst the second European gas directive, adopted on June 26, 2003, seeks to provide freedom of choice of supplier for industrial and domestic gas customers, the European regulatory authorities are busy trying to bring down the remaining barriers to an effective liberalised energy market.

On an inter-regional scale, this means the end of clauses in gas contracts prohibiting buyers onselling gas outside their national territory. Here, Laura Guttuso, Associate at Herbert Smith, together with Jonathan Scott and Stephen Murray, Partners at Herbert Smith, assesses the resolve of the European Commission to end these arrangements, which has so far caused both pipeline and LNG contracts to be renegotiated.

European Union (EU) competition rules seek to overcome impediments to trade between Member States, be they structural – such as mergers which strengthen the dominant position of a former monopoly – or contractual, such as destination clauses. The approach of the European Commission (Commission) to destination clauses has been developed in a number of recent settlements with non-EU gas producers.

The Commission's regulatory attacks on destination clauses have to be seen in the context of a three-pronged liberalisation strategy, which aims to set in place a structure that is favourable to competition in the gas and electricity markets: by increasing supply competition; by ensuring effective access to energy networks; and by guaranteeing free consumer choice by challenging consumer lock-in.

An open model which efficiently allows for independent competitive offerings at various levels of the supply chain is in almost direct contrast to the traditional pattern of LNG project development, where nearly all buyers were either government monopolies or franchised utility companies. The traditional LNG market model was based on long-term sales contracts into defined markets, often of 20 years or more in duration.

In order to be able to successfully operate in this new liberalised environment, buyers and sellers are looking for new ways of sharing and absorbing risks to enhance the efficiency of the industry and achieve a satisfactory allocation of these risks. For the regulatory authorities, there is therefore an underlying tension between reconciling the perceived benefits of liberalisation with the need to guarantee security of supply for the EU.

Destination clauses are clauses in long-term commodity supply contracts which have the effect of forbidding wholesalers from re-selling the commodity outside the countries where they are established, thereby guaranteeing the seller a form of protection. This practice helps to maintain price differentials across different national markets and for this reason destination clauses have been criticised by the Commission as constituting market partitioning devices.

Destination clauses can take various shapes and forms and the restriction need not be as explicit as an outright resale ban. Anything which has the effect of discouraging buyers from selling LNG or gas to customers in other countries in the EU may be considered an implicit territorial restriction.

For example, profit-splitting mechanisms are clauses obliging the buyer to pass over to the producer a share of the profits made when reselling the gas across borders.

Use restrictions prevent the buyer from using the gas for purposes other than those agreed upon, whereas consent clauses oblige one party to obtain prior consent from the other when selling gas to third parties. In the view of the Commission, all these clauses can be similar to express destination clauses in terms of their effects and are therefore considered to belong in the same overall category of territorial sales restrictions. The Commission is concerned by the effect of the clause, not its form.

In the case of the supply of gas from LNG projects, the Commission has been investigating for some time suspected territorial restrictions in gas supply contracts between non-EU producers and European companies. The Nigeria LNG (NLNG) investigation provides a useful illustration of these principles and demonstrates how the Commission is showing an increased interest in imports of gas sourced from LNG projects.

One of the many European contracts entered into by NLNG contained a territorial sales restriction, which prevented the customer, in this case the Italian utility company ENEL, from re-selling the gas outside Italy. In the discussions and subsequent settlement with the Commission, NLNG agreed in October 2002 to delete the destination clause from its contract with ENEL and also undertook not to introduce territorial restriction clauses or use restrictions into its future supply contracts. It further confirmed that none of its existing gas supply contracts contained profit-splitting mechanisms affecting the EU markets and that it would not introduce these in future contracts. ▶

The Commission has also been looking into gas supply contracts concluded between Algeria's Sonatrach and its principal European customers. Sonatrach recently undertook to discuss modifications to its existing contracts with European customers and to submit revised supply contracts.

Recent cases involving Gaz de France (GdF) showed that the Commission intends to continue to treat destination restrictions and other anticompetitive clauses very seriously. On October 27, 2004 it confirmed that territorial restriction clauses contained in two contracts, between GdF and ENI and GdF and ENEL respectively, infringe Article 81 of the Treaty.

The GdF-ENI contract concerned the transportation of gas purchased by ENI from GdF in northern Europe. GdF transports the gas across French territory to the border with Switzerland and the contract contained a clause obliging ENI to market the gas exclusively "downstream of the redelivery point" i.e. after leaving France.

The GdF-ENEL contract concerned the swap of LNG purchased by ENEL in Nigeria. The offending clause required ENEL to use the gas only in Italy.

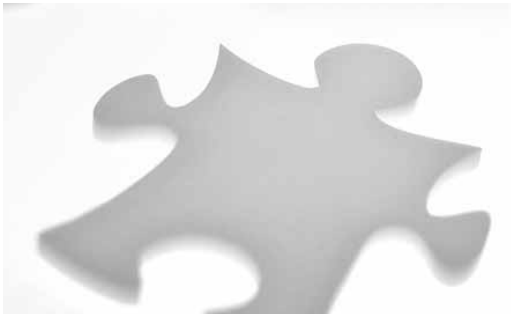
Although the parties had already terminated the infringements, the Commission thought it useful nevertheless to confirm that the two clauses as originally drafted restricted the territory in which the parties could use the gas and were designed to partition national markets: They were depriving French gas consumers of the benefit of obtaining supplies from ENEL and ENI.

The Commission made it clear that it wanted to clarify the law for the benefit of all companies operating in the sector. It expressly warned that if it should find restrictions of the same type in other gas contracts, it would show much less clemency.

If it finds that there has been an infringement of Article 81, the Commission may impose any remedies which are proportionate to the infringement committed and if necessary to bring it effectively to an end. The Commission would no doubt want to make sure that the offending clauses are deleted from the agreements and may seek an undertaking from the parties not to introduce any similar provisions in future contracts.

However, the Commission may also impose fines on companies that infringe competition law. The size of the fine is at the Commission's discretion and, in theory, it has the power to impose fines up to a maximum of 10% of the company's total turnover in the preceding year.

Given its recent very public warning in the GdF cases, we can assume that the Commission may well be prepared to issue fines in any future infringements.



Another by-product of the liberalisation process is that LNG receiving terminals are open to third party access (TPA), subject to exemptions being obtained by the project developers. LNG producers and project developers need therefore to be aware of both the evolving contractual requirements and the changing regulatory framework when engaging in LNG projects and trade directed towards European markets.

It is worth noting that the Office of Gas and Electricity Markets (Ofgem), the UK's regulator dealing with applications for TPA exemptions, has made it clear in its responses that it welcomes the project developers' assurances that the contractual arrangements negotiated will not contain any resale or destination restrictions.

It is still too early to determine how significant the impact of market liberalisation will be on the supply of gas and LNG in the EU. Former European Commissioner for Competition Policy, Mario Monti believes: "Liberalisation of the energy markets has become irreversible." It is also clear that liberalisation has, to a degree, altered the balance between risk and reward for buyers and sellers of gas.

However, there is also growing acceptance by the competition authorities of the need to maintain and support long-term contracts. Monti was keen to point out, when announcing the ENI/Gazprom settlement in October 2003, that the Commission's action on destination clauses "has no impact on the producer's ability to sell their gas in the Union under long-term contracts".

Looking ahead, the challenge for the regulators will be to strike the right balance between accommodating the main supply conditions that matter to the producing countries and the key market opening principles that are at the heart of the liberalisation programme. ■

Trends in European Energy Quarterly Survey (Summer 2005)

This edition of *Energy Viewpoints* includes the results of our latest quarterly survey researching trends in the European energy markets.

This regular survey is run in association with **EFET** (the European Federation of Energy Traders) and is conducted by **Moffatt Associates**, an independent market research and business strategy consultancy based in London.

The objectives of this research programme are to canvass views on trends in market prices and energy market developments such as liberalisation, and to monitor changes in market perceptions over time.

Results are based on the views of an established Panel of leading market participants and policy influencers. The survey itself consists of an online questionnaire and a follow-up in-depth telephone interview, and is conducted on a strictly confidential and non-attributable basis. Respondents were interviewed in June and July 2005.

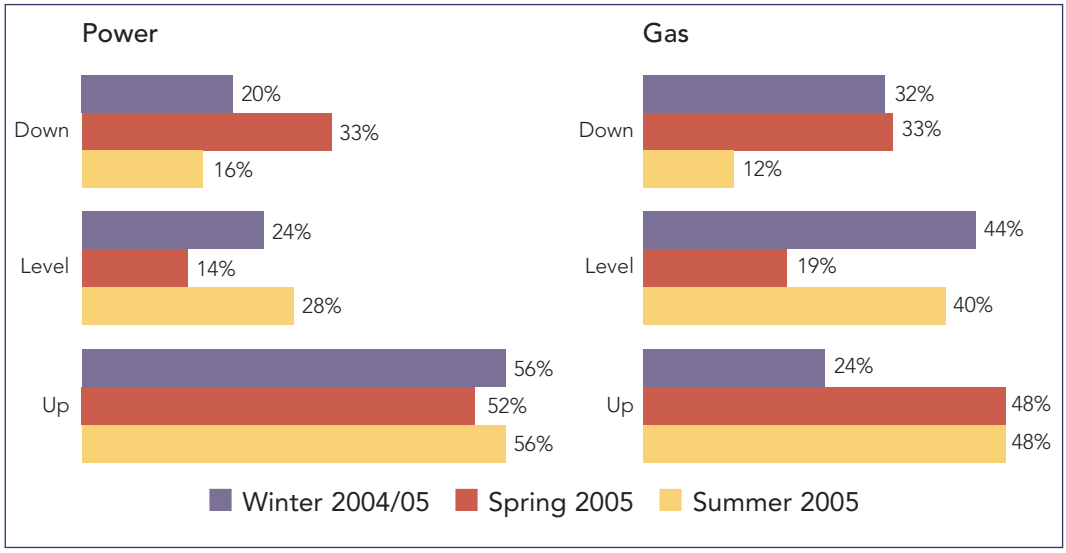
This quarter we received contributions from 25 senior market participants from 10 European countries (Austria, Belgium, France, Germany, Italy, the Netherlands, Norway, Spain, Switzerland and the UK).

The key findings are as follows:

Price Trends

- Expectations for power prices across Europe over the next year are that spot prices will continue to rise (according to 56% of respondents) rather than fall (just 16% of respondents), and that forward prices will continue to rise (said 48% of respondents). Likewise, the most popular opinion for European gas prices over the next year was that they would show an upward trend - both for spot (said 48%) but also for forwards (said 52%).

What will be the underlying trend for spot energy prices across Europe over the coming 12 months?



- Looking at **power prices** in the four regional markets covered in-depth by the survey, **Germany** was expected to have stable or slowly rising prices in the short-term but significant price increases over the next three years. Predictions for **Scandinavia** were for moderate increases in the short-term and relatively stable prices over the next three years. The **UK** was forecast to experience sharply rising power prices both in the short-term and the medium-term, whilst the **Netherlands** would witness moderate and then sharp increases.

- For **gas prices**, **Germany** was expected to have relatively stable prices over the next 6 months but would see moderate increases over the next three years. **Scandinavia** was said to be due stable gas prices in both the short- and the long-term, whilst opinion for the **UK** was very mixed regarding the next 6 months but ultimately gas prices would rise significantly over the longer term. The **Netherlands** would see rising gas prices in both the short-term and, more strongly, in the long-term.

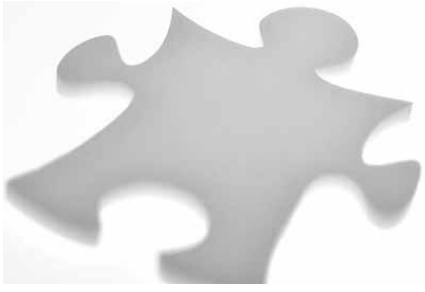
Market Developments

- A large number of **market developments** were expected throughout the next 6-12 months, many of which related to emissions trading and CO2 allowances. Specifically, key issues were what will be the ongoing impact of emissions, and of rising CO2 prices, and what plans will emerge for the second period of emissions trading (post-2008)? Other key issues will be the passing of the German energy law and the EU investigation into competition in the energy sector. Another overall market development will be the continuation of rising power and oil prices.

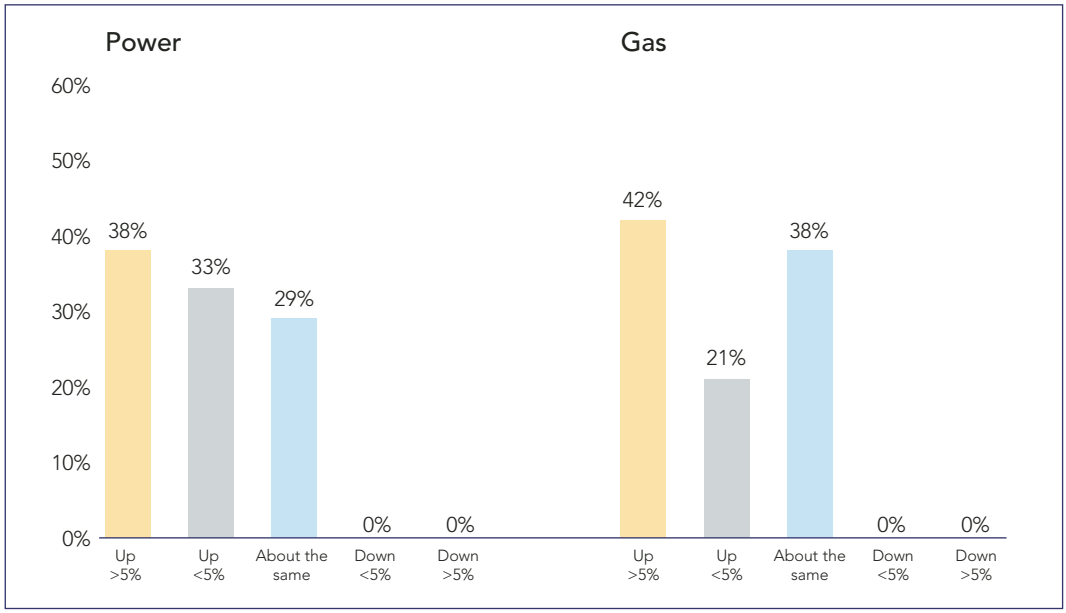
- Five factors exerting **pressure on energy prices** were analysed: environmental pressures and movements in fossil fuels were said to be strongly driving up prices over the next 5 years, whilst other factors - infrastructure developments, market liberalisation and industry consolidation - would have an ambiguous effect. Of these five factors, changes in fossil fuels continues to be regarded as having the most significant impact, followed by environmental pressures and market liberalisation.

- On average, respondents said that 33% of their company's traded volumes were **cleared**, a comparable figure to the 34% of last quarter.

- More people than last quarter expected **market trading activity** to increase for power over the next 6 months – a majority view which rose from 67% to 71% of respondents. There was also an increase in those expecting an increase in gas trading – up from 48% to 63%.



How much do you see market trading activity across Europe changing over the coming 6 months?



- As in the previous quarter, the most popular view on the pace of pan-European consolidation was that it continues to be steady in the gas sector (63%) but rising in power (50%).

- Energy market liberalisation will continue to be delayed by several constraints, especially political constraints and resistance by key incumbents, and to a lesser extent by infrastructural and legal constraints.

- National network access regimes continue to be widely seen as a constraint in European energy trading, although more so for gas (91%) than for power (73%).

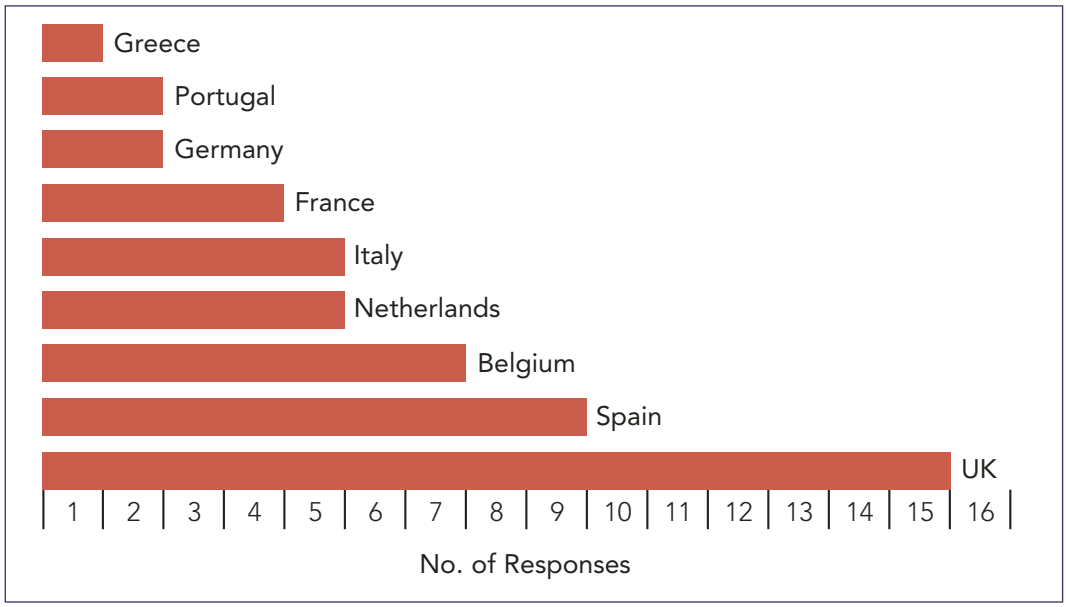
Special topic: LNG

Each quarter a different special topic is examined, with additional questions put to the Panel. Last quarter security of supply was looked at in-depth, and this time our focus is on **LNG (Liquefied Natural Gas)**.

- The current contribution of LNG to the European energy market was seen as relatively niche: it is currently of limited importance, except in a few countries (Spain, France, Belgium, Portugal and Italy were mentioned). However, it is growing in importance: "*it will take on a significantly greater role and there are significant investment plans for LNG.*" One respondent argued that LNG is "*hardly on the radar at the moment but will increase in the medium-term.*" Most respondents thought that it would take another 5 years for LNG to be an important contributor to the EU energy mix, and "*10-20 years*" before it has a "*significant impact.*"

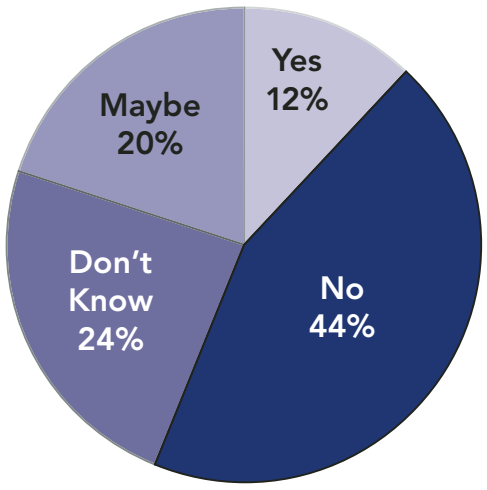
- The UK was most frequently mentioned as the market most likely to be affected by LNG, followed by Spain, Belgium, the Netherlands and Italy.

Which Country/Countries will be most affected by LNG?



- The main inhibitors of LNG growth were seen as a lack of infrastructure and future investment, limited transport capacity, high start-up costs, the "*regulatory environment*" and "*price uncertainty*". Whilst many commentators warned of investment shortages, one observer claimed that there was actually a risk of LNG infrastructure "*overbuild.*"

Is Planned LNG Infrastructure in Europe Adequate for Meeting Medium-Term Needs?



- There was widespread disagreement as to whether LNG is likely to be competitive when compared with other major sources of piped gas. About half of respondents asserted that "*it is not too competitive*" because "*it depends on distribution,*" or "*it is still relatively at the high end*" and will continue to be so in the medium-term. The remaining respondents thought LNG to be "*pretty competitive now*" or even "*very competitive*" already. To an extent, different pictures emerged from the different national markets, with one comment being that "*it is highly competitive in the UK, and less so in Germany. It is as competitive in the Dutch and Belgian markets.*" Most respondents strongly believed that in the longer term, LNG "*can be very competitive.*"

- Our Panel of experts also considered how much LNG destined for Europe is likely to be diverted to the US and Asia in the next 5 years, a question which proved very difficult to answer: "*it's almost impossible to say.*" Strong arguments were made, however, that it would "*depend on price spread evolution,*" i.e. "*it depends on prices, and it is likely to shift quite a lot year on year.*" It could also depend on "*the scenario for TPA in Europe*" and "*the number of import terminals.*" It was generally thought that "*there will be an increasing relationship between the US and Europe at the margin.*" ■

APX News

APX Group volumes continue steady performance in Q2

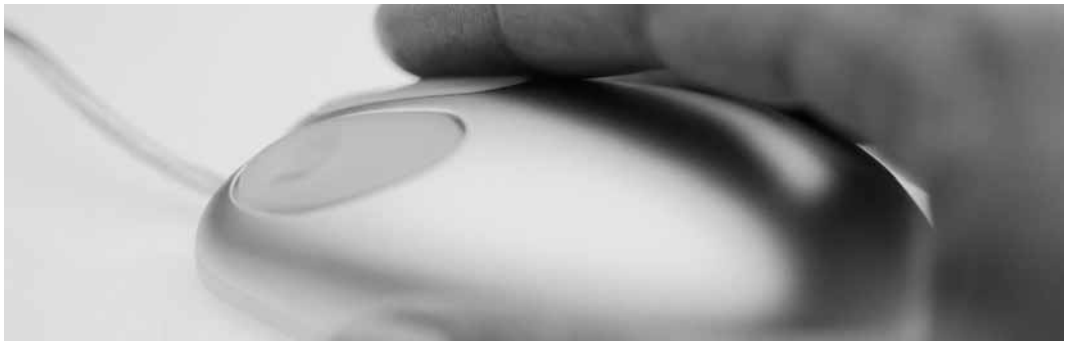
Q2 saw solid growth for the APX Group across the board after the impressive start in the first quarter. In the Netherlands, the APX Day Ahead market saw very strong June volumes, up by 39% on June 2004. The total for the quarter ending June 2005 was 3,631 GWh, up by 17% on the same quarter in 2004. UKPX's Spot and Prompt market June volumes grew by 31% from June 2004 (527 GWh) and the total for the second quarter was 2,155 GWh, up by 43% on the same quarter in 2004. The traded volume on APX Gas's On the day Commodity Market (OCM) for the second quarter 2005 totalled 31,046 GWh (1,059 million therms) up by 28% on the same quarter for the previous year.

APX power trading systems migrate to EuroLight™

APX will upgrade its trading platform from SpotLight to EuroLight™ for Dutch power, and is in the process of further integrating its power trading systems within the Group. Following the implementation of the EuroLight™ trading system in the UK last year, APX will now migrate its Dutch trading system, Spotlight, to EuroLight™ in Q4. This platform will allow APX to launch new and standardized products within the Group and tailor the system to members' needs. The new platform will support APX's current businesses (spot and prompt power) and enable APX to be much more responsive to market requirements through increased flexibility to develop and list new products in the future.

APX shareholder of Belgian Power Exchange, Belpex

Belpex, the Belgian power exchange has been incorporated on 7 July with a share capital of 3 million Euros. Belgium's electricity transmission grid operator Elia, the Dutch power exchange APX, French power exchange Powernext and the Dutch Transmission system operator TenneT have incorporated Belpex NV/SA, the operator of the Belgian power exchange Belpex. Elia has 70% of the shares, while APX, Powernext and TenneT each hold 10%.



APX News

Belpex will offer a day-ahead market for the trade in electricity, and trading is scheduled for the beginning of 2006. Belpex will be linked with a trilateral market coupling with existing exchanges: to improve the use of daily interconnection of the borders and to generate liquidity on the market, it will be coupled to the existing power exchanges APX and Powernext. This will be the first time that three energy markets are coupled in such a context, a move that APX sees as a significant step towards integrated power market in Europe. The Belpex website is www.belpex.be

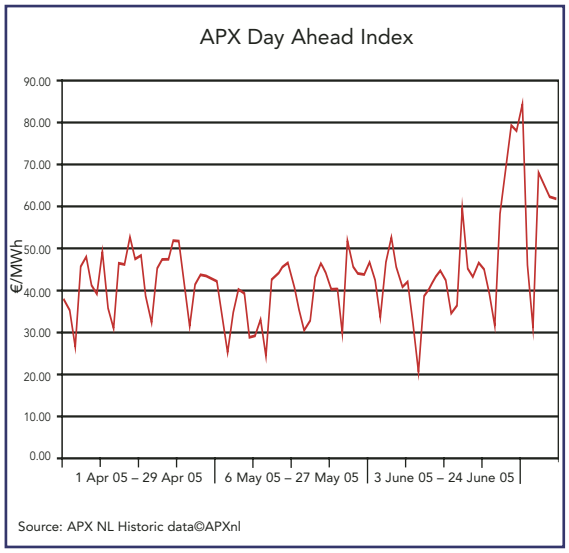
Integrated APX Group website

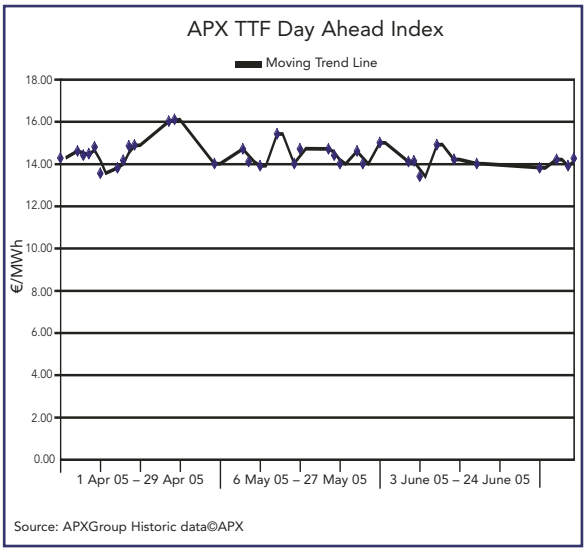
APX Group is in the process of integrating its four existing websites into one unified and redesigned website:-

www.apxgroup.com

which will go live in September. Through the new site APX will be providing up-to-date market data, news and weather. The site will also contain quick links for easier and quicker access to other useful information in the hope that this new user-friendly website will make your visit an easy and informative one. ■

APX Indices





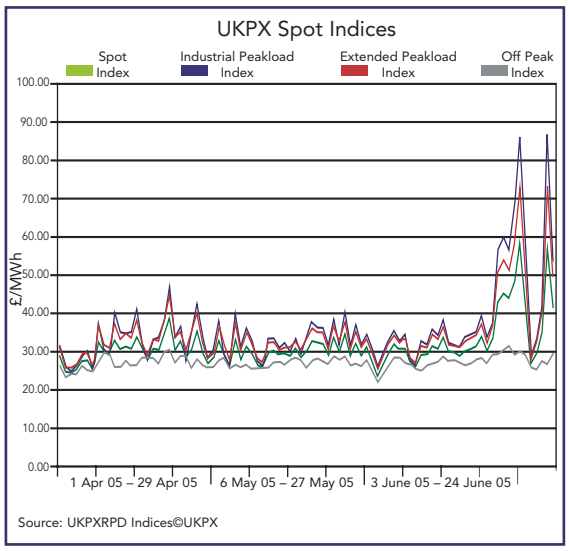
APX Day Ahead Average Prices

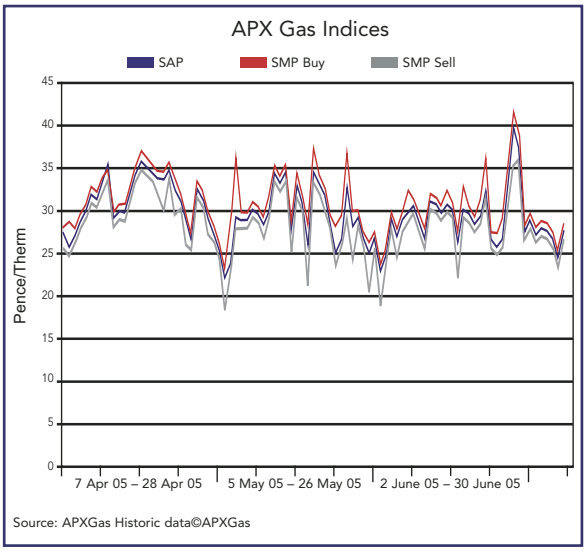
The APX published average prices are comprised of base load, off peak and peak load (07.00-23.00) prices based on the average price (in Euro/MWh) of Dutch power traded every day on APX for delivery the next day. Weekend prices are only comprised of base load prices and volumes.

APX TTF Day Ahead Index

The Index is a volume weighted average price (VWAP) of all day-ahead trades executed and matched on APX at the TTF gas hub between 06.00 and 18.00 CET (05.00 and 17.00 UK time) for delivery the next day.

APX Indices





UKPX Spot Indices

The UKPX Spot Indices are based on UKPX Reference Price Data (RPD) which is a half hourly price derived from the volume weighted average price of all Half Hour, Two Hour and Four Hour Block contracts traded within seven calendar days of market closure on UKPX.

Spot Price Index (base load) – The average of the RPD prices for all 48 half hour settlement periods.

Peak Load Index – The average of the RPD prices for half hour settlement periods between 07.00 – 19.00.

Extended Peak Load Index – The average of the RPD prices for half hour settlement periods between 07.00 - 23.00.

Off Peak Index – The average of the RPD prices for the Off Peak half hour settlement periods, between 23.00 - 07.00 and 19.00 - 23.00 in the same EFA day.

APX Gas UK Indices

SMPbuy is the highest price that gas was traded (buy or sell) by Transco in its Network Code balancing role for delivery that gas day. In the event of no Transco action, the SMPbuy is calculated by a default setting of 0.0287p/kWh (0.8411p/therm) from the prevailing SAP. SAP is the volume weighted average price of all trades on the OCM platform.

SMPsell is the lowest price that gas was traded (buy or sell) by Transco in its Network Code balancing role for delivery that gas day. In the event of no Transco action, the SMPsell is calculated by a default setting of -0.0324p/kWh (-0.9496p/therm) from the prevailing SAP.

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