ENERGY PRICE TRENDS AND PRICE VOLATILITY ISSUE 16 | AUTUMN 08

ENERGYVIEWPOINTS Developing energy markets



Table of Contents

EXPECTED FALLS IN ELECTRICITY AND GAS PRICES

Moffatt Associates' latest survey reveals that the majority of market participants believe fossil fuel prices have now peaked and that we can expect stable or falling electricity and gas prices in the next 12 months.

03

11

UNCERTAIN OUTLOOK FOR EU CARBON PRICE 07

What happens to the price of carbon has a significant influence on power and gas prices. A CO_2 price collapse similar to that of 2006-07 is unlikely but according to Per Lekander of UBS, the future carbon price is uncertain because it will be driven by abatement strategies rather than economics.

TRENDS IN EUROPEAN GAS PRICES

Most EU gas is still traded under long term contracts with prices linked to oil. But according to James Bloom and Mitun Patel of Gas Strategies, more diversity of supply could lead to an increase in "hub" based contract price indexation.

IMPACT OF MARKET STRUCTURE ON ENERGY PRICES

Higher fossil fuel and carbon prices have driven up power prices. But according to Dr Hans Grüenfeld, President of IFIEC, the adverse impact on user costs is aggravated by the lack of competition in EU energy markets.

EUROPEAN ENERGY MARKET TRENDS SURVEY – AUTUMN 2008

This regular, quarterly survey, sponsored by APX and produced in association with EFET, summarises expectations about future energy market prices based on responses from 28 senior market participants, analysts and policy influencers from 8 countries across Europe. The survey is devised and conducted by Moffatt Associates, an independent research and energy market consultancy based in London.

APX NEWS 21

APX INDICES

APX Power NL Day Ahead Average prices, Gas NL TTF Day Ahead Index, Power UK Spot Indices, Gas UK Indices.

DISCLAIMER

24

22

General disclaimer for the Energy Viewpoints publication.



14

16

Moffatt Associates' latest survey reveals that the majority of market participants believe fossil fuel prices have now peaked and that we can expect stable or falling wholesale electricity and gas prices in the next 12 months.

Expected Falls in Electricity and Gas Prices

E u wholesale energy prices have risen sharply in the last 12 months prompting political concern over the impact on inflation and suspicions about the perverse role of speculation in wholesale markets. prompted recession, the outlook is for stable or falling energy prices. Below are some of the responses expressed by our panel of market participants from across the EU to the question:

However, it now looks as though fossil fuel prices have peaked and combined with the threat of a credit crunch

Do you expect power and gas prices to increase in the next 12 months?

"No, because the long-term trend in oil prices is slowly levelling off, unless something happens to disrupt Russian supplies."

"No, fossil fuel prices have peaked, but countering this, we see ever reducing reserve margins on power which may increase prices, especially in the UK and France."

"No, because the increase in prices was more psychological and did not reflect market fundamentals."

"No, because the price is driven by global oil and gas markets and because of credit crunch issues, the trend will be bearish."

"No, because although gas prices may increase slightly, the coal price will fall so overall energy prices will tail off, leaving things broadly stable."

"No, because it's based on the oil price which will be bearish, and has not been fully factored into the electricity price."

MARKET PRICE TRENDS

How do you expect the underlying trend in power and gas prices to move in the following markets over the coming 12 months?

Power – Variable Direction





Power – Variable Impact



>

Expectations about oil and coal prices are bearish but views are split on what might happen to the gas price given concerns about security of supply. What is certain is that the capital costs of generation are expected to rise sharply, and the carbon price will be firmer in Phase II of the EU ETS.

The charts below indicate the expected direction and likely impact of key gas price determinants.



The oil price is the key driver of wholesale gas prices and expectations are that in the next 2 years the oil price will be stable or fall. The impact of a firmer carbon price is much less than in the case of electricity. As with power, the costs of new production and transit capacity are likely to rise sharply but its impact in gas prices will be muted.

ENÉRGYVIEWPOINTS

MARKET PRICE VOLATILITY

Our panel were asked to rate the relative impact of various factors on the short term power and gas prices. The results were as follows:

Electricity



Market participants believe that the **most significant factors influencing electricity prices** are; withdrawals or outages of generation capacity (7.7), disruption to the supply of gas (7.0) and fluctuations in the coal (6.2) and oil price (6.1).



The panel felt the **most significant factors that influence the short term price of gas** are; disruptions to supply (8.1), fluctuations in oil prices (7.0), seasonality of demand (6.1) and withdrawals and outages of generation capacity (5.4).

Finally, there are mixed views about the impact of the credit crunch crisis on energy markets. Many participants

felt that the withdrawal of financial investors will reduce liquidity, but others feel the crisis could reduce speculation and mark a return to the markets reflecting fundamental demand and supply conditions.

Moffatt Associates September 2008 9.0

What happens to the price of carbon has a significant influence on power and gas prices. A CO_2 price collapse similar to that of 2006-07 is unlikely but according to Per Lekander of UBS¹, the future carbon price is uncertain because it will be driven by abatement strategies rather than economics.

Uncertain Outlook for EU Carbon Price

The market can choose to either buy a lot of 'Kyoto-allowances' (CERs) now and face very steep CO_2 reduction requirements after 2012 or reduce domestic emissions now and smooth CO_2 reductions over time.

We think the former is more likely indicating that the current E23/t CO_2 price could be sustainable over the next few years. On the other hand, if players 'save' CERs to use them in the much tighter Phase III there will be a bigger need to cut emissions and we think that a CO_2 price of E30-40/t is more likely.

For Phase III, the pricing dynamics are clearer. There will be a need to cut EU emissions, probably in the range of 15%. The CO_2 price needs to be high enough to reduce European coal power generation by almost

Table 1	Allowances	deficit	estimate	2007-2012
Tuble I	Anowances	acticit	Cotinnate	2007 2012

50%. This will, considering current fuel prices, require a carbon price of E40/t.

PHASE II: A BINARY CALL

Table 1 below shows our estimate of the ETS emissions deficit in 2007-2012. In 2007, the last year of Phase I of ETS, we estimate that the volume of issued allowances was 5% above the level of emissions. For 2008-2012, we estimate business as usual with emissions 8-9% higher than the volume of issued allowances. A CO_2 price collapse similar to that of Phase 1 is therefore unlikely.

However, uncertainty about the CO_2 price remains significant (see below). The current price, about E23/t, is just about in the middle of our forecast range.

	2007	2008	2009			
2007 emissions	2050	2050	2050	2050	2050	2050
Scope adjustments Phase 2		166	166	166	166	166
Inclusion of airlines					30	31
2007 emissions adjusting for scope	2050	2216	2216	2216	2246	2246
Allocation	2,152	2081	2081	2081	2081	2081
Gross deficit at 2007 emissions	-102	135	135	135	165	165
Emissions growth		54	81	108	135	162
Emissions savings		-23	-43	-56	-113	-160
BAU emissions deficit	-102	165	173	187	186	167
% of allocations	-5%	8%	8%	9%	9%	8%
Source: UBS						

1 The views expressed in this paper are personal and do no necessarily represent the views of UBS.

FUEL SWITCHING IMPLIES A HIGHER PRICE

f the emissions deficit is met primarily by domestic European emissions reductions it would, considering current fuel prices, require a much higher CO_2 price. Chart 1 shows our estimated 'carbon abatement cost' for UK and the rest of Europe and we compare it to the CO_2 price.

⁶⁶ This volume is almost twice our estimate of the emissions gap and CERs could easily cover the full emissions deficit.⁹⁹

We have calculated these prices by estimating what CO_2 price is required to equalise clear spark and dark spreads. The implied price moves in accordance with coal and gas prices. The CO_2 price has tended to move in line with movements in this implied price, but the movements have been much smaller and have been at a lower level. In the current situation, we estimate that in order to accomplish significant emissions saving via fuel switching we would need a CO_2 price in excess of E30/t.

CERs INDICATE A LOWER PRICE

Alternatively, European companies could make so much use of CERs, or Kyoto-allowances, that there will not be a need to cut domestic European emissions. As the cost of CERs is significantly below the current CO_2 price, possibly around $\in 12-15/t$ for recent projects, this could createa significant potential for a fall in the CO_2 price. We think that a plunge towards this cost level is unlikely as there exists an option to use the CERs also in Phase III. However the risk of a price fall in Phase II cannot be excluded.

In total, 1.4bn tonnes of CERs could be used in ETS Phase II or 280 Mtonnes/y. This volume is almost twice our estimate of the emissions gap and CERs could easily cover the full emissions deficit.

The proposed rules for Phase III, to be adopted by the end of 2008, leaves the CER volume unchanged at 1.4bn tonnes, but extends the possible use of it to the full 13 year period 2008-2020. This would equate to about 108 Mtonnes/y.



Chart 1 European versus UK-based fuel switching costs



Table 2 shows that if the lower volume 108 Mtonnes/y is utilised, ETS Phase II would have a remaining emissions deficit of 60-80 Mtonnes or 3-4%. On the other hand, at the regulatory barrier of 280 Mtonnes per year ETS would be 4-5% long. This would obviously not happen but the surplus could be carried over to Phase III. However, it demonstrates that CERs potentially could cover the full deficit for Phase II and thus there could be a significant further downside risk to the CO_2 price.

We think that the second scenario is more likely. CER-use will be front-end loaded. CERs will be used in Phase II and given the costs associated of holding on to CERs, most are likely to be used immediately. However, at the same time, given that the opportunity price, set by the switching cost is much higher, we do not see a major risk of a fall in the CO_2 price.

PHASE III: UP AND AWAY

For Phase III we believe in a different logic and in a way the uncertainties are lower. Table 3 below shows our estimates for how the emissions deficit changes from Phase II (2012) to Phase III (2013-2020). We estimate that the gross deficit grows from 8% to 21% of underlying baseline emissions. If we then assume that CERs are equally distributed over the 13 year period, and not 'front loaded', as is our scenario above, then the deficit would be around 15%. With front loading, the Phase III deficit would obviously increase further.

Table 2 Net emissions deficit 2007-2012 depending on CER use.

	2007	2008	2009			
BAU emissions deficit	-102	165	173	187	186	167
% of allocations	-5%	8%	8%	9%	9%	8%
CERs used over 13 years						
CER supply		108	108	108	108	108
Net deficit	-102	58	65	79	79	59
% of allowcations	-5%	3%	3%	4%	4%	3%
CERs used over 5 years						
CER supply		280	280	280	280	280
Net deficit	-102	-115	-107	-93	-94	-113
% of allocations	-5%	-5%	-5%	-4%	-4%	-5%

Source: UBSe

Table 3 Emissions deficit Phase III

Emissions Phase 2 scope (Mtonnes)	2246	2247	2247	2248	2248	2249	2250	2250	2251
Scope adjustments Phase 3 (Mtonnes)		150	150	150	150	150	150	150	150
Allocation (Mtonnes)	2081	1978	1945	1913	1881	1849	1818	1788	1758
Gross deficit (Mtonnes)	165	418	452	485	518	550	581	612	643
% of allocations	8%	21%	22%	21%	21%	26%	26%	27%	27%
CER supply (Mtonnes)	108	108	108	108	108	108	108	108	108
% of allocations	3%	15%	16%	15%	15%	20%	20%	21%	21%

Source: UBS

In our view, it will be very difficult for Europe to achieve the CO_2 emissions targets implied by ETS, even assuming the full implementation of the EU's renewables targets, leading to c.190GW of new wind and almost 300 TWh of additional nuclear output. If CER-use in Phase II is front-end loaded, the challenge will become even greater.

⁶⁶ If 470TWh was only to displace coal stations in the generation mix, it would reduce emissions by 423mt CO₂.⁹⁹

> Given our estimates, we would need an additional 470TWh of renewable capacity to meet the target set by the EU. A large amount of the increase is expected in France, Germany, Spain, Italy and the UK. 470TWh would be equivalent to 192GW of new onshore wind across Europe (running at a load factor of 28%). If 470TWh was only to displace coal stations in the generation mix, it would reduce emissions by 423mt CO_2 . This is an upper limit as there are markets (e.g., Spain, Italy, and the UK) where the potential new renewable capacity would displace gas generation and hence, would have a smaller impact on emissions. The total coal and lignite generation in EU is around 1000 TWh per year. Therefore if EU emissions targets are to be achieved a 50% reduction in coal generation is required and to achieve this the CO₂ price would need to rise to about E40/t.

Most EU gas is still traded under long term contracts with prices linked to oil. But according to James Bloom and Mitun Patel of Gas Strategies, more diversity of supply could lead to an increase in "hub" based contract price indexation.

Trends in European Gas Markets

Lurope currently has three main traded gas hubs; the National Balancing Point (NBP) in the UK, Zeehub in Belgium and the Title Transfer Facility (TTF) in The Netherlands. Other smaller hubs include BEB & EGT in Germany and PEG in France.

Whilst the UK's NBP trades mainly on the Intercontinental Exchange (ICE), it also trades alongside Zeehub and the TTF on the Dutch APX exchange. Historically and currently the NBP has been Europe's most liquidly traded market. With around 50% of long-term contracted supply priced directly at this notional price hub, the NBP, after the US Henry Hub, is the second most liquid traded hub in the world.

The well established NW Europe pipeline network has allowed traders to physically arbitrage short term price differentials. Data from the Gas Strategies Online database shows that as a consequence of this physical arbitraging, prices at the NBP, Zeehub and TTF prior to 2007 almost fully converged (Chart 1). This was not always the case, as large price differentials were created for short periods when transport capacity between the markets was adversely affected or undergoing maintenance, as in winter 2005-06. Since 2005 physical trading capacity in the Anglo-Benelux region has increased by 42 Bcm/a, thus full price convergence is now more sustainable.

Since 2005, further pipeline capacity has come from four reverse flow interconnector expansions, increasing total capacity from Belgium to Great Britain by 25.5 Bcm/a, from the original 20 Bcm/a allowing the UK to import more gas in Winter months. There has also been the addition of the BBL pipeline, adding a further 16 Bcm/a of UK import capacity from the Netherlands.





ENERGYVIEWPOINTS

Currently, despite having relatively well developed and actively traded markets, North West Continental Europe still purchases a vast majority of gas on long term contracts indexed to oil product prices, traditionally set through inter-fuel competition (e.g. coal, gas oil and fuel oil) in each market sector. This has hindered liquidity at traded hubs such as the TTF and Zeehub where, unlike the NBP, very few contracts are indexed to the hub.

⁶⁶ However, increasing demand for LNG in alternative regional markets looks likely to keep NW Europe short of LNG for the coming years. ⁹⁹

MORE SUPPLY DIVERSITY



• as Strategies views an increase in gas supply to the

region coming from diverse sources as the main

catalyst for NW European hubs to become more liquidly

hubs, we estimate there could be periods of oversupply

traded. With additional gas supplies added to these

which, together with stored Winter supply, could force

the annual average of traded hub prices to fall below

long term annual contract price levels. This could encourage buyers to index more of their supply portfolios to traded hub prices, thereby increasing liquidity at these hubs. This is one of our model scenarios for liberalised pricing in the region post-2014.

Recently some of the larger players on the continent have directly indexed parts of their long term contract price (albeit small portions) to the TTF, EGT and Zeehub. In this current strong sellers' market, oversupply, and further steps towards gas price indexation look less likely than they did in the buyers market earlier this decade.

IMPACT OF MORE LNG

NG supply from the Atlantic Basin and the Middle East could add further supply between 2008 and 2015. There has been heavy investment in LNG receiving facilities in NW Europe since 2005. In the UK, the Isle of Grain LNG terminal (4.5 Bcm/a) opened in 2005 and has a further two expansions under construction, increasing capacity by 16 Bcm/a. Belgium's Zeebrugge doubled its capacity from 4.5 Bcm/a to 9 Bcm/a earlier this year whilst in the Netherlands the GATE LNG terminal (12 Bcm/a) is under construction and a further two facilities are proposed (LionGas, Eemshaven).

Traded volume

12

ENERGYVIEWPOINTS

Net volume

However, increasing demand for LNG in alternative regional markets looks likely to keep NW Europe short of LNG for the coming years. Asian demand remains strong, with reliance on imported LNG, and Asian buyers are prepared to pay significantly higher prices in times of production shortages. There are few other options for increased pipeline gas supply to NW Europe which could diversify reliance on Russia and Norway; the most likely is the Nabucco pipeline project, which still lacks committed gas supply.

⁶⁶ If gas hubs were to become more liquidly traded, market supply and demand fundamentals could correct volatility and return prices to 'normal' levels more quickly.⁹⁹

IMPACT ON PRICE VOLATILITY

Buyers could collectively implement changes in their long term contracts from oil to gas indexation but many are still reluctant, given the certainty of the recent firm oil price movements compared to the more volatile gas price. If gas hubs were to become more liquidly traded, market supply and demand fundamentals could correct volatility and return prices to 'normal' levels more quickly.

In the future it is plausible to assume that the TTF will become more actively traded, as trade has increased since mid-2006 (Chart 2). The increase is largely due to the Netherlands as a key supplier to neighbouring countries, including the UK; as well as an important transit country in the region; and has the potential for major new LNG import capacity by 2012. Higher fossil fuel and carbon prices have driven up power prices. But according to Dr Hans Grüenfeld, president of IFIEC, the adverse impact on user costs is aggravated by the lack of competition in EU energy markets.

Impact of Market Structure on Energy Prices

The highest (marginal) cost sets the benchmark for power prices. To this has to be added the effects of the EU Emission Trading Scheme (EU ETS). Carbon credits, given to generators free of charge, are added to every unit produced even when there is no fossil input. Similarly on gas, prices are set at the marginal LNG level, and are not related to average costs.

⁶⁶ It has been argued that the rise in energy costs is a global phenomenon.⁹⁹

When energy can account for 30% or more of total production costs, uncontrolled price increases create competitive distortions. When the energy "market" delivers extraordinary price increases in the short term and then these prices fluctuate around the new highs on a daily basis, even the most efficient energy users can struggle.

It has been argued that the rise in energy costs is a global phenomenon. There is some truth in this, as long as all competitors work to the same financial principles and energy costs are similar.

⁶⁶ Investment is essential throughout the EU electricity and gas supply chains and security concerns point to the benefits of technology diversity.⁹⁹

The reality is that the profitability of IFIEC's members, is under greater pressure than other global competitors. As EU energy companies are not competing with those outside EU, costs can be passed through in a way not available to industry competing globally. The result is that European energy markets have undermined the competitiveness of Europe's energy dependent industry.

MARKET IMPERFECTIONS

The issue is whether current market design and market concentration is resulting in customers paying not only for the increase in fuel cost, but for something else.

The findings of the energy sector competition inquiry launched in 2005 by the European Commission (EC) identified serious shortcomings in the electricity and gas markets: "too much market concentration in most national markets, a lack of liquidity, preventing successful new entry, too little integration between Member States' markets and an absence of transparently available market information, leading to distrust in the pricing mechanisms..."

These findings clearly suggest the need for structural and design changes of energy markets that by their nature are oligopolistic. Today's uniform price setting mechanism covering a multiple generation technologies may not be a balanced choice.

Investment is essential throughout the EU electricity and gas supply chains and security concerns point to the benefits of technology diversity. This must include the development of LNG terminals, gas storage capacities, nuclear facilities and cross border reinforcement in both gas and electricity networks. Renewables will also be important and although IFIEC questions the feasibility of EU ambitions, these technologies must be explored fully. This is major structural change, not system maintenance and IFIEC accepts that costs will increase.

IFIEC has always pressed for competitive energy markets, but competition cannot be imposed on downstream markets without competition in generation. There are insufficient checks and balances across the EU to cope with the structural problem of market power. Markets suffer from insufficient guarantees to avoid the abuse of market power by incumbents.

CONSUMERS HAVE A RIGHT TO:

- choose suppliers and delivery options;
- know that incumbents cannot restrict new entrants that might offer consumers different options;
- see how the capacity is being utilised to remove concerns over market price distortion;
- appreciate how prices are set.

NEED FOR GREATER TRANSPARENCY

Key to this are transparent pricing mechanisms with competition established between assets. New investment consortia should be encouraged to introduce new asset management and pricing mechanisms. New regulator arrangements need to ensure that there are no entry barriers to such consortia being able to offer all technologies.

⁶⁶ Co-ordination of TSOs would be a way forward to guarantee system security and to decide the grid improvements needed.⁹⁹

Some Canadian provinces have removed marginal pricing mechanisms by arrangements that make existing assets openly competitive, whilst developing competition in new power generation. This kind of scheme is benefiting both consumers and producers and should be encouraged in EU.

The EC's proposals to liberalise energy markets should be implemented along with the necessary regulatory arrangements. Co-ordination of TSOs would be a way forward to guarantee system security and to decide the grid improvements needed.

VALUE OF LONG TERM CONTRACTS

The benefits put forward by utilities for buying gas under long term contracts apply equally to major energy using industrial customers because:

- they provide investment assurance for both suppliers and consumers based on criteria acceptable to competition authorities;
- major industrial consumers provide 24 hour demand for +360 days in the year; providing suppliers with levels of efficiency and system stability not available otherwise;
- they can agree to shut down all or part of their activities during supply shortages;
- they can invest or co-invest either in production assets or through schemes to reduce grid loads.

EFFICIENT PRICE FORMATION

The relationship between the exchange price and prices charged to customers needs clarification and agreement. The final price must:

- include cost transparency over both existing activities and new projects in Europe. How these costs are amortised are central to questions of entry barriers and long term price structures;
- be based on actual input costs, providing new investors the prospect of covering the cost of new investments;
- ensure that the EU ETS on cost reflects the actual carbon content and does not generate any windfall profit;
- ensure that renewable support systems both reflect regional suitability and encourage technology development.

Finally, IFIEC recognises and accepts that energy markets are not the same as other commodity markets. Even so, all customers have a right to be confident that the price they are charged is fair. This means (a) effective transparency in costing structures and (b) assurance of open competition in delivery to final customers. This edition of *Energy Viewpoints* includes the results of our latest quarterly survey which monitors trends in the European energy markets.

European Energy Market Trends Survey – Autumn 2008

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, energy market developments 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 September 2008.

This quarter we received contributions from 28 senior market participants from 8 European countries (Austria, Belgium, Germany, the Netherlands, Norway, Poland, Switzerland and the UK).

The key findings are as follows:

MARKET TRENDS

• Both for **power prices (41%) and gas prices (50%)**, the prevailing view is that prices will fall over the next twelve months. This shows a swing in opinion from the previous survey where expectations were for prices to continue rising.



Figure 1 Electricity - What will be the underlying trend for spot energy prices across Europe in the coming 12 months?

ENERGYVIEWPOINTS



Figure 2 Gas - What will be the underlying trend for spot energy prices across Europe in the coming 12 months?

• Spot power price expectations have switched from predicted rises to falls. The number of people predicting a price rise in this survey has dramatically fallen reaching an **historic low**, whereas the number of participants that indicated an expectation of falling prices rose by 293%.

• In parallel the **gas market also experienced a switch of expectations** to that of falling prices, with predictions of rising prices falling by 59% and the number of participants predicting price reductions soaring 357%.

Forward energy prices are also expected to fall. Interestingly this quarter saw record numbers of participants predicating falling prices. For power (56%) and gas (57%) of participants expected forward prices to fall.





How do you expect the underlying trend in power and gas prices to move in the following markets over the coming 12 months?





>

ENÉRGYVIEWPOINTS

The majority of our panel (54%) believe that prices are going to fall, this compares to 30% who believe prices will rise and 16% who believe prices will remain unchanged.

Within all the above markets the prevailing view was that the **underlying trend** of **gas and power** prices is expected to fall by more than 3% over the next twelve months, with responses ranging from 48% (UK gas) to 19% (Scandinavian power).

As can be seen from the above chart **with the exception** of Scandinavia the general belief is that **prices will fall** by more than 3%. Within Scandinavia however it is believed that prices are most likely to remain unchanged or possibly undergo a slight increase.

KEY FACTORS INFLUENCING ENERGY PRICES

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

In the Autumn 2008 survey, movements in fossil fuel prices were seen as the most significant factor, as was the case a year ago in the Autumn 2007 survey. Once again the panel feels that movements in the prices of fossil fuels (e.g. oil and coal) have the greatest influence upon energy prices, with its significance staying at its 4.4 rating since the Summer 2008 survey.

• It is interesting to also note that industry consolidation and market liberalisation are not seen as exerting significant impact on prices. Environmental pressures were also felt to have eased with its significance falling to 2.9 (Summer 2008 - 3.4)

• No other factors were specifically mentioned within this area as to their significance upon energy prices, however as referred to later the credit crunch has been of concern to a number of the panel.

• Respondents whose companies have some cleared traded volumes said that, on average, 34% of their trading was cleared (down slightly from 35% in the previous quarter)

EU ENERGY MARKET TRADING ACTIVITY

E U energy market trading activity (defined as volumes traded – exchanges and OTC) will decrease by more than 5% over the coming 6 months, according to a majority of respondents. For gas and power combined almost half of respondents (47%) predict a fall in trading market activity. This may be some indication of the possible concern regarding the amount of financial traders that will be present in the market in 6 months time due to the current credit concerns. This is in contrast to our last survey when the panel believed trading activity would remain about the same.

		n 2007	Autumn 2008		
	Direction	Significance	Direction	Significance	
Movements in fossil fuel prices	Upwards	4.2	Upwards	4.4	
Environmental pressures	Upwards	3.8	Upwards	2.9	
Infrastructure developments	Downwards	2.5	Downwards	2.5	
Market liberalisation	Downwards	2.1	Downwards	2.0	
Industry consolidation	Upwards	2.2	Upwards	2.0	





Figure 5 Do you see a higher or lower proportion of market activity going through exchanges over the coming 6 months?





Regarding the proportion of **market activity** going through **exchanges** during the next 6 months, in both power and gas markets respondents expect to see an increase. However as can be seen from the above charts unlike the Summer 08 survey there has been a significant increase in those respondents who expect a possible fall in activity going through exchanges.

Finally, Panel members were asked what (if any) significant developments do you expect in the European energy markets in the next 6-12 months?

Unsurprisingly given the current credit crunch several respondents commented upon the lack of available credit

and possible reduction in the number of banks trading electricity and gas. It was felt that any withdrawal from trading by banks would damage liquidity, but comment was also made that this could increase the impact of market fundamentals and reduce speculation.

Other developments mentioned included further consolidation in the market and further reductions of fossil fuel prices. Nuclear new build schemes were also mentioned as possibly being important as several countries are currently considering the construction of new nuclear stations.

APX Group News

APX & ENDEX MERGE

Following the recommendation of the APX Management Board in the UK and the Supervisory Board of ENDEX (ENDEX European Energy Derivatives Exchange N.V.), APX Group (APX B.V.) announced that it has agreed to purchase 90.85% of shares in ENDEX. The signing of the transaction took place in Amsterdam on 24 September and is expected to be completed at the end of this year.

ENDEX will become a subsidiary of APX B.V. and part of the APX Group, creating a leading integrated energy exchange and becoming the largest European gas exchange. Synergies from the combination of APX's experience in spot trading and ENDEX's experience in derivatives trading will offer a strengthened position in the integration process currently taking place among European energy markets.

The exchanges of the APX Group and ENDEX had combined power and gas trading volumes of 218 TWh in 2007. Currently the two exchanges have 191 trading members across their power and gas markets in the Netherlands, Belgium and the UK.

NEW SERVICES

In September 2008, APX announced the launch of a Day-Ahead Auction for the UK wholesale electricity market – the APX UK Power Auction is scheduled for launch on 02 December (for delivery on 03 December) 2008. This decision is based on numerous requests from market parties for this service, and the support of the intention to launch received from the APX Member Product Board in the UK. The new UK Day-Ahead Auction will provide a focus for liquidity and thus create a transparent and reliable reference price for electricity in the UK; a requirement for any well functioning financial derivatives market. APX views the launch of a UK Power Auction as pivotal in the creation of the robust index price, and lends itself to the development of efficient spark spread products and further market integration with Europe.

NEW MEMBERS

The APX group welcomed 3 new members over the past quarter. During the month of July, Eni UK Ltd., one of the leading producers in the UK offshore oil and gas sector, joined the APX Gas ZEE exchange as its 14th member. Eni UK and an additional existing APX Gas NL member also extended their APX Gas NL memberships to allow the trading of gas transport capacity on the Gas Capacity Usage Rights market on the Dutch/German border. The addition of Eni and the second member to the transport capacity market is an important step in the market's development. In October Morgan Stanley Capital Group, became a full trading member of APX Gas NL. The five APX markets now have a total of 226 memberships.



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 Power UK Spot Indices

APX Power UK Spot Indices Source: APX Power UK RPD Indices © APX Power UK



/ Moving Trend Line

www.apxgroup.com



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 - 07.00and 19.00 - 23.00 in the same EFA day.

APX GAS UK INDICES

SMP buy 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 SMP buy 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.

SMP sell 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 SMP sell is calculated by a default setting of – 0.0324p/kWh (– 0.9496p/therm) from the prevailing SAP.



APX Power UK Spot Indices Source: APX Power UK RPD Indices © APX Power UK



SAP SAP Buy SMP Sell

www.apxgroup.com



Disclaimer

Energy Viewpoints is published by APX Group free of charge and is provided on an 'as is' basis for general information purposes only. The information provided by Energy Viewpoints is of a general nature, not intended to address specific circumstances of any individual or entity and does not contain professional or legal advice.

While APX Group undertakes every effort to provide accurate and complete information, Energy Viewpoints may not necessarily contain comprehensive, complete, accurate or up-todate information. It is not intended to constitute and should not be relied upon as advice to the merits of investment in any commodity, market, contract or other product and may not be used for advertisement or product endorsement purposes.

APX Group makes no representations and disclaims all express, implied and statutory warranties of any kind to the recipient, and/or any third party including warranties as to its accuracy, completeness, usefulness or fitness for any particular purpose. The exclusion of liability includes any consequential damage, loss or additional costs of any kind suffered as a result of any material published in Energy Viewpoints unless caused by intentional default or gross negligence on the part of APX Group's employees.

The layout of Energy Viewpoints, graphics and pictures used and the collection of third party contributions are protected by copyright. APX Group reserves all rights in respect thereof. The reproduction of pictures, graphics, information, text and extracts of Energy Viewpoints shall be allowed upon prior consent of APX Group only.

APX Group has no influence on the contents or reliability of information or opinions contributed by third parties. Such third party contributions do not necessarily express opinions of, or information generated by, APX Group. APX Group disclaims all express, implied or statutory liability for third party contributions and provides such information or |opinions for general information purposes only.

Any claims or disputes arising by virtue of the use of Energy Viewpoints shall be exclusively construed in accordance with and be governed by the substantive laws of the Netherlands.

