apx Group

A VITAL LINK IN ENERGY TRADING

Energy Viewpoints

Developing Energy Markets

Issue 9 – Winter 2006/07

Developing Energy Markets

Contents

Physical Market Coupling will foster financial products

Dear Reader,

We always say at APX that we "bring markets together". Recently, we took an important step - with the start of Market Coupling between the Netherlands, Belgium and France. The first results look promising. Optimised power flows to the north mostly during peak hours. There is an even greater southerly flow during off-peak hours. This results in a large degree of price convergence between the three countries and multiplied amounts of cross-border trade and improved price building. This provides solid evidence that market coupling is superior to explicit auctions with regards to the day-ahead allocation of transmission capacity.

This success has been made possible only by the will to cooperate between all the partners, including the exchanges: Powernext, Belpex and APX; and Transmission System Operators: RTE, Elia and TenneT. A true collective effort from a long-term development that we initiated. On 14 February this year, the result was hailed by the European Commission as a very positive development for the internal market.

While this approach concentrates on the physical markets, it also provides new approaches to financial products, in several ways. Firstly, the improved price building will make the price indices of spot markets more attractive for financial hedging. Secondly, the day-ahead optimisation of cross-border flows creates greater demand for that hedging: both on the overall movement of the coupled prices, and the inter-region price differences. Finally, the improved efficiency of the day-ahead market and cross-border trade will make it much easier for parties to trade physically in many price areas with a reduced risk profile. Consequently, they are more confident and more likely to take positions in the financial markets as well.

Turning to this issue of *Energy Viewpoints* more specifically, our latest survey reveals that market participants are unanimous in their view that financial trading is providing much needed liquidity in both EU power and gas markets.

Tim Guinness, manager of the Investec Global Energy Fund, says the expansion in financial investment is due to the sharp rise in prices and the relatively poor performance of equity markets in recent years. Also in this issue, Paul Dawson of Barclays Capital argues that greater competition, transparency and liquidity in the EU physical energy market will attract even more participants from institutional investors and hedge funds.

Financial trading in the EU energy markets has become increasingly popular in recent months as energy prices have seen a rise, followed by a decrease. As competitive markets continue to develop in many European countries, new secondary or derivative markets are being established to manage financial risk associated with price volatility. After a fall in liquidity in 2005, European power trading grew strongly in 2006. Financial market interest in CO_2 trading is also continuing to expand. 2007 will be the last year of the current carbon trading period, and investors' interest is expected to be stimulated by speculation over the second period.

Our survey reveals that many market participants believe, the involvement of the exchanges in trading energy commodities is also important, if financial trading is to be encouraged. Strong exchanges such as APX have a key role to play in stimulating the market and helping to provide more liquidity. These could also provide more stability compared to the over-the-counter markets.

If you have any comments please contact me at *b.denouden@apxgroup.com*. Meanwhile, we'll keep bringing markets together. ■

Best regards
Bert den Ouden

Energy Market Volatility Fuelling Growth in Financial Investment

Increased price volatility has prompted a significant growth in financial trading in EU power and gas markets. Market participants consider that this influx of new investment is providing much-needed liquidity and has been the major driver behind the rapid growth in CO_2 trading. With more transparency and wider market liberalisation the expansion in financial trading is set to continue. These are some of the main conclusions of Moffatt Associates' latest European Energy Trends Survey.

Setting the Scene

Financial trading in the EU energy markets has become increasingly popular in recent months as energy prices have risen sharply. As competitive markets continue to develop in many European countries, and the original pools evolve into OTC bilateral trades and organised energy exchanges, new secondary or derivative markets are being established to manage financial risk associated with price volatility. Advances in IT have also managed to transform the speed of handling energy trading transactions, which has also helped to attract the financial markets into this area.

The phenomenon of financial trading in energy commodities initially took off in the United States, where hedge funds in particular began to take an interest in the energy markets. Energy markets have become attractive to financial investors for a number of reasons, including the need to diversify financial risk and the lack of attractive returns in other areas.

According to Lionel Greene, Manager, Structured Derivatives Trading at EDF Trading, "Financial investors are attracted to the EU energy markets as a means of satisfying the holy grail of diversification. Ever since Harry Markovitz came up with his modern portfolio theory, investors have been trying to use it to get their free lunch."

Hedge funds, banks and other alternative investors all regard energy as an attractive commodity to trade. The availability of cheap assets from a series of mergers and acquisitions in Europe which can be leveraged, or the opportunity to invest in future energy commodity prices, have both encouraged interest in financial trading in the energy market.

Daniel Pyc, Head of Trading at Diapason Commodities Management, believes that current growth in the financial trading markets is mainly coming from hedge funds, although there are many more actors, including index trackers like Diapason, who are active in the market.

Increasing Price Volatility

More actors means more volatility, and this volatility has heightened financial interest in energy markets. Indeed, most of our expert panel in this quarter's APX bulletin believe that it is volatility that has been driving the energy markets.

Fuelled by pension funds and institutional investors, the oil industry is attractive to hedge funds because the current price volatility provides generous returns for their investors. However, these investments are not without risk.

The impact of hedge funds on energy trading has been to increase liquidity and to facilitate the development of more sophisticated financial instruments and strategies for risk management. New hedge funds are even being set up specifically to trade in energy markets.

Role of Investment Banks

Banks are often involved on behalf of hedge funds, rather than acting for traditional funds such as pensions. It is these players, rather than the traditional utilities, which are driving financial trading forward at present.

The increased availability of experienced energy traders in the market following the collapse of Enron and the withdrawal from trading of a number of energy companies has also helped to stimulate interest from hedge funds seeking to capitalise on price volatility. Indeed, some of the newly created hedge funds focusing on energy have been set up by those who lost their jobs when Enron imploded a few years ago. However, there are some signs that future shortages of experienced energy traders could act to inhibit financial energy trading in the short term.

Product Focus

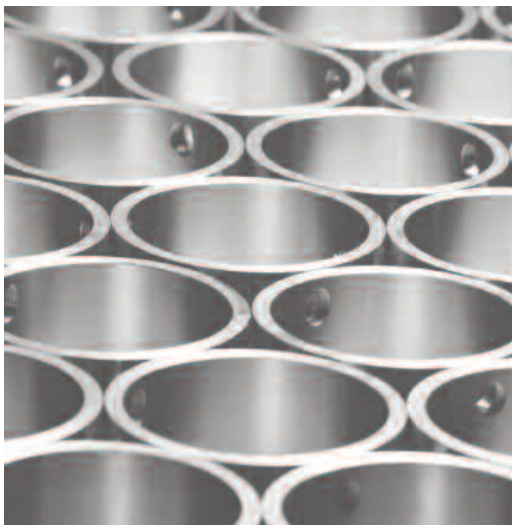
Our panel of experts were generally agreed that the most attractive energy markets for financial trading at present were UK gas, followed by German power and Nord Pool, because of the relatively high liquidity in these markets. However, the recent fall in gas prices could result in a decline in interest in the longer-term.

The bull market for oil and gas has been moving towards power, as electricity demand continues to rise and supply constraints grow. After a fall in liquidity in 2005, European power trading grew strongly in 2006, with German power in particular continuing to attract substantial interest from financial traders. The fact that electricity cannot be stored adds to the trading interest. The Nord Pool power market is also attracting interest, not only from local Scandinavian funds but also from US-based commodity trading funds.

However, the wild swings in natural gas prices in autumn 2006 caused problems for some hedge funds, which found themselves over-exposed to energy, and this experience could lead to hedge funds reducing their involvement in financial trading in the short term. In September 2006, for example, the hedge fund manager Amaranth Advisors suffered disastrous losses after its trades in the US natural gas markets went seriously wrong, and the group was forced to sell its energy trades to Citadel and JP Morgan to prevent forced liquidation.

As well as gas, oil and power, financial interest in coal trading is growing, as high gas prices stimulate renewed interest in the use of coal for power generation, despite continuing environmental concerns. There is also increasing interest in all forms of trading in green energy, including carbon and renewables. The potential in this area is huge, given the growing interest in clean energy.

Financial market interest in CO_2 trading is also continuing to expand. In particular, Phase Two compliance trading will start with the finalisation of the NAPs over the next few weeks and months, and a combination of these events could lead to a huge amount of trading on the CO_2 market this year.



2008 will mark the start of international emissions trading under the Kyoto Protocol, and this again should encourage a greater level of trading in carbon. At present, most of the trades in CO_2 are being carried out by the banks, with utilities so far not as active. As utilities gain more experience, however, this could change.

Role of Energy Exchanges

Many also believe the involvement of the exchanges in trading energy commodities is also important, if financial trading is to be encouraged. Strong exchanges such as APX Group, the EEX and Nord Pool have a key role to play in stimulating the market and helping to provide more liquidity. These could also provide more stability compared to the over-the-counter markets.

The question of whether financial trading has contributed towards the recent rise in energy prices received a mixed response from our expert panel. While some participants believed that it had played its part in the rise, others were more sceptical.

As to what can be done to encourage the growth in financial trading, our panel of experts were largely agreed that more liquidity and transparency are crucial if trading is to continue to grow in the energy markets. Conversely, a lack of liquidity and transparency is regarded as one of the main reasons why trading may be constrained in the future. Some of our panel also believed that regulatory uncertainty could inhibit trading in the future.

Lionel Greene of EDF Trading believes that one factor that could encourage growth ▶

would be customer education. "The more awareness there is of the potential, the greater the incentive to act. Other factors would be transparency: the more information is published, using the Nord Pool or the UK power market as an example, the less the fear of the unknown, and transmission mechanisms. The easier it is to move power and gas in between the different grids, the greater the liquidity and the more trading takes place."

Other market participants believe that there are no real obstacles to growth in financial trading in the markets at the moment. Daniel Pyc of Diapason, for example, believes that there are no particular obstacles to financial trading in energy at present, since people largely now have the information they need in order to trade.

Financial Trading Here to Stay

Looking to the future, it seems likely that with energy prices still relatively high and volatility continuing to be a feature of the markets, the growth that there has been in financial trading in the energy markets will continue. There will be more hedging of fuel such as gas, coal and oil, and also of environmental risks, mainly carbon but also other greenhouse gases.

With financial investors taking a much closer interest in the energy markets, new, more sophisticated risk management products will continue to emerge, and utilities will gradually become more active in this area, particularly in relation to environmental risk. Energy users, who have so far not been active players in the market, may also decide that the rewards of involvement in energy trading outweigh the potential risks.

What is clear is that financial interest in energy markets is here to stay. ■

MOFFATT ASSOCIATES
January 2007

Financial Trading: A boost to Energy Market Competition

Paul Dawson, director of commodities regulation at Barclays Capital, argues that greater competition, transparency and liquidity in EU physical energy market will attract even more participation from institutional investors and hedge funds.

Setting the Scene

This is a pivotal time for European electricity and gas markets as the European Commission, Governments and Regulators strive to ensure that energy supplies remain competitive and secure in the light of ever-tightening emissions constraints. On 10 January 2007 the Commission released details of a "third package" of legislation alongside the results of DG Competition's Sectoral Inquiry. The net result of these changes will be a major programme of "root-and-branch" reform to the EU's regulatory and policy framework and, potentially, significant changes in the underlying industry structure.

Alongside these reforms, recent years have seen massive growth in "financial" participation in the commodity markets as hedge funds, institutional investors and financial market participants have sought to diversify their portfolios and enhance their returns by focusing on commodities as an alternative "asset class" to the more traditional financial market instruments.

As we embark on fundamental reforms to the physical market, now is good time to consider what has driven increased financial participation in the commodity markets generally and, therefore, how best to harness the benefits of increased liquidity and efficient risk management that greater financial participation in the EU power, gas and emissions markets offers to bring.

The Global Trend in Commodities Investment

The last five years have seen billions of dollars flow into the commodity markets as investors seek to capitalise on the growth of commodity prices and diversify their portfolios away from more traditional assets. Pension funds are increasingly investing in the commodity sector, commodity-linked mutual funds have exploded in size and new commodity-linked products have shown significant growth **(as Charts 1 and 2 on the next page demonstrate).**

Chart 1: US Commodity Index Linked Mutual Funds – Total Assets Under Management

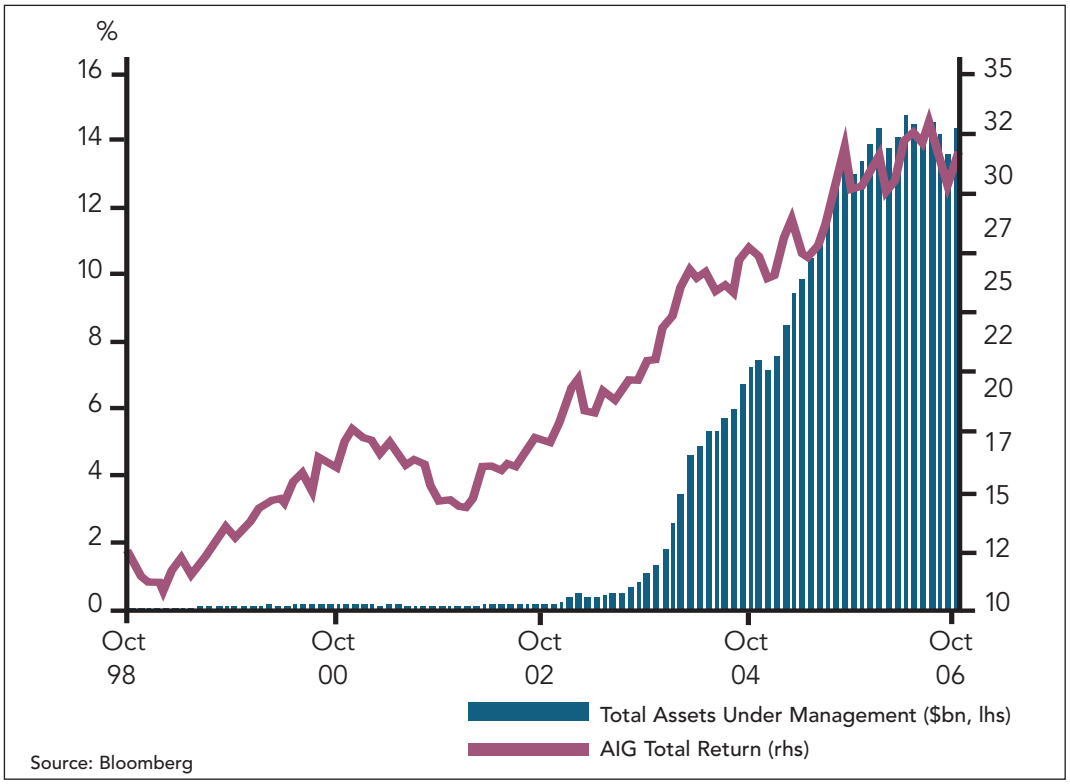
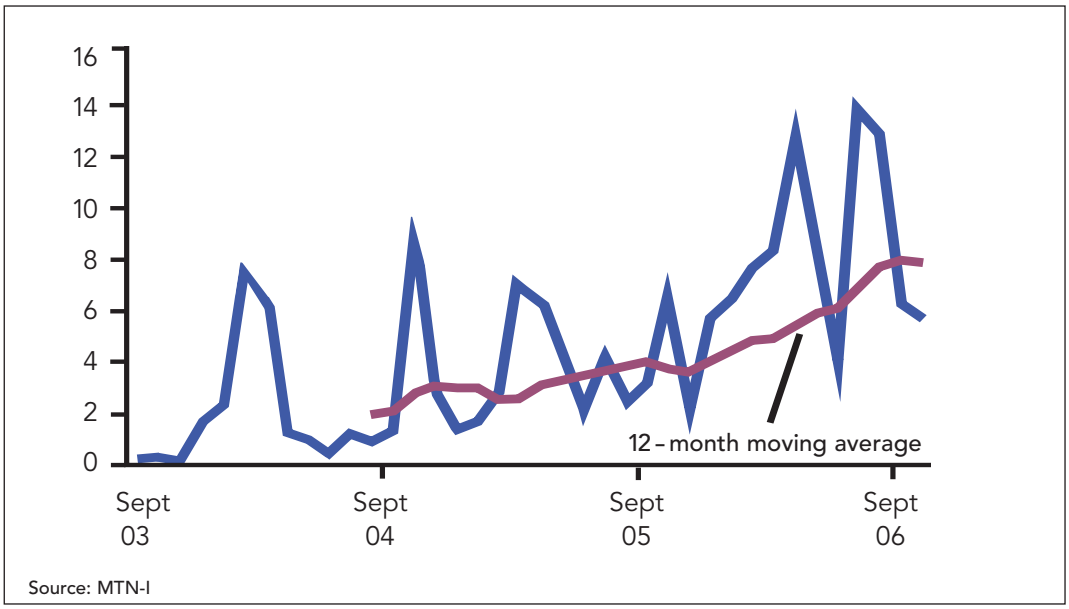


Chart 2: National Value of Commodity – Linked Medium Term Note Issuance ($mn)

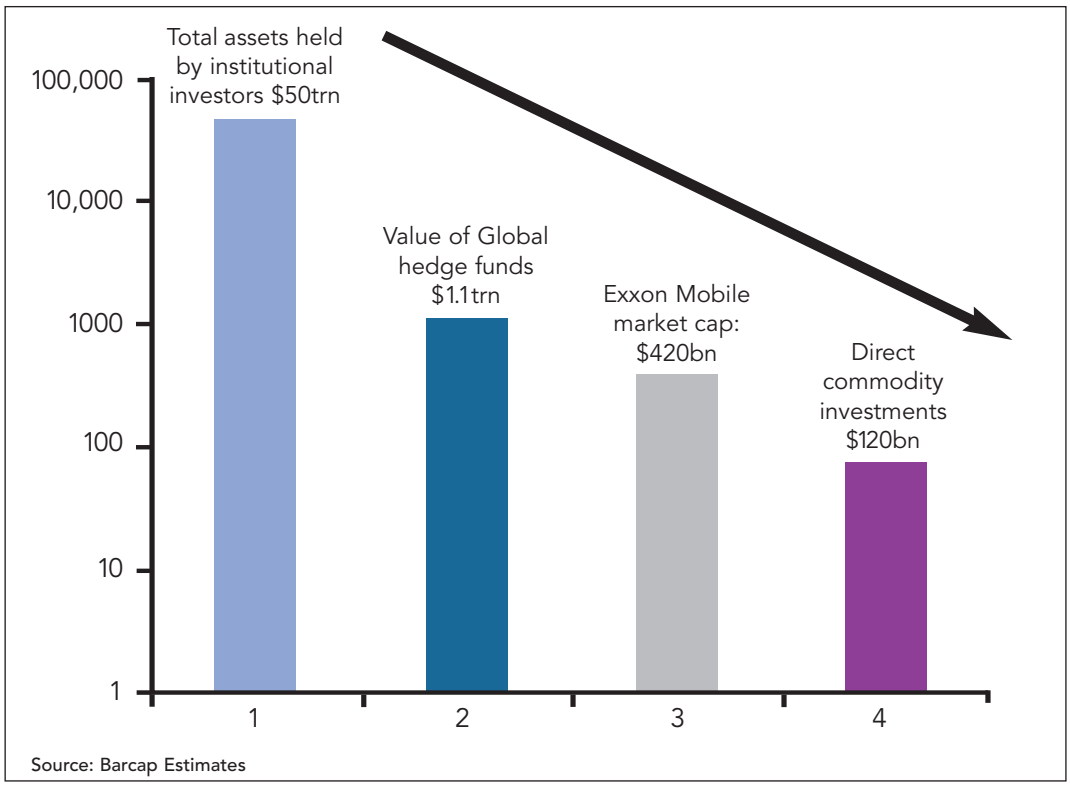


In turn, investments in commodity-based funds and instruments has driven greater direct participation in the underlying commodity markets as the providers of these instruments and other intermediaries seek to manage the corresponding exposures. At the more active end of the spectrum, there has also been expanding interest from institutional investors and hedge funds in taking positions and direct risk exposure to individual commodity markets. Despite the impressive recent growth, the expansion looks set to continue. As **Chart 3** shows, against several other metrics, investors remain relatively underinvested in commodities. Commodity investments representing less than one quarter of one per cent of the total assets held by institutional investors, one-tenth of the amount invested in hedge funds and around a quarter of the market capitalisation of Exxon Mobil.

Financial Participation in the EU Power and Gas Markets

Although the global expansion of financial trading in commodities has extended to the EU gas, power and emissions markets – with billions of Euros now at risk or invested in these markets – in relative terms they have been slow to take off. There are also significant differences in the relative degree of financial trading between these markets. For example, the emissions market has been particularly successful in attracting financial participation given the ability to trade a relatively simple product across the entire EU with few, if any, delivery complications and with the option of trading on established futures exchanges. These fundamentals – coupled with the interest generated by the market's potential for huge global expansion and the opportunities presented by investments in emissions reduction ▶

Chart 3: Relative Importance of Commodity Investement



Source: Barcap Estimates

credits, has drawn a diverse range of participants and investors into the sector.

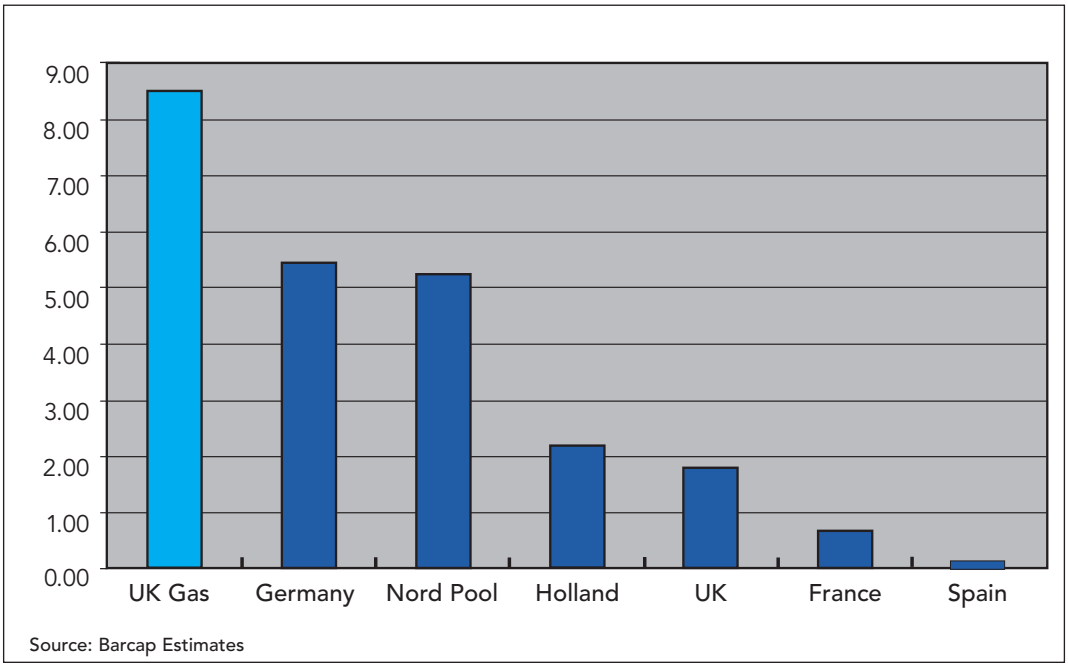
In comparison, interest in the energy sector has been more muted generally and interest has focused on German power, UK gas, Nord Pool and, to some extent UK power, with relatively little participation in other markets. To date, European power, gas and emissions markets are also yet to feature in the main global commodity indices that form the basis for much of the institutional investment in the commodities sector. The reasons for this relative lack of penetration for financial capital in the European energy markets – and the relative differences between these markets – are relatively unsurprising.

- **Lack of competition and maturity:** Most EU power and gas markets (outside of Nord Pool and the UK) are in their relative infancy and sufficiently competitive and liquid physical markets are yet to develop as a basis for significant financial trading.

- **Scale and liquidity:** in contrast to global metal, oil and agricultural markets, the lack of effective market integration and ineffective cross-border arrangements mean that EU power markets remain largely national in scope, which limits their scale, liquidity and the potential interest to financial participants. As **Chart 4 below** demonstrates, the relative liquidity of the underlying markets also goes a long way to explaining the relative penetration of financial trading into EU power and gas markets.

- **Reliable benchmark price:** financial participants require confidence in an index that is universally accepted, reliable and not subject to manipulation. Power exchanges in themselves are neither necessary ▶

Chart 4: Ratio of Traded Baseload Volumes to Load (July 05 – July 06)



Source: Barcap Estimates

nor sufficient to provide such a benchmark. The UK power and gas markets attract financial participation despite the absence of an auction price and although most other European power markets have transparent power exchange prices, concerns about residual local market power undermines confidence in the derivation of prices on many exchanges. Outside of the UK, the EU gas market also has insufficient competition, transparency or liquidity to derive any meaningful price benchmark for financial trading.

- **Transparency.** Most other commodity markets have significant transparency over the sources of production, the state of inventories/storage, consumption patterns etc. By contrast the EU power and gas markets are typically models of opacity and obfuscation (outside of the UK, Nord Pool and Spain) even though the level of detailed information required to understand the market fundamentals is even greater than in other markets (largely due to the externalities associated with network delivery and the non-storability of the product).

While exploring these drivers can help to explain the limited development of financial trading in EU energy markets to date, it also holds the key to accessing additional financial liquidity in the future. Increasing the scope for competition, the number of industry competitors, greater transparency over the supply and demand fundamentals and greater integration between markets will all be required to generate sufficient "mass" and confidence in traded prices as a reference for financial trading.

A Good or a Bad thing for the Market?

So far so good: not only is there huge potential for the EU power and gas markets to access the growing financial funds flowing into the commodity markets generally, but the Commission and EU energy regulators are already on track to improve competition, integration, transparency and wholesale market liquidity which will provide the base for greater financial participation. However, the growth in global commodity investment has also generated concern that financial trading and/or speculation has driven commodity prices to unduly high levels.

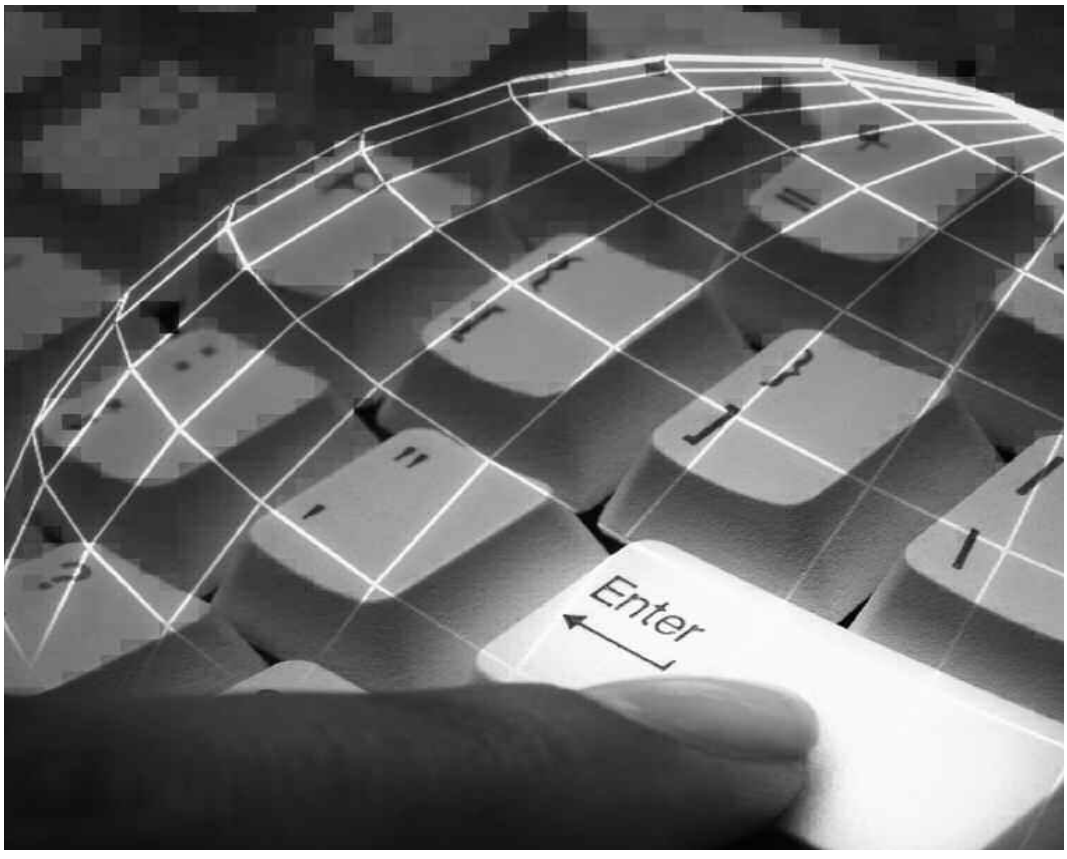
It is difficult to substantiate the claims that greater financial involvement has had a negative effect on commodity markets and that growing participation in EU markets would be unwelcome. While speculative interest can – and undoubtedly does – lead to transient movements in forward prices, financial trading is ultimately a zero-sum game. Every seller must find someone willing to purchase at the prevailing price and the "net" market sentiment is unlikely to deviate from the fundamentals for long. Moreover, the ultimate winners and losers are determined by spot settlement prices that reflect the underlying **physical** supply and demand (especially in power and gas markets where storage is relatively scarce or non-existent).

This expectation is also borne out in practice. For example, our physical model of the oil market is able to explain 86 percent of oil price movements since 2004 (an incredibly high proportion from a modelling

perspective). Moreover, it should be remembered that, although significant, fund investments in commodity indices remain a tiny proportion of the market (less than 1% in nearly all commodity markets). There has also been no correlation between returns and the relative significance of index trading (returns have been flat in agriculture and livestock where indices play a relative large role compared with high returns in the metals markets where index investments account for less than one-fifth of one per cent of the traded market volumes). The lesson from other commodity markets therefore supports the expectation that while financial trading offers significant benefits in terms of additional liquidity, it is unlikely to have any significant negative impacts on the overall efficiency of the wholesale power and gas markets.

Conclusion

As the EU power and gas sectors embark on a period of fundamental structural and regulatory reform, commodity markets are undergoing a fundamental transformation wrought by the greater financial participation from institutional investors, hedge funds and intermediaries. Although the drivers and focus of these transformations differ, they are inherently complementary: greater competition, transparency and liquidity in the EU physical energy markets will facilitate greater financial participation, which in turn will reduce entry barriers and promote further competition in the physical market. While financial trading can appear remote and unconnected from the technicalities of the power and gas markets, the truth is straightforward: if we build it, they will come. ■



Commodity Investment: Impact on Energy Derivaties

The last four years have seen a dramatic growth in commodity index mutual and exchange traded funds (ETFs). According to Tim Guinness, of Guinness Asset Management, (Manager of the Investec Global Energy Fund) this expansion is due to both the sharp rise in commodity prices and relatively poor performance of equity markets in the earlier years of this decade.

Setting the Scene

The last four years have seen considerable growth in both assets and performance of commodity index benchmarked mutual funds and ETFs. From 2003, funds in the largest five commodity mutual funds and the largest seven ETFs have grown from under $100 million (mn) to over $18 billion (bn).

The background to this is the very strong rise in commodity prices since 1998 **(see Chart 1)** fuelled by, in particular, demand from China. Such high returns during a period when equity markets had to cope with a major correction have caused a number of investors to argue the case for treating commodities as another asset class for those who are seeking diversification, and then to make the case that commodity markets are enjoying a sectoral bull market which, while it lasts, will offer much higher returns than investment in the more conventional asset classes such as equities, bonds or property.

Advocates of commodity investing argue that, historically, commodities markets have experienced long cycles lasting 15 to 20 years or more – and add that we are now 8 years into a bull market phase, following the 18 year bear market of 1981–1998.

Chart 1: Historical Price Movements 1999 – 2006 for Front Month Futures Contacts

	Exchange	End 1998	End 2006	% Change
WTI Crude Oil	NYMEX	12.34	61.05	494.7
Heating Oil	NYMEX	35.14	159.79	454.7
Copper	LME	1439.25	6318.00	439.0
Natural Gas	NYMEX	2.07	6.30	304.3
Silver	CMX	4.90	12.82	261.6
Aluminium	LME	1229.00	2838.00	230.9
Gold	CMX	288.30	638.00	221.3
Corn	CBT	214.75	390.25	181.7
Soybeans	CBT	543.75	683.50	125.7

Source: Bloomberg

Negative Correlation with Equities

The perceived negative correlation between equities and commodities **(see Chart 2)** also provides a tool to diversify portfolios and increase performance and/or reduce risk. Indeed, in their research paper 'Facts and Fantasies About Commodities Futures' Professors G Gorton of Wharton and K G Rouwenhorst of Yale have recently shown that commodity returns are negatively correlated with equity and bond returns [1].

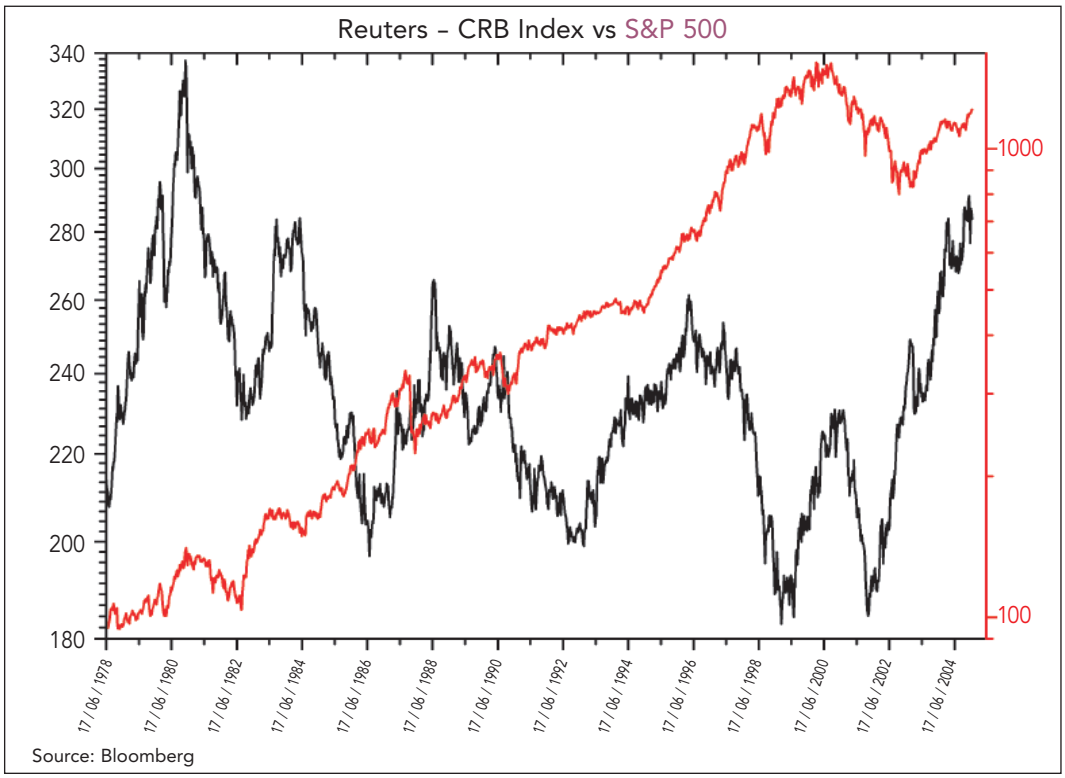
Traditionally, however, commodities have been difficult to gain exposure to for investors – futures trading, for example, demands high minimum trade sizes. The mutual funds and ETFs that have been established in the past 3-4 years have opened the doors of commodity investing to investors who previously only held more traditional asset classes.

Benchmarks Facilitating Investment

Over the years a number of indices have been established against which commodity investors can benchmark performance **(see Chart 3).** The Reuters-CRB index, an un-weighted spot price index, has existed since 1957. The Goldman Sachs index was established in 1992. The Rogers International Commodities Index and the Dow Jones-AIG Commodity Index were launched in 1998 and 1999, respectively.

These indices represent highly liquid and diversified benchmarks for the commodity futures market. Since 2000 a number of index-based mutual funds have been set up to take advantage of the commodity boom with current total invested assets of approximately $16bn. A large percentage of these – c. 60% as estimated by J P Morgan in October ▶

Chart 2: Historical Prices of Reuters – CRB Commodity Index and the S&P 500

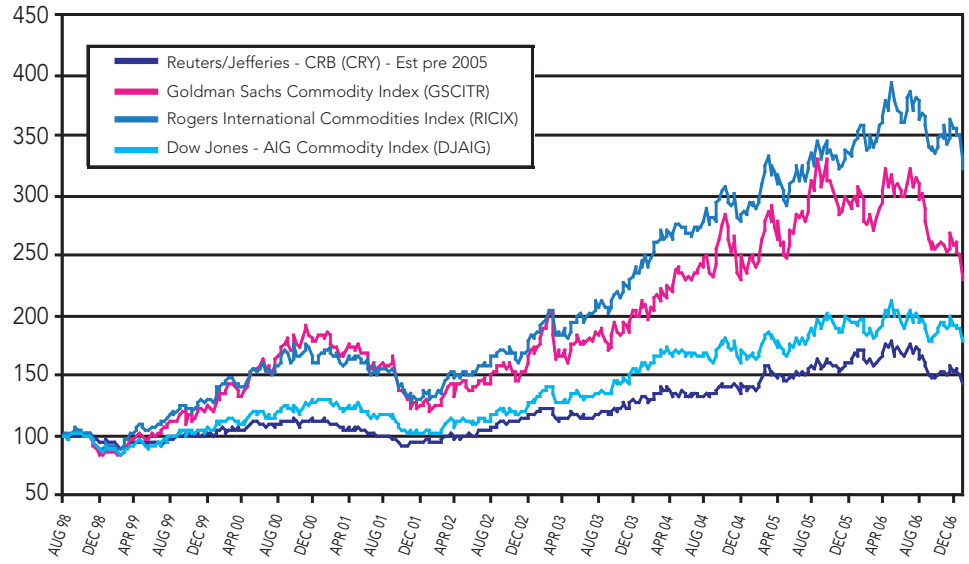


2005 – are held by institutional investors such as pension funds.

The rate of investment into these funds has been rapid over the last three years but has slowed in 2006 **(see Chart 4).**

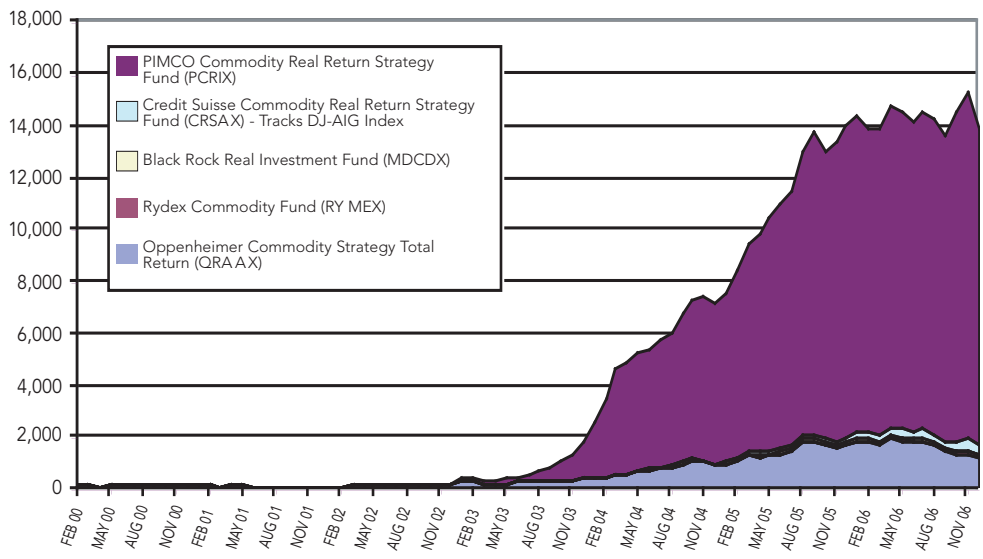
However, Fimat USA LLC, a securities and commodities brokerage, has predicted that commodities may attract as much as another $25bn of investment in 2007, with most of that going into funds tracking indexes.

Chart 3: Performance of the Four Main Commodity Indices 1999-2006



Source: Bloomberg

Chart 4: Index-based Mutual Fund Investment for Five Largest Funds



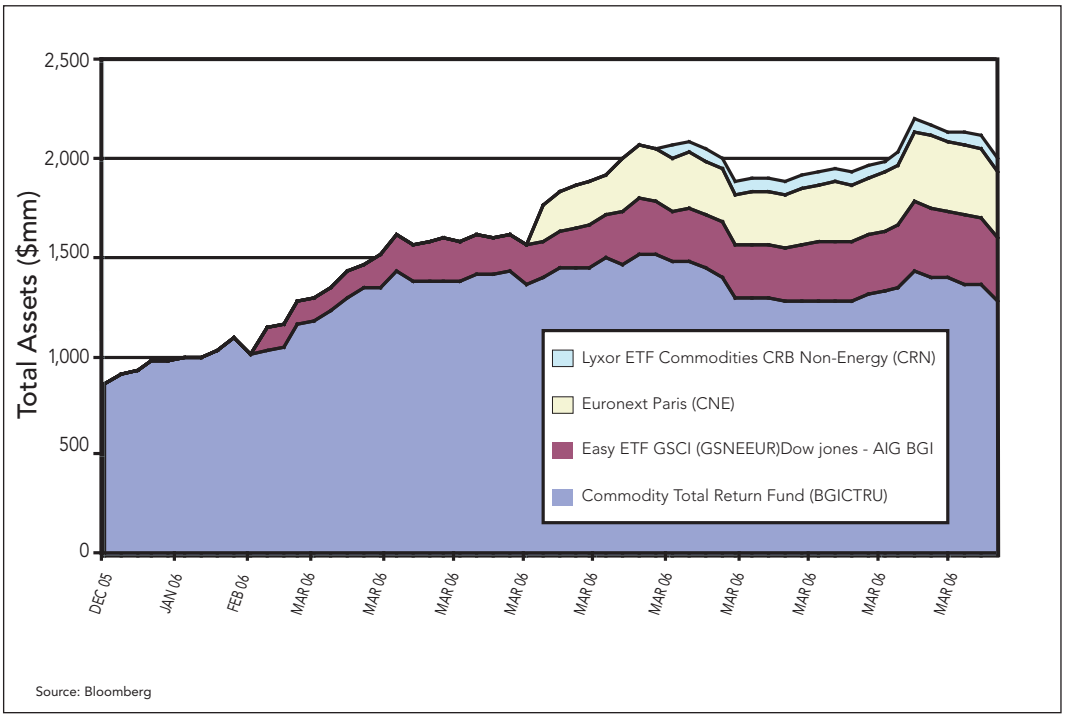
Source: Bloomberg

In addition to mutual funds, a number of ETFs have been set up to facilitate investment in commodities. European commodity ETFs account for approximately $2bn of investment **(see Chart 5)** and US commodity ETFs account for approximately $13bn. US investment is, however, dominated by the streetTRACKS Gold Trust ($9bn) and the iShares Silver Trust ($1.4bn) – leaving the non-precious metal commodity ETFs at only some $1.6bn **(see Chart 6).**

Chart 6: Largest US commodity ETFs (excluding precious metals) at 7 December 2006

US ETF	AUM ($bn)
Macro Securities Depositor Brent Crude	0.80
Powershares DB Commodity	0.71
i-Shares GSCI Commodity Indexed	0.13
Total	**1.64**

Chart 5: European commodity ETFs total assets under management



Source: Bloomberg

Hedge fund (as opposed to mutual fund) participation in the commodity sector is difficult to gauge, but J P Morgan recently attempted to estimate this by assuming a typical global macro fund would take a 10% position directly in commodities futures. Assuming a total of $114bn of funds under management resulted in a rough estimate of order $10bn of investment.

Growth in Energy Derivatives

Turning now to energy specifically: the flows into commodity funds have obviously meant flows into energy derivatives. The energy exposure of the main indices are 44% (RICIX), 33% (DJAIGTR), 39% (CRY) and 66.7% (GSCITR) **(see Chart 7).**

funds. In my mind these are significant levels of investment, but it is worth noting they are nowhere near the number of $90bn that has had some airing in the press.

These flows have, to an extent, been reflected in the fact that open interest

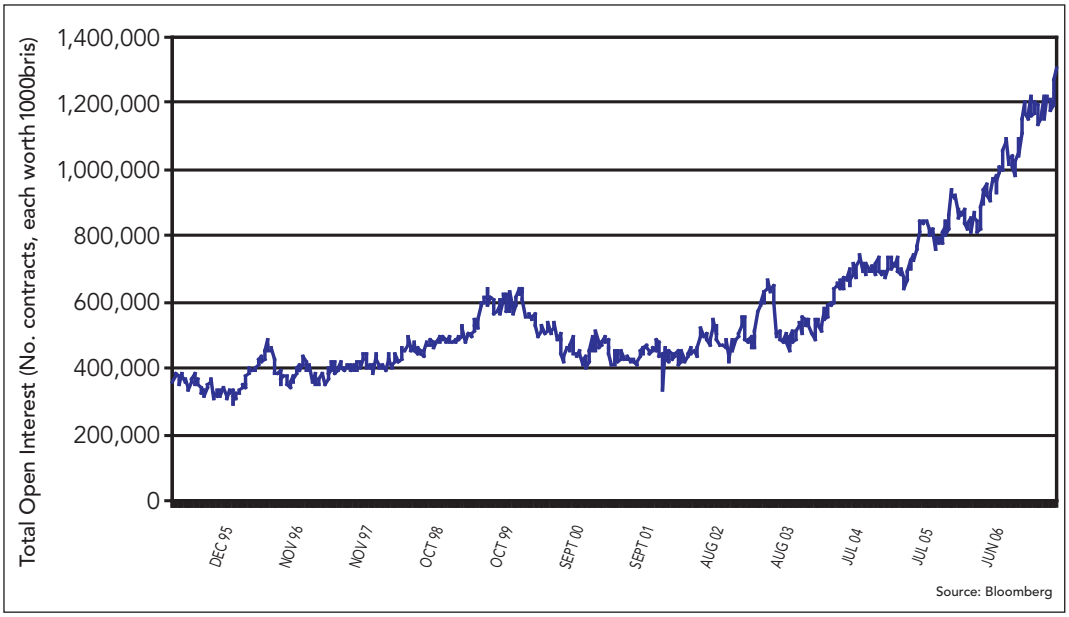
Chart 7: Breakdown of Main Commodity Indices

	Reuters/Jefferies – CRB Index (CRY)		Goldman Sachs Commodity Index (GSCITR)		Rogers International Commodities Index (RICIX)		Dow Jones – AIG Commodity Index (DJAIG)	
Energy Constituents	WTI Crude	23	Crude Oil	33.2	Crude Oil	21	Petroleum	20
	Heating Oil	5	Brent Crude	33.2	IPE Brent	14	Natural Gas	13
	Unleaded Gas	5	Unleaded Gas	12	Heating Oil	1.8		
	Natural Gas	6	Heating Oil	5.5	IPE Gasoil	1.2		
			Gasoil	4.8	RNOB Gasoil	3		
			Natural Gas	8.4	Natural Gas	3		
Energy Total		39		66.7		44		33
Soft Commodities Total		40		19.5		34.9		39
Metals Total		21		13.9		21.1		28
		100		**100**		**100**		**100**

This implies a flow of funds from commodity mutual funds and ETFs into energy markets of some $8 – 9bn out of the $18bn of total assets under management. On top of that we have potentially, say, $4 – 5bn from hedge

in the energy derivative markets has increased significantly over the last three years with, for example, the total open NYMEX crude oil futures contracts increasing from 0.5mn in 2000 to 1.3mn today **(see Chart 8).**

Chart 8: Total Open interest in NYMEX WTI Futures



Getting behind these numbers is not straight forward. NYMEX itself disaggregates them into commercial and non-commercial. Commodity index-based mutual funds are not included as non-commercial interest but instead fall into the commercial category. The number of commercial long futures within the above total has increased from 0.3mn to 0.8mn contracts over this period.

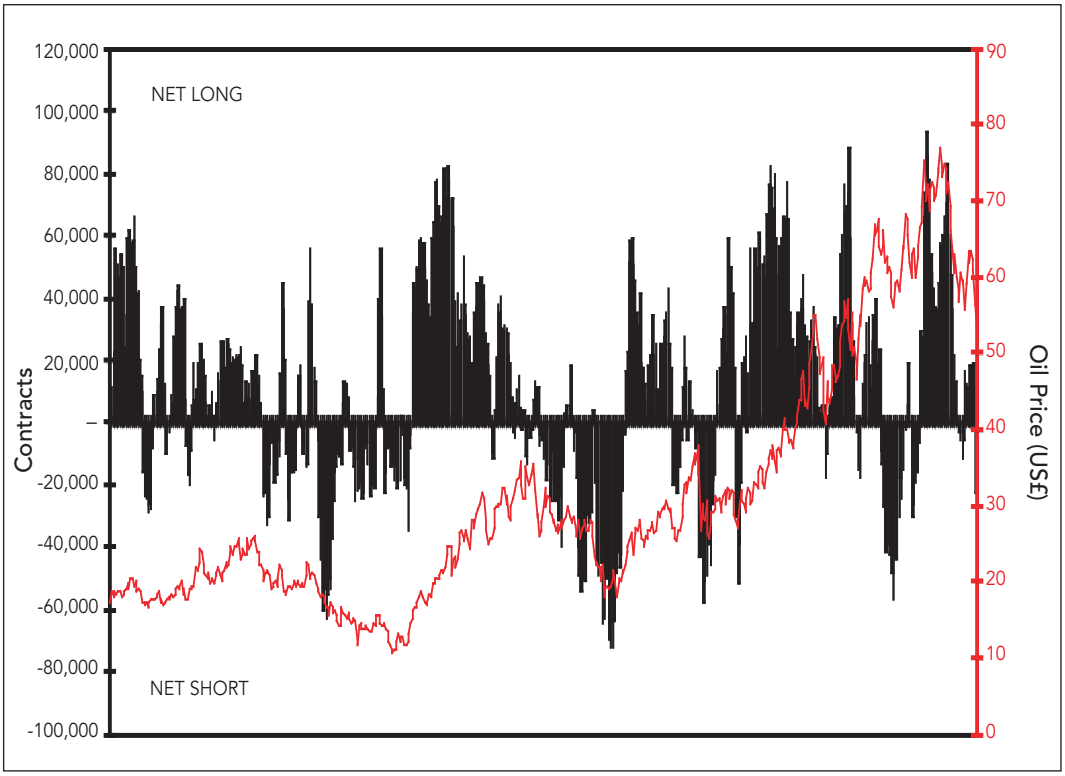
This increase of 0.5mn commercial long contracts represents an increase in underlying long oil exposure of 500mn barrels. This represents $25bn at $50/barrel and we would surmise some meaningful proportion of this reflects the $8 – 9bn of commodity mutual fund and ETF energy related investment flows observed above – although it will be less than the headline figure as some of the positions will be taken in other energy commodity contracts such as the London ICE energy futures market where Brent futures are principally traded (and no commitment of traders data is published). In mid January the total Brent open interest figure was about 0.6mn contracts.

Recent Market Trends

Turning to the NYMEX non-commercial futures, the net position is of greatest interest and, **as shown in Chart 9**, this has peaked four times in the last three years at 80,000 contracts net long. Again we might surmise this – a value at $50/barrel of $4bn could represent hedge fund positions. Not surprisingly recent big moves in the oil and gas prices have also been preceded by changes in the non-commercial net open interest.

The recent contango in the commodity markets, whereby prices close to ▶

Chart 9: Net NYMEX Non-Commercial Open Interest and Oil (WTI) Price



delivery are less than for dates further away, has been attributed to increased investor interest. Larger positions in the open interest in longer dated contracts appears to be driving this contango further into the future and is artificially influencing producers to increase stockpiling of products.

The recent flows of investment into the commodity sector looks set to continue, despite recent falls of 15% over 2006 for the Goldman Sachs Commodity Index and 7.4% for the Reuters/Jefferies-CRB Index **(see Chart 3)**. The long term prospects for economic expansion in China remains strong, underpinning demand and driving commodity prices well into the future. Index-based mutual funds may suffer from increased rollover costs arising from long term contango in the commodity markets, however, and some commodity-related investment may move more towards hedge funds, who are able to profit from any downward shifts in prices.

Some Conclusions

Some commentators have questioned whether this financial investor-driven expansion in energy derivative markets is such a good thing. They have argued it creates unwelcome volatility. Personally, I am convinced this thinking is incorrect. More participants are likely to lead to markets being less, not more, volatile and certainly more efficient. I see no convincing evidence from history (think of 1974, 1979, 1985, 1991, 1998) that markets are any more volatile than they were. The oil price rose eight fold in the 1970s from the average price of the 15 years prior to 1974. To date it has risen at its peak only some three fold from the average price of the 15 years prior to 2003. Regardless of volatility, however, the great merit of markets is they act to help companies and governments allocate resources rationally and to take better decisions. If commodities are becoming scarce, for an efficient and effective supply response it is important that prices rise to encourage new investment and the development of alternative energy sources.

Will the growth in energy futures and other derivatives continue? This will likely depend on how the future for energy and commodity prices unfolds. If those who believe, like me, that we are only part way through a long cyclical upturn in commodity prices are right, the growth in energy futures and other derivatives will continue for some time to come. This cycle appears to be driven by the demand growth from multiple emerging economies around the world, all of which have now entered the energy intensive stage of economic growth that seems to accompany the raising of GDP per capita from $3,000 per head to $10,000 per head. In my opinion this will not be over quickly. ■

[1] G Gorton and K G Rouwenhorst, Facts and Fantasies About Commodity Futures, Financial Analysts Journal, 62:47, March/April 2006.

Trends in European Energy Quarterly Survey (Winter 2006/07)

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

This 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 financial trading, and to monitor changes in market perceptions over time.

Results are based on the views of a representative panel of leading market participants and policy influencers. The survey itself takes the form of a detailed telephone questionnaire and is conducted on a strictly confidential and non-attributable basis. Respondents were interviewed in January 2007.

This quarter there were contributions from 29 senior market participants from 14 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland and the UK).

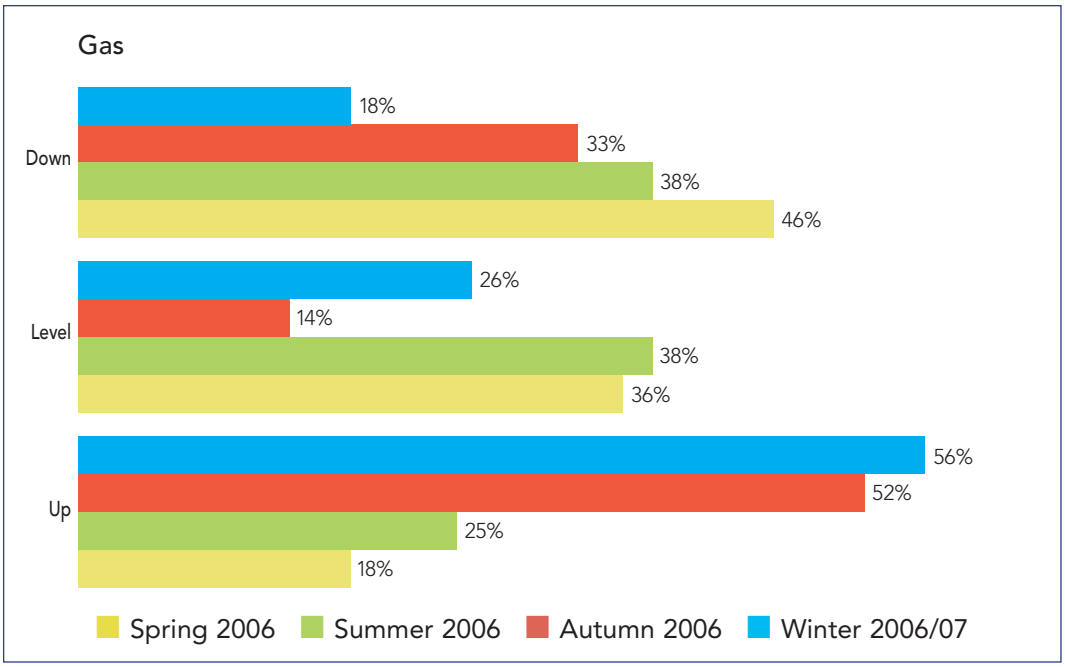
The key findings are as follows:

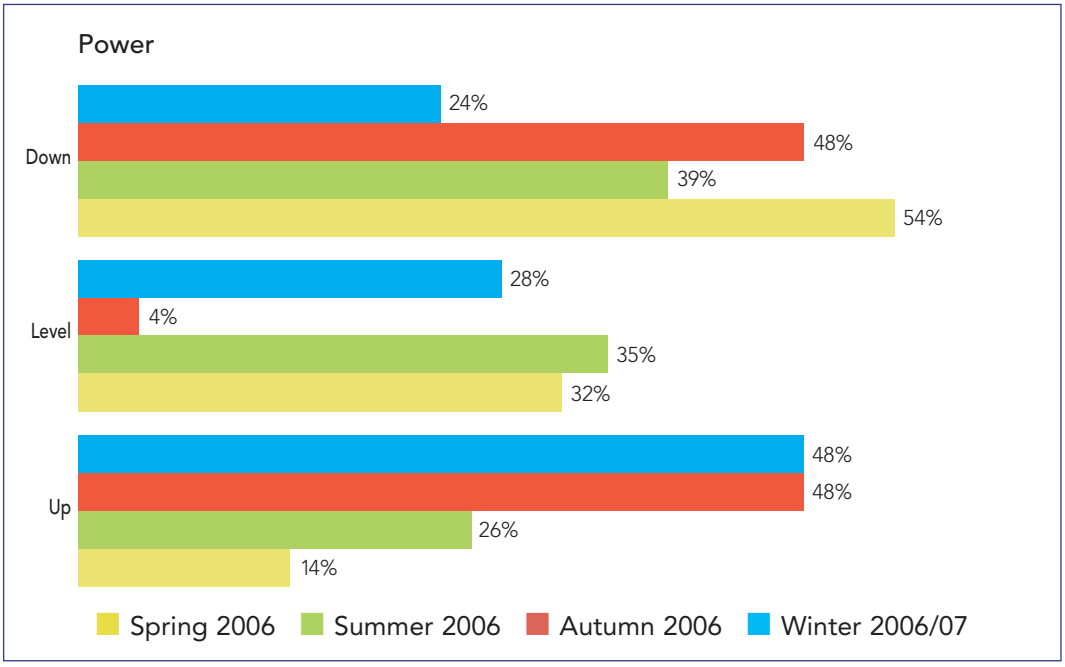
Market Trends:

- Last quarter, respondents were equally divided on the future direction in **power** prices; however, this quarter only **24%** of our expert panel expect spot energy prices, for power, to increase in Europe over the next twelve months. The percentage of those who believe prices in this area will fall is **48%,** the same figure as last quarter. The remaining percentage (**28%**) project that spot power prices will broadly remain the same, a significant increase from the **4%** in the previous quarter.

- In the **gas** market, price expectations have continued to weaken. The previous survey showed that respondents expecting a rise had fallen from **38%** to **33%.** This winter survey continues to show a drop, with respondents expecting a rise down to **18%.** The number predicting a decrease in spot gas prices has increased from **52%** to **56%,** which although not as drastic a rise as the Summer 2006 increase of **25%** to **52%,** is an increase nevertheless. There was also an increase from **14%** to **26%** in those who believe the price will stay the same.

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





- With regard to Germany, Scandinavia, UK and the Netherlands, there has been a general shift away from predictions of rising prices for power. As regards **Germany,** 78% of our panel believe that prices in this sector will remain the same or decrease. The underlying price trend for power in **Scandinavia** remains uncertain as opinions fluctuate as to whether the price of power is going to rise or fall. 69% of our experts believe **UK** power will remain the same or decrease in price while a more convincing 82% ▶

- believe that the price for power in the **Netherlands** will remain unchanged or fall in the coming 12 months.

- As in our last survey, there continues to be a movement away from predictions of rising prices for gas. For **Scandinavia** it is difficult to draw a definite conclusion on the future prices of gas. However, 76% believe **German** gas price will remain the same or decrease, 75% predict the prices of gas in the **Netherlands** will stay the same or decrease and in the **UK** gas market, 75% expect that the price of gas is either going to remain stable or decrease.

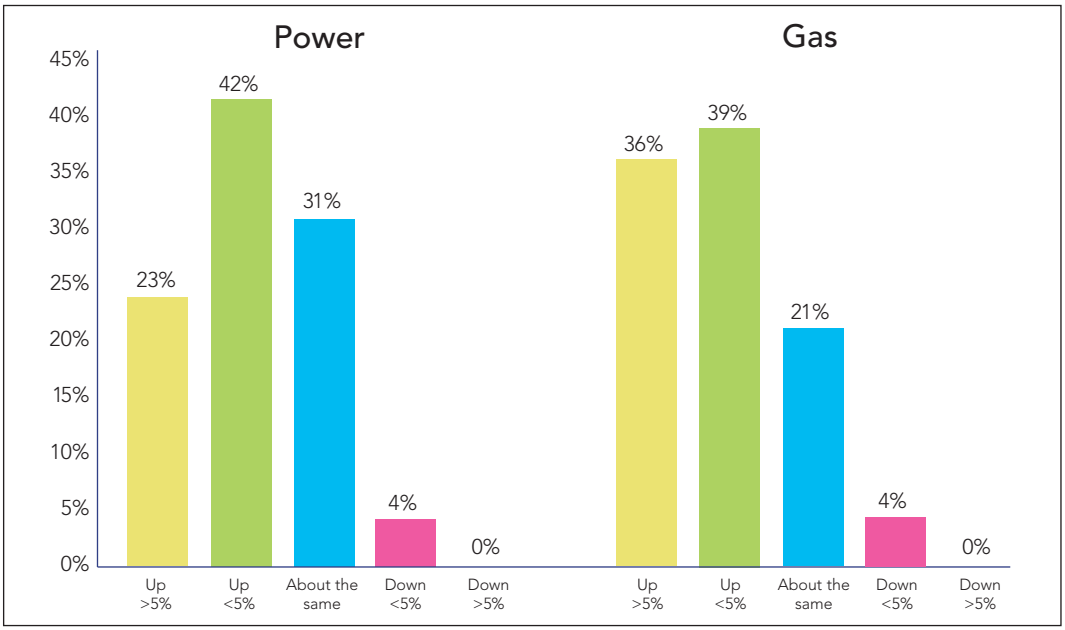
Key factors Influencing Energy Prices:

For each of the following issues our Panel were asked to say whether the issue would have an upward, downward or stable impact on energy prices in the next 12 months. The Panel were also asked to rate, on a scale of 1-5, how significant the issue would be in determining energy prices over the next five years.

	Upward, Downward, Stable	Average Significance
Environmental Pressures	Upwards	3.8
Movements in Fossil Fuel Prices	Stable	4.0
Market Liberalisation	Stable	2.4
Industry Consolidation	Stable	2.0
Infrastructure Developments	Downwards	2.4

- On important issues likely to be at the forefront of energy the market in the next 12 months, **M&A activity** and ramifications of the **EC Climate Change** proposal were viewed as the most important issues. In addition German power and gas liberalisation, ownership unbundling, consolidation, competition, regulation and the **National Allocation Plans** for EUETS were also highlighted as important issues.

How do you see EU market trading activity (defined as volumes traded – exchanges and bilateral) changing over the coming 6 months?



- In the last survey, the share of respondents expected an increase in **market trading activity** over the next 6 months in both gas and power. This current survey shows that, for power, only **23%** of respondents believe that trading activity will increase by more than 5% (down from **35%** last quarter), but an increase from **35%** to **42%** believe trading activity will increase by less than 5%.

- The trading activity for gas is similar. Although the projected increase in activity by more than 5% has stayed at **36%,** there has been a significant rise of **39%** for respondents who believe activity will increase by less than 5%, up from **25%** last quarter.

- In the survey last quarter, 40% of respondents said that their company's **traded volumes** were cleared, an increase of 6% from the survey before. This current survey recorded that an average of 34% of the respondents company's traded volumes were cleared.

- **58%** of respondents predict that there will be a higher **proportion of market** activity going over exchanges in the coming 6 months in the power sector as well as **61%** believing there will also be a higher proportion of market activity in gas. **38%** of respondents feel market activity will stay the same for power along with **36%** thinking the same is true for gas.

Special Topic: Financial Trading

Each quarter, a different special topic is examined, with additional questions put to the Panel. Last quarter the future of carbon trading in Europe was examined in depth, and this time our focus was on financial trading in Europe.

- In the first question to our Panel we asked why financial investors were attracted to the energy market. The most popular response was that the increased price volatility presented **commercial opportunities** and short term profits. In addition, our Panel recognised that the energy market was **under-represented, attractive** and **fashionable** consisting of low start up costs and liquid markets. The market also offers diversification into commodities and new opportunities to manage risk.

- The most popular markets, according to our Panel were **German Power** and **UK Gas** for their volatility, liquidity and the fact that they are liberal and easy to trade. The **CO_2 market** for its high risks, high profits and global nature was also popular as were **Nord Pool** and **Netherlands** Power and Gas for their reliability. The general consensus was that the popular markets were in North Western Europe and were attractive for their transparency, liquidity and reliability. ▶

- With regard to sources of financial investment, our panel were in agreement that **banks** servicing **hedge funds** were the key financial investors with utilities also contributing in some instances.

A summary of key responses on the role of financial trading in energy markets is contained in the table below:

Results in Percentage (%)	Agree	Disagree	Don't Know
Financial trading has been a major factor causing the recent rises EU wholesale gas and power prices	7	79	14
Financial trading has been a major factor causing price volatility in EU energy markets	46	46	8
Financial traders provide much-needed liquidity in gas and power markets	100	0	0
Financial trading has been the major driver behind the rapid growth in CO_2 trading	79	14	7
The recent growth in financial trading is a short term phenomenon	4	89	7

- Finally we asked our Panel what factors would encourage growth in financial trading and what factors would inhibit growth. Increasing **transparency, liquidity** and **volatility** were considered the most popular factors that would encourage growth. Other factors included deregulation, ownership, liberalisation and unbundling.

- Our respondents commented a lack of **transparency, liquidity** and **volatility** would seriously inhibit growth in financial trading. In addition, our respondents considered that an increase in regulation and consolidation as well as a halt in liberalisation and shortage of traders would inhibit financial trading in the energy sector.

APX News

2006 Volumes

In January 2007, APX Group announced yearly volumes for its gas and power exchanges. In 2006, the volumes of the Group exchanges totalled 178 TWh, an increase of 20% compared to 2005 when a total of 149 TWh was traded. The UK based exchanges, APX Gas UK and APX Power UK, and the Dutch power exchange APX all saw record amounts of traded volume in 2006 with 149 TWh (5.1 billion therms), 10 TWh and 19 TWh traded respectively.

Commenting on the results, Bert Den Ouden, CEO, APX Group, said: "In 2006, APX group has had its best year ever. We have seen a 20% growth across the board. In 2007 we will further consolidate our trading system EuroLight™ across the Group, and optimise trading arrangements and services for the benefit of a well-functioning and integrated North West European energy market."

Trilateral Market Coupling Results

Power prices for the Dutch, Belgian and French day-ahead markets converged after the successful introduction of market coupling on 21 November 2006 between APX, Powernext and Belpex, the Belgian power exchange, in conjunction with the Dutch, French and Belgian Transmission System Operators. Between 22 November and 31 December 2006, the Dutch-Belgian border was free of congestion in approximately 80% of all hours, creating one price zone in EUR per MWh on the Belgian and Dutch power exchanges, while there was a single price on APX, Powernext and Belpex in over 50% of the time. In approximately 70% of the time market results show a convergence of prices in Belgium and France. Since the start of market coupling, there has been optimal use of cross-border capacity between the three countries.

Commenting on the results, Bert Den Ouden, CEO, APX Group, said: "I am especially pleased with the launch of trilateral market coupling together with our Dutch, French and Belgian partners. The initial results demonstrate a great improvement for the power market, equally in utilisation of capacity for imports and exports, and in price convergence between the three countries."

New Management Board Structure

In December 2006, as a result of internal restructuring, APX Group announced a new Management Board structure, effective as of January 2007. The new Management Board structure will enable the Group to streamline its business, while the new British members reflect the group's Anglo-Dutch culture. The new APX Group Management Board Structure is as follows:

B. (Bert) Den Ouden
– CEO, APX Group

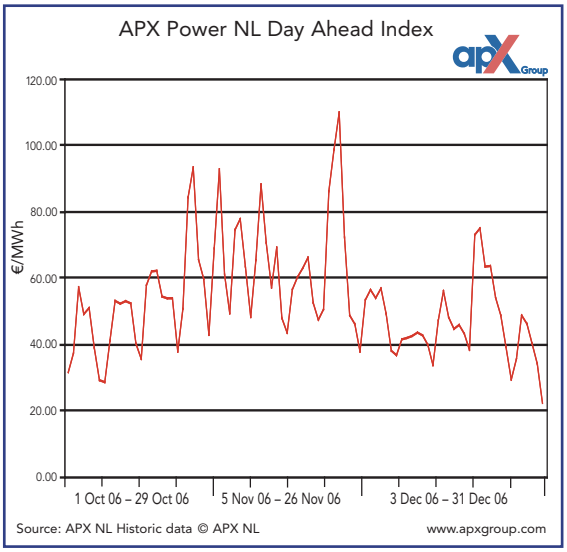
M. (Martin) Thomas
– Operations Director, APX Group

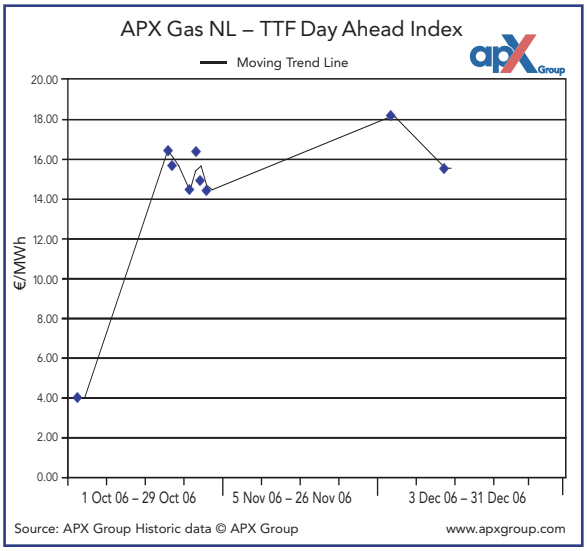
A. (Andrew) Claxton
– Business Services Director, APX Group

L. (Les) Male
– Commercial Director, APX Group

L. (Lucas) Schmeddes
– Finance Director, APX Group ■

APX Indices





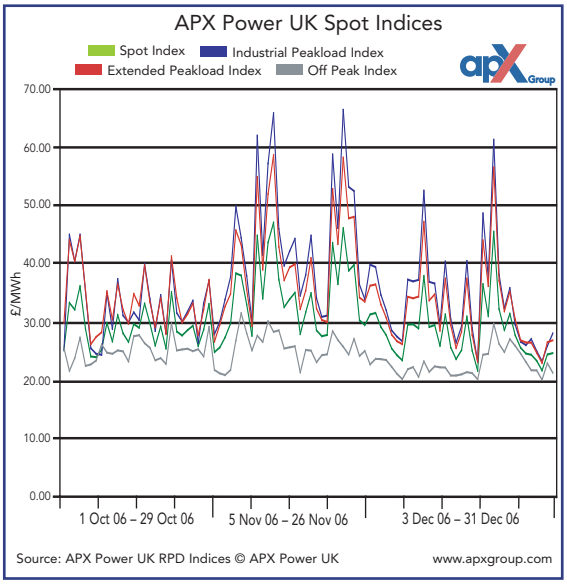
APX Power NL Day Ahead Average Prices

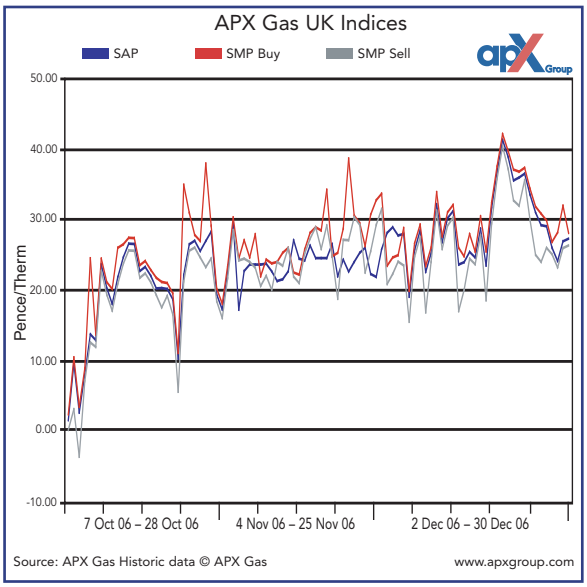
The APX published average prices are comprised of base load, off peak and peak load (07.00 - 23.00) prices based on the average price (in Euro/MWh) of Dutch power traded every day on APX for delivery the next day. Weekend prices are only comprised of base load prices and volumes.

APX GAS NL 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





APX Power UK Spot Indices

The APX Power UK Spot Indices are based on the APX Power UK 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 APX Power UK.

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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