A VITAL LINK IN ENERGY TRADING

apx Group

Energy Viewpoints

Developing Energy Markets

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Developing Energy Markets

CONTENTS

The Future Role of Energy Exchanges

Dear Reader,

You are reading the latest edition of "Energy Viewpoints," where we address the role of exchanges. As CEO of the APX exchange, it seems a challenge to introduce you to this subject. However, with such an excellent and distinguished group of contributors to this issue, it is a pleasure for me to do so.

In his article, Peter Terium addresses the OTC market and its relationship with exchange trading. I agree with his argument that OTC trading is an important and essential element of the European wholesale market. The current preferential market model in continental Europe with its mix of explicit long term and implicit daily auctions (market coupling) reflects this fact.

Nevertheless, OTC trading is often seen as competing with exchanges, as demonstrated by Phil Atkinson in his article. Reading between the lines, it seems that exchanges have difficulty in distinguishing themselves from the brokered OTC market which has become more or less "exchange-like" with a single aggregator screen, the possibility for anonymous trading and plenty of OTC clearing facilities, some of them paradoxically provided by exchanges. At the same time, the exchanges – including APX – are moving towards Trayport. So the two business models are approaching one another.

In spot markets, the exchanges have the potential to play a very influential role, especially in electricity where they have been frontrunners in the development of liquidity. This is clearly illustrated in the article by Jean-Francois Conil-Lacoste, at the end of which he makes the case for a wider integration of exchanges. There will indeed be more consolidation, as we have seen in other branches of the industry. At the same time, we may see increased competition between exchanges and the OTC, especially in derivatives. Throughout, it is important to distinguish between two processes: market integration and exchange consolidation.

An integrated market is our ultimate goal. Exchange integration may be one way of achieving this goal, but not an end in itself.

Market integration is being achieved mainly by market coupling, as was demonstrated by the Trilateral Market Coupling (TLC) implemented between the Netherlands, Belgium and France. As Paul Dawson says, this has been an achievement. So much so, that it is now difficult to remember all the problems we faced during implementation. And now that it is in place, it seems strange that we ever coped without it. The daily operation of this new mechanism is continuing so routinely, that we hardly notice it – but isn't that a characteristic of any successful innovation?

Looking at the agenda for market integration, it is easy to get distracted by other goals such as competition from OTC trading and exchange consolidation. Exchanges should focus on keeping their promises to the market. For example, in MoUs and other documents we have vowed to implement more market coupling projects. One of these is extending the coupled region from the TLC to a much wider region including Germany and Luxemburg (the "Pentalateral" CWE region), and there are other initiatives as well. In that respect, the challenges seem to be twofold: keeping things simple and step by step in order to meet the timetable, yet designing solutions that are compatible and open to further integration between regions in the next phase.

As mentioned by Paul Dawson, market coupling is not the whole answer. Improvements can and should be made in many areas, like the calculation methods for cross-border capacity and other items like the issue of firmness of capacity. I am happy to hear Paul saying that exchanges cannot solve everything. I am indeed convinced that the TSOs can achieve a big improvement through closer co-operation, just as the exchanges have through market coupling.

Another important area for improvement is transparency, as mentioned by Johannes Kindler in his article. Indeed we need more transparency to the market as a whole, applicable to both OTC and exchange trading alike. The main objective should be transparency of the availability of physical assets: transport and generation capacity, like the arrangements currently employed in the Nordic countries. This will raise liquidity to the next level.

Finally, I found it encouraging reading the outcome of the survey, where many respondents supported the view that exchanges have increased liquidity in the wholesale market in electricity. The electricity market is fairly well developed but, the gas market on the European continent seems at the starting gate from a regulatory point of view. Yet, paradoxically, the gas market is more mature than electricity in other respects: it has always been much more international and less country-oriented.

Therefore, it is to be hoped that we will not experience the same fragmentation as we have seen in electricity. Gas is more international and price-homogeneous to begin with. As an exchange, we have built on our experience in the UK market which is, still by far the most liquid gas market. The objective should be an integrated European gas market as soon as possible, and I am sure that exchanges will play an important role.

If you have any comments please e-mail us on *apx@apxgroup.com*. ■

Best wishes,

Bert den Ouden

CEO, APX Group

Expanding Role Envisaged for Energy Exchanges

According to Moffatt Associates' latest quarterly survey, the majority of market participants consider that energy exchanges have stimulated market liquidity in both gas and power. Further expansion in both exchange and OTC trading is expected in the next three years.

This issue of Energy Viewpoints focuses on the future role of exchanges and the relative merits of exchange and OTC trading.

More liquidity in power than gas

Between 70% and 80% of survey respondents believe that energy exchanges have increased market liquidity, particularly in the wholesale power markets.

Below are some typical comments from traders:

"For power definitely, if you have an exchange you get new entrants to the market, e.g. the financial institutions that don't need to know much about the market. Also there is easy access and easier credit."

"(a) Yes (in power), but only moderately due to high fragmentation (one or more exchanges per country) and consequent high costs and lack of efficient margins, (b) No (in gas) as underlying physical spot markets in Continental Europe have yet to develop sufficiently (which in turn is due to lack of proper TPA to gas grids and transmission)."

"Yes (in power), they have increased liquidity because they provide a consistent and reliable long-term benchmark and guarantee the existence of the markets. You need exchanges to make sure you can get rid of risk or take it on. They are a sign of stability."

"Yes (in power), due to the fact that we can balance our position through the exchanges. In fact, the liquidity of the power exchanges will affect the development of the forward power market."

"Not in gas, but yes in power. Exchanges have helped new entrants in gas but I don't see exchanges as vital. They are necessary for balancing but I don't see the volumes. In power they have helped, especially the smaller players e.g. in Germany."

Trading opportunities and limitations

Respondents were asked to say whether they agreed or disagreed with certain specific statements relating to the relative merits of exchange and OTC trading in power and gas.

A summary of responses is set out in the table below:

Scenario	Agree	Disagree	Don't Know
Exchanges provide a level of price transparency which is lacking in the OTC market	62%	34%	3%
In gas trading, exchanges (where they operate) provide reliable spot market prices	34%	38%	28%
In power trading, exchanges (where they operate) provide reliable spot market prices	79%	11%	11%
Exchanges should offer more opportunities for purely paper/financial trading	61%	7%	32%
Exchanges offer the most efficient platform for cross-border trading (e.g. market coupling)	54%	32%	14%
Currently trading on exchanges is prohibitively expensive relative to the OTC market	50%	39%	11%
The value of contract clearing via an exchange offsets the additional cost of trading	18%	50%	32%
Exchanges and not TSOs should be responsible for publishing market data on capacity, flows and storage	34%	59%	7%
Regulators should encourage more trading via energy exchanges	25%	64%	11%
More trading via exchanges would reduce the role of excessive financial speculation in energy markets	14%	75%	11%
Currently there are too many exchanges in Europe	50%	36%	14%
There should be one exchange for each regional energy market (as defined by ERGEG)	52%	41%	7%
There should be only one exchange platform for gas, power and CO_2 trading for the whole of the EU	34%	59%	7%
Exchanges should be independent of Government and/or TSOs if they are trading financial (paper) contracts	83%	10%	7%
Exchanges can be owned by a Government and/or TSOs if they are only trading spot (physical) contracts	48%	38%	14%

Advantages of OTC trading

Generally market traders consider that exchanges offer significant advantages in terms of transparency, spot power price reliability, reduced credit risk and market coupling **(see previous table).**

But the market is opposed to regulators forcing more trading via exchange platforms because at the moment OTC trading is more flexible, cheaper and offers more specialised products.

Below are some typical comments from traders:

"Lower costs of OTC and the ability to design tailor-made products that are not available on the exchanges."

"The main benefit of OTC trading is the cost advantage and to an extent it is less strict on rules and regulations so there is more flexibility."

"OTC trading is important as a complement because traders have much better customer contacts and there are tailor-made and specialised products."

"The ability on the OTC market to negotiate prices."

"In gas, traded volumes are set to grow strongly but this will largely be OTC. Exchanges will only get significant volumes if they offer interesting products that are not available OTC – e.g. a day-ahead cleared price for gas."

Expanding role of exchanges

Traders believe that trading on both exchange and OTC platforms will increase significantly in the next three years.

Below are some typical comments:

"Yes, I think the main issue is the credit issue. Trading on exchanges is safer and that is why people get involved e.g. financial institutions will come to the exchanges."

"Yes, trading via exchanges will probably increase, but not necessarily stronger than brokered OTC trading (as far as forward trading is concerned)."

"Yes, it's an idea whose time has come. It has been slow to develop but there will be pressure in the market to see exchanges operate better."

"Yes, because credit is moving the focus – most energy companies are less credit-worthy than financial institutions."

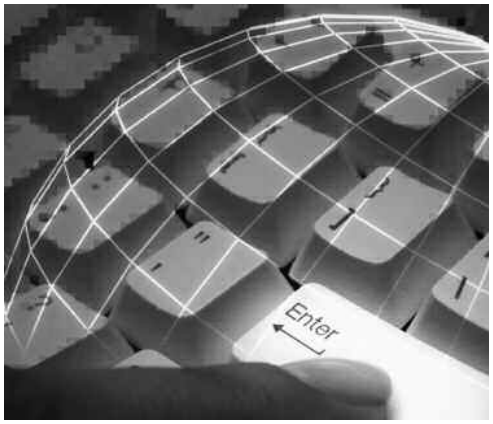
"Yes, because I think there will be a greater focus on credit, people will take credit more seriously and I think the increase could be very significant."

"Yes, if there are more consolidated exchanges with more products, with incentives to trade on exchanges rather than OTC. At the moment there are no incentives to trade."

"Yes on some. Some exchanges may disappear and the trade will be taken up by others, where trading will take off. It won't increase in 12 months, but it should in 5 years, so it probably will increase in the next 3 years."

"Yes, because it is a natural development of the market, more players are involved in it and these won't want to have the infrastructure that is needed for trading OTC."

Moffatt Associates
MAY 2008



Markets of Choice are the Secret to Liquidity

According to Peter Terium, CEO, RWE Supply and Trading, we need the co-existence of power exchanges and OTC markets and better EU-wide regulation to realise the vision of a single EU wholesale energy market.

Wholesale market success

Power wholesale trading in Europe is a success story. This would not have happened without the OTC markets. Recently, it has become fashionable to blame OTC as an opaque area or a "grey" market and argue that only exchanges can promote market integrity, liquidity and trust.

I am very much in favour of strengthening and consolidating the energy exchanges in Europe. For example, I support the co-operation between EEX and Powernext. But "either…or" seems to me a one-dimensional approach to increasing trust in wholesale power markets in Europe.

I am convinced that we need both markets since they complement each other. In the history of market development, OTC trading traditionally precedes the creation of exchanges and supplements continuously their range of products and services. Market participants use OTC as a flexible means of securing their supplies.

The variety of products available is proof of the innovative power of OTC trading. Exchanges deal with different demands and offer standardised products in a liquid market as well as a reliable clearing mechanism. Both markets are professional and offer a sufficient level of transparency.

Even in developed and liquid markets, the co-existence of exchanges and OTC is a sensible platform.

Without the co-existence of exchanges and OTC trading, we would not have the liquidity nor the correlation between power prices necessary to avoid unstable market price distortions.

In short, without OTC trading there would, for example, be no opportunity for flexible power trading. This would be detrimental, especially for smaller market participants. The operation of a single "new entrant" power plant could not be secured on short notice. Furthermore, market participants who do not have assets of their own could withdraw from trading and this would reduce liquidity. To trade exclusively on the exchange would simply be too expensive for small traders or those who only trade sporadically. Only the combination of exchange and OTC trading makes it possible to have complimentary products and the 24/7 availability of trading and procurement.

Threat of rising prices

There is a strong political movement against free wholesale markets and choice due to rising power prices. But to try and protect certain customers from higher power prices by creating national ▶

fiefdoms and regulatory barriers is going in the wrong direction. Artificially creating and maintaining market barriers to close off markets and calling out "national champions" will open up a Pandora's Box.

Neglecting reliable price signals will lead to lower investment in new power generation and volatile power prices on the forward curve. Fundamentals like the growing demand from countries like China and India and the international climate protection policy are drivers of power prices that cannot be switched off.

As wholesale traders and market experts we have to tell stakeholders and counterparties in industry and politics the plain truth: globalised markets for energy and carbon will reward those who can efficiently react to the forces of supply and demand. That includes optimising and hedging our own supply and demand for energy and its derivates by using the manifold possibilities offered by power trading across borders.

Harmonising trading rules

To strengthen wholesale markets, the EU Commission has to harmonise trading rules and structures. This should include both intelligent "market design" and "better regulation." As long as regulation ensures the same rules of the game for everyone, the markets will continue to attract liquidity and ensure that there is an optimal balance between supply and demand at fair prices.

One of the major challenges facing the EU power market is to establish transparent and market based capacity allocation mechanisms at the borders in order to ensure the most efficient use of transmission assets for the ultimate benefit of the European electricity consumers. The crucial instrument in this respect is the establishment of European-wide transparent, auction-based capacity allocations. Functioning spot exchanges and complementary market instruments such as futures contracts which can then be settled against physical or financial indices, are key components in a suitable European market platform.

One should not underestimate the lack of current opportunities to enter into any long-term trading of transport capacities. The physics of power transport involved in this equation are important. Thanks to intensive power trading many projects have been initiated to improve the infrastructure of the grids and improve the physical flow of power. Ever since power has had to cover larger distances and move beyond national borders, the physical bottlenecks have increased.

The transfer of information between supra-regional network operators must be standardised and be made available on a European-wide basis. Market coupling is of the greatest importance because, as I see it, the existing capacities are not being put to their best possible use. Too often the discussion concentrates on the interconnectors between countries. However the actual bottleneck is often not the interconnector, but the grid that lies beyond it.

In a nutshell, only with a strong commitment to the co-existence of power exchanges and the OTC markets and a European-wide agenda of "better regulation" we will be able to achieve our vision of a European internal wholesale market for energy.

We have achieved high levels of liquidity, but we cannot be complacent. Traders have to continue doing their part. My vision is something along the lines of a "Schengen Agreement" for energy trading: free cross-border travel, reduction of existing barriers, a European passport that entitles every trader to be active anywhere in Europe and enjoy the same conditions wherever they are.

Power Exchanges: Key component of a liquid wholesale market

According to Paul Dawson, Head of Environmental and Regulatory Affairs, Citigroup, the fact that exchanges provide a standardised product, observable price benchmarks and reduced counter party credit exposure will ensure their continued success.

Setting the scene

DG Competition's sectoral enquiry, the third liberalisation package and ERGEG's regional initiatives are once again stimulating significant discussion around the essential building blocks required to establish an integrated, liquid competitive EU electricity market.

In parallel, the launch of Belpex, the merger of Powernext and EEX and the planned development of a day-ahead exchange in the UK means that it is a good time to reflect on the contribution that power exchanges will make to development of the single electricity market and to consider those problems that they will help to solve, those that we cannot expect them to solve and, indeed, those that they ought not to play a role in solving.

Power exchanges' role as a key component of a liquid market

Most power exchanges originated as auction-based spot markets reflecting market participants' need to optimise day-ahead scheduling decisions in the delivery of a non-storable commodity over an integrated transmission network. However, as competition in power markets evolves, power exchanges have increasingly fulfilled the more traditional role of exchanges in providing standardised, freely tradable forward contracts, in alleviating bilateral credit constraints through clearing and in providing transparent forward reference prices and indices. To the extent that the third liberalisation package and associated anti-trust actions deliver greater competition in EU power markets, power exchanges will inevitably play an ever increasing and more prominent role in their future development.

You cannot make a silk purse from a sow's ear

While exchanges will be an incredibly important – almost necessary – component of evolving power markets, we should nevertheless resist the temptation to expect them to solve all of the underlying structural problems with competition, regulation and co-ordination between markets. If a lack of competition or the underlying market structure leaves market participants with no risk, no need or no ability to trade, then even the best designed exchange can do nothing to remedy this.

Even Belpex's achievement in providing a platform for co-ordinated congestion management across three national borders cannot address the failure of the respective regulators and system operators to maximise the transmission capacity made available across its boundaries.

Similarly, although Nordpool offers 46 contracts for difference against zonal price differences they are rarely traded and highly illiquid because the only natural seller of transmission hedges – the Nordic system operators – have no interest or incentive in participating in the market to hedge their own (long) exposure to transmission congestion.

Boundaries on exchange involvement

In most markets, exchanges compete with bilateral and over-the-counter markets to meet market participants' trading, credit-risk and collateral management requirements with their success driven by the trade-off made by participants between the exchange fees and margining costs and the benefits of anonymous access to a low-risk pool of liquidity. By contrast, many power markets have originated more by a process of design than competitive evolution to accommodate two "natural monopoly" functions inherent in all electricity markets, namely:

- "system balancing" – the need to co-ordinate physical deliveries to balance real-time supply and demand and to respect the delivery capabilities of the transmission network
- "imbalance settlement" – the need for centralised calculation and settlement of the imbalances between market participants' contracted and metered deliveries.

As competition and regional co-operation develops, it becomes increasingly necessary to retain a bright line distinction between those functions that exchanges provide on a competitive, non-exclusive basis (e.g. day-ahead trading, forward trading, clearing etc) and those which are being provided as part of the essential balancing and settlement infrastructure (e.g. system balancing, congestion management, auctioning and registration of transmission rights etc). This is not always straightforward, but is essential to ensure that the quest for liberalisation does not inadvertently create de facto monopolies in the provision of trading platforms and credit-risk management.

Where do we go from here?

Faced with the likely success of exchanges in helping to deliver the vision of the single EU electricity market, it is tempting for some stakeholders to take one step further and to argue that regulators should intervene to "encourage" or mandate further trading on exchanges. This reflects a serious confusion between the desired outcome of a competitive, liquid and transparent market with the means for its creation.

The need to trade stems from the need to manage the underlying commercial risks faced in competing to generate and supply electricity. Listing a product on an exchange is no guarantee that it actually trades if no-one has an incentive to do so (as the Nordpool experience with contracts for difference demonstrates). Moreover, in any market with effective competition it would be folly to restrict market participant's choices on how and where they execute their trades (whether bilaterally, over-the counter or on exchange). If you can take a horse to water, but you can't make it drink, then maybe the horse just hasn't competed hard enough to work up a thirst; if it has, then maybe it just doesn't like your choice of water; in neither case will you make much progress trying to force the issue.

The benefits of exchanges in providing a standardised product, observable price benchmarks and reduced counterparty credit exposure will ensure their continued success as prominent and central stakeholders in competitive EU power markets. As the market evolves, exchanges will become larger and more prominent as greater market integration and the increased commercial drive to rationalise collateral across multiple platforms results in fewer, larger, broader exchanges. However, as we continue on the path of liberalisation, we need to remember the necessary limits on their involvement and that the ultimate key to vibrant exchanges with transparent, reliable price indicators is a vibrant, transparent effectively competitive market to generate, supply and trade electricity. ■

The Future Role of Power Exchanges: A regulator's view

The design and operation of power exchanges varies substantially across the EU. According to Johannes Kindler, Vice President of Bundesnetzagentur (the German Regulator) proper regulatory oversight is essential to ensure well-functioning exchanges and greater market liquidity.

A variety of exchanges

Since the stepwise opening of the European electricity markets, electricity trading has developed rapidly in a number of European countries. In most, bilateral trading in the OTC market has been supplemented by the set-up of organised markets. The design of these power exchanges or exchange-like organisations differs substantially in the member states. Whereas there are some more or less mandatory local or regional pool models, trading on the power exchange is optional at least in the most developed member states.

As a result, there is currently a large, in some regions still growing, number of exchanges in the European electricity market with a wide range of institutional designs and traded products and sometimes overlapping market areas. With increasing liquidity at the power exchanges these markets attract not only generators and suppliers from the energy industry, but a wide community of players with different objectives, such as commodity traders, financial institutions or investment funds.

Reliable price formation

Independently of the institutional design, power exchanges can play an essential role in the market once liquidity has increased to a sufficient level. Electricity prices determined at the power exchanges will then function as reliable price indicators. This implies that prices determined by the power exchanges are of vital importance not only for participants on the exchange, but also for any kind of bilateral contract, including supply contracts for industrial and even household customers.

In the future, the importance of the prices on the power exchanges will even grow as national electricity markets become more and more integrated by the introduction of market coupling for optimisation of cross-border price arbitrage. Market coupling means that at the exchanges in adjacent countries available day-ahead cross-border capacity is taken into account in determining the energy price. With market coupling it can be expected that prices will be financially as close as technically possible on a common level.

A similar market design has already been implemented in the Scandinavian market where all the available cross-border capacity is exclusively handled via market splitting by the power exchange Nord Pool Spot. Market splitting is done at MIBEL for the Spanish and Portuguese market and trilateral market coupling is in place between the Netherlands, France and Belgium. Furthermore, the introduction of implicit auctions is planned for the German-Danish border by the end of September 2008 and for the Central Western Europe region in 2009.

The integrity of the wholesale markets and especially of the power exchanges is therefore crucial. Against the background of the increasing importance of well-functioning power exchanges and greater market integration at the same time, proper oversight of power exchanges is crucial for trust in the well-functioning of the whole market.

Varying regulatory regimes

Trading on the power exchanges – and also the energy exchanges themselves – are mostly subject to supervision already. But the supervisory schemes differ significantly in ▶

the different member states and do not always cope with the challenges resulting from the integration of electricity markets. There are fully licensed exchanges versus Multilateral Trading Facilities. There are mandatory (EU sector inquiry calls them "incentivised") versus free competitional markets. There are pure spot versus integrated spot and derivatives markets, some of which covering also adjacent products like CO_2, gas, and others. It is the view of the European Regulators' Group for Electricity and Gas (ERGEG) that a consistent supervisory scheme for the power exchanges and energy trading overall – based on co-operation among the competent national authorities – should be in place to deal with the challenges resulting from the increasing integration of electricity markets and the accompanying consolidation of power exchanges.

Need more transparency

A consistent supervisory scheme is important but is only one of the main pillars for fostering the integrity of power exchanges and wholesale markets. A major pre-condition for providing reliable price signals for the market is that the market has sufficient information. The information the market needs can be divided into two categories. On the one hand, information about traded volumes, prices and price formation rules is important. Whereas this kind of information is widely available for trading on the power exchanges, information on bilateral trading in the OTC market is not available to every market participant. On the other hand, information about the factors driving electricity prices, including for instance real-time information about infrastructure availability and generation availability, is vital. ERGEG is convinced that a Europe-wide, consistent framework for transparency will contribute to fostering market integrity. This will also combat the possibility of the manipulation of electricity markets, highly sensitive to such behaviour due to the increasing scarcity of generation capacity Europe-wide.

It must be also underlined that other energy and energy related markets, such as the gas and carbon emissions trading markets, have an impact on the electricity market to be considered. Organised gas markets are still not very liquid, due mostly to high market segmentation. Only last year, short and long term gas trading was introduced on the European Energy Exchange in Leipzig. Enlarging market areas in which gas trading can take place without restriction will encourage liquidity in these markets.

Carbon emissions trading plays a vital role in the energy markets as well. It was implemented in 2005 and liquidity has grown. A proper market design for the European emissions trading scheme is of the utmost importance, not only for emissions trading. It is also important for the integrity of the energy markets as there is strong linkage between the emissions markets and the energy markets.

The importance of a Europe-wide consistent regulatory framework for energy trading was underlined in December last year by a mandate from the European Commission to ERGEG and CESR, the Committee of European Securities Regulators, an ambitious objective. The European Commission seeks joint advice from the two associations on the oversight and transparency rules in the energy markets. This again stresses the need for a consistent supervisory framework for physical as well as financial energy trading, taking into account the specific features of the energy market.

Power Exchanges: A key contributor to European market integration

According to Jean-Francois Conil-Lacoste, CEO of Powernext, new regulations will encourage both more consolidation and competition amongst EU power exchanges.

Rush towards consolidation

Following the sudden rush of international mergers and acquisitions which has thrown traditionally low profile "bourses" into the spotlight, we should ask ourselves what is the trigger behind this development?

In many respects, it looks like a frantic reaction to a changing regulatory and competitive landscape from the global players looking to diversify. It falls short in most cases of recognising the constraints of physical power markets as well as what is required for achieving an integrated EU energy market.

Regulation encouraging competition and consolidation.

Because of MIFID, competition in the traditional securities and financial futures exchanges is increasing. For example, the big liquidity providers (the US and European majors) have launched their own colourful platform in equities ("Turquoise") and derivatives ("Rainbow") in direct competition with the exchanges. This is also true in the US with the "Four Seasons" project. They are also threatening the broker business in interest rates with the V10 project.

As a result, and in light of sky-rocketing energy prices, many of these cash-rich "financial" exchanges have gone shopping in the energy market.

A few examples:

- OMX takeover of the international activities of NordPool ASA while in turn being acquired by the US electronic cash equity market, NASDAQ
- CME Group purchasing NYMEX, which has bought a 15% stake in Imarex which in has turn acquired the energy broker Spectron
- Eurex launching the South Pool alliance with the Slovenian Borzen, while reinforcing its presence in EEX and bidding on its own for the UK power exchange tender in spite of a lack of track record in physical power markets

NYSE/Euronext preferred to follow another track and acquire the carbon trading activity of Powernext, which has worldwide potential better fitting its ambition and size than the increasingly regulated European power sector.

Expanding choice of settlement

Furthermore, the McCreevy's Code of Conduct for Clearing and Settlement will reshuffle the cards as customers will be free to choose their agencies for settlement/delivery and clearing. But in practice, there is no exchange or clearing house that can offer a full range of options for reasons of cost and complexity.

As a result, many exchanges, all served by LCH.Clearnet, have reacted by integrating their clearing. For example, ICE Futures Europe will open ICE Clear Europe in July and Euronext/LIFFE will segregate its own clearing within LCH.Clearnet, which has reacted to both these moves by linking with NYMEX.

Powernext has chosen to ally itself with a dedicated energy clearing house, ECC, owned by EEX but open to other shareholders. This compromise between horizontal and ▶

vertical integration seems to be the proper response to the needs of the market place and should facilitate the market integration process. It has also been chosen by Endex, the Dutch energy derivatives exchange.

On the broker side, it is worthwhile mentioning, (besides the purchase of Spectron by Imarex), the call by ICAP for a regulated exchange status in the fields of CO_2, power and freight, and the takeover of the benchmark system provider Trayport by GFI.

Regulatory support for exchanges

The frontiers between exchanges and brokers are blurring and competition is intensifying, especially on the power derivatives side. We estimate the potential of European power derivatives to exceed 10000 TWh/year, i.e. some 80 to 100 million euros, a significant package to compete for.

But exchange knowledge and competencies on the physical side of the business should not be ignored or underestimated.

The EU Commission's Third Energy Package has for the first time mentioned and supported the role of the power exchanges in its proposal:

"Regulatory authorities shall co-operate at least on a regional level to foster the creation of operational arrangements in order to ensure an optimal management of the network, develop joint electricity exchanges and the allocation of cross-border capacity, and to ensure a minimum level of interconnection capacity within the region to allow for effective competition to develop."

Furthermore, "Transmission system operators shall promote operational arrangements in order to ensure optimum management of the network, and promote the development of energy exchanges, the allocation of cross-border capacity through implicit auctions and the integration of balancing and reserve power mechanisms."

Regional "hubs" and integration

In this context, the spot power exchanges are the front runners. Thanks to their pools of liquidity and centralised order books, they are instrumental in the deployment of market coupling. Regional hubs will be the necessary first step for market integration.

The potential for listed derivatives will not emerge if this physical integration fails.

So far 80% of power transactions on the continent are OTC and non-cleared unlike the Scandinavian market where the establishment of NordPool has allowed 100% clearing of a solid wholesale market, representing six times the national consumption of which half of the flows are matched through the organised futures market.

It is interesting to note that the Scandinavian TSOs are the owners of NordPool Spot, while the clearing and the non-Scandinavian power activities of NordPool ASA have been sold to OMX/Nasdaq.

The integration process is at cross roads and so are power exchanges. The Central West Europe(CWE) power market coupling/splitting project will be key to success.

In order to pave the way for market splitting in the CWE region and beyond, EEX and Powernext realised there was a unique opportunity to merge their spot and futures power activities into dedicated exchanges. TSOs will be involved in the governance of the new spot company, which is open to other partners (Belpex has already signed a letter of intent and APX spot is welcome).

This is a timely and logical move, to create an exchange platform covering one third of all European electricity consumption as well as a decisive step towards broader market integration. ■

The Evolution of Exchanges: An OTC perspective

According to Phil Atkinson, Director of Corporate Development, ICAP Energy, the relationship between OTC broker, exchange and clearing house poses a transparency challenge for regulators and future providers of wholesale market liquidity.

Exchanges and liquidity

In a recent article published in the Financial Times, Clara Furse, CEO of the London Stock Exchange, expressed concern over the vertical silo model of exchanges, where an exchange has ownership of its own clearing operation. Such vertical silo models enable exchanges to control liquidity and both execution and clearing.

In European power markets both Nord Pool joined the EEX earlier this year in offering the German market products with the exact same specifications, the only difference being where the transaction was cleared.

OTC brokers have on numerous occasions been faced with the scenario where a deal could be matched between buyer and seller on a given product common to both exchanges, but the deal cannot complete due to the lack of inter-operability between the two clearing arms of Nord Pool (Nord Pool Clearing) and the European Energy Exchange (European Commodity Clearing).

Here we see two operations using the vertical silo model, i.e. "You trade in "my market" and you have to clear in "my clearing house." This has a negative effect on liquidity and transparency, as traders elect to do their trading for the same product with both exchanges.

Both markets (Nord Pool and Germany) have a number of features which connect the two markets. Most of the larger producers and financial institutions trade both markets. Strong price correlation between the Nord Pool and Germany and continued efforts to integrate the physical markets have strengthened this relationship. But, unfortunately with a lack of inter-operability between the two respective clearing houses, we are unlikely to see any major liquidity developments in the near future. In fact volume growth across all exchanges is forecasted to be negative for 2008.

The relationship between OTC broker, exchanges and clearing creates a market transparency challenge for the regulatory ▶

Figure 1 – The European Landscape – OTC and Exchange Volumes

Estimated Volumes 2008	Volume Twh 2008	OTC Volume TWh	OTC Market Share
Nord Pool	2,200	1,100	50%
German Physical	4,000	4,000	100%
EEX	1,100	825	75%
Dutch Bilateral	320	320	100%
Endex	110	83	75%
French Bilateral	400	400	100%
Powernext	80	8	10%
Spanish Bilateral	140	140	100%
Total	**8,350**	**6,876**	**82%**
Total TWh Bilateral	4,860	4,860	100%
Total TWh Cleared	3,490	2,016	58%
Euro Markets Bilateral	4,860	4,860	100%
Euro Markets Cleared	1,290	916	71%
Euro Markets ex Nord Pool	6,150	5,776	94%

authorities and perhaps more importantly for the current and future liquidity providers in European energy markets.

It is clear that the OTC broking community is the major liquidity holder **(see Figure 1 on the next page).** If one extracts the volume traded on Nord Pool with its high levels of transparency, then the OTC broker community accounts for over 90% of the total traded volume and over 70% of the cleared volume.

Competing OTC platform

One should perhaps ask the question why markets such as the EEX, Endex and Powernext have been unable to achieve the same levels of market transparency as Nord Pool, especially in derivates.

The reason is simple. The electronic market places within the OTC community in combination with the application of Trayport's Trading Gateway technology provide the trading community with confident levels of electronic liquidity in combination with voice broking support – i.e. the hybrid broking model. All OTC brokers offer exchange look-a-like products on their electronic platforms (now regulated MTF's under MiFID) and trading firms using the Trading Gateway technology facilitate the viewing and execution of best prices across multiple markets/OTC brokers on a single screen.

This may be termed a synthetic exchange and does provide the trading community with transparency across multiple asset classes and brokers on a single platform. This also provides such users with more efficient post trade management.

Interestingly, we have seen Nord Pool, EEX and others link their existing exchange liquidity into the Trading Gateway to embrace broker liquidity into one big pool of prices. ▶

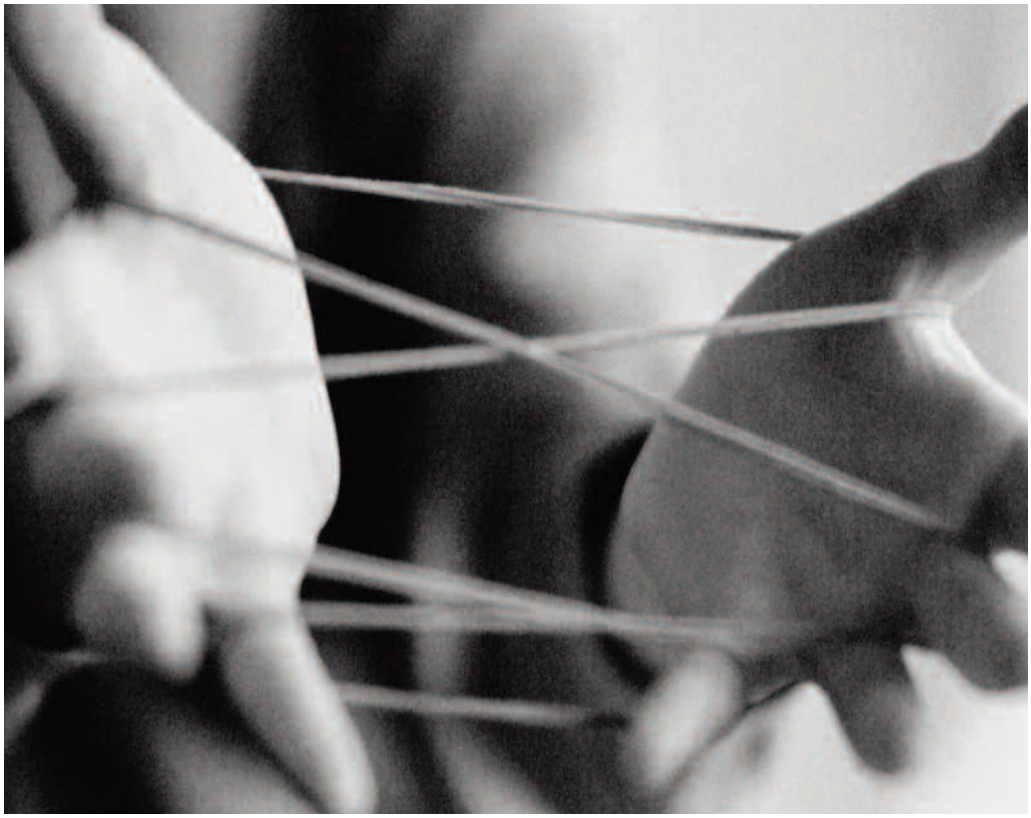
Future role of exchanges

So what is the role of the exchanges and what is their future? We see that global players, such as NYSE, NASDAQ, EUREX and NYMEX, are all involved in various transactions/co-operative ventures etc. The belief is that their expertise and relationships will add value to the market and provide market players with new opportunities. But with a combination of financial and physical players all wanting to enter markets with high levels of transparency and clearing solutions that enable them to net cross border positions, one has to ask the question whether exchanges with their vertical silo approach will be able to provide such an offering.

With the OTC broking community offering valuable voice and electronic services and the trading community making use of Trayport's Trading Gateway, the exchanges to maintain an electronic exchange that can offer competitive levels of liquidity.

One may envisage greater co-operation between the exchanges and the OTC broker community such that the execution services are left with the broker and the exchange's prime function is to set the rules of the game. Is anonymity an issue? Anonymous trading exists already on OTC platforms and again with increasing regulation and a tightening of internal compliance procedures for OTC brokers the OTC option could provide as secure a trading environment for market participants as exchanges.

Transparency is a bigger issue in physical spot markets. Although only 20% of the European (excluding Nord Pool) power markets are cleared there is a high level of transparency amongst customers who trade the bilateral forward and cleared future markets. OTC brokers have access to all OTC clearing services and market participants seem satisfied with the present transactional possibilities. The key question for this year and beyond is: "Can clearing houses come forward with a solution that facilitates cross-market clearing without causing liquidity and transparency fragmentation?"



European Energy Market Trends Survey – Spring 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 and 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 April 2008.

This quarter we received contributions from 30 senior market participants from 10 European countries (Austria, Belgium, Denmark, Germany, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland and the UK).

The key findings are as follows:

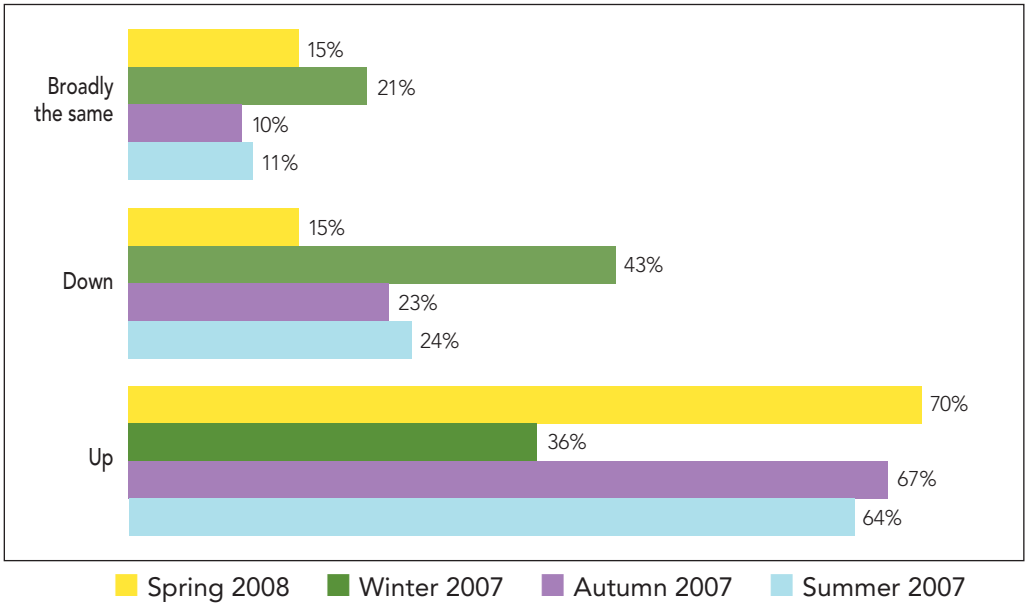
Market Trends:

• Both for **power prices (70%)** and **gas prices (63%),** the prevailing view is that prices will increase over the next twelve months in comparison to last quarter's results which indicated a fall.

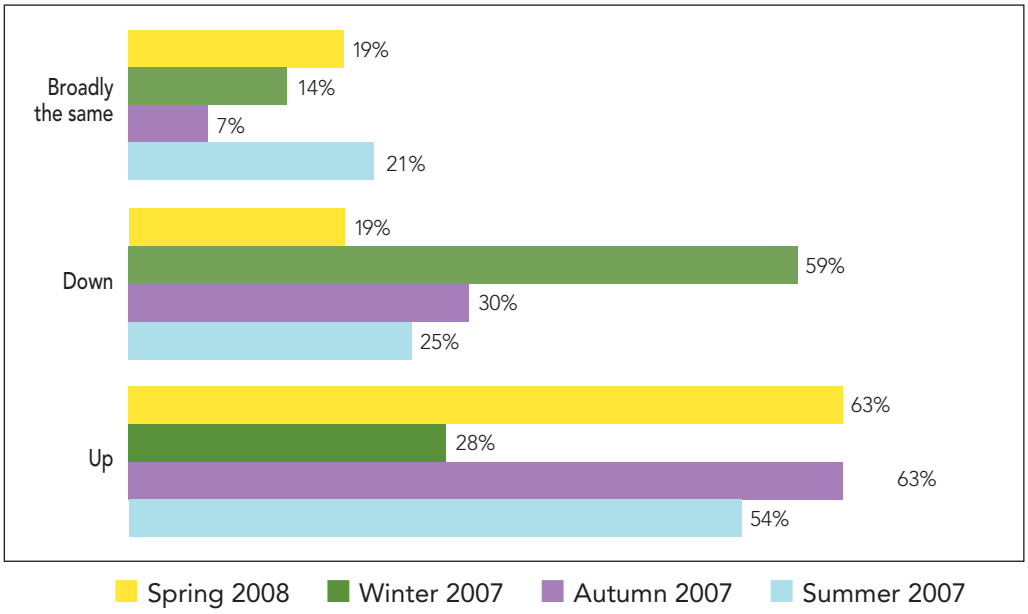
• **Spot power price** expectations have changed dramatically, with a 94% increase in the number of respondents believing that they will increase over the next twelve months – increasing from 36% to 70%.

• In parallel the gas market also experienced a sharp rise in the number of respondents expecting European **spot gas prices** to increase over the next twelve months with 63% of respondents stating this would be the case, compared to just 28% last quarter.

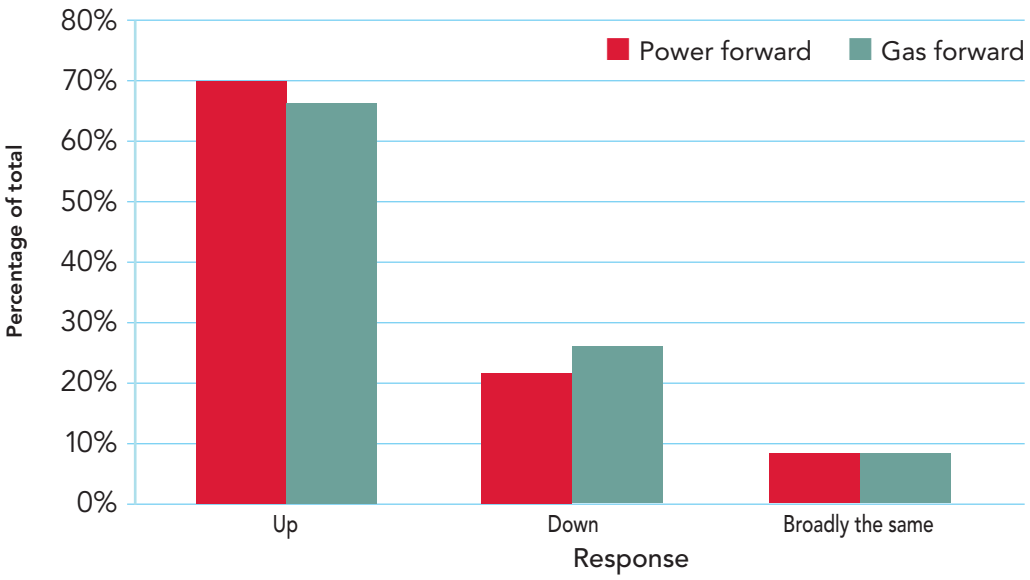
Electricity – What will be the underlying trend for spot energy prices across Europe in the coming 12 months?



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

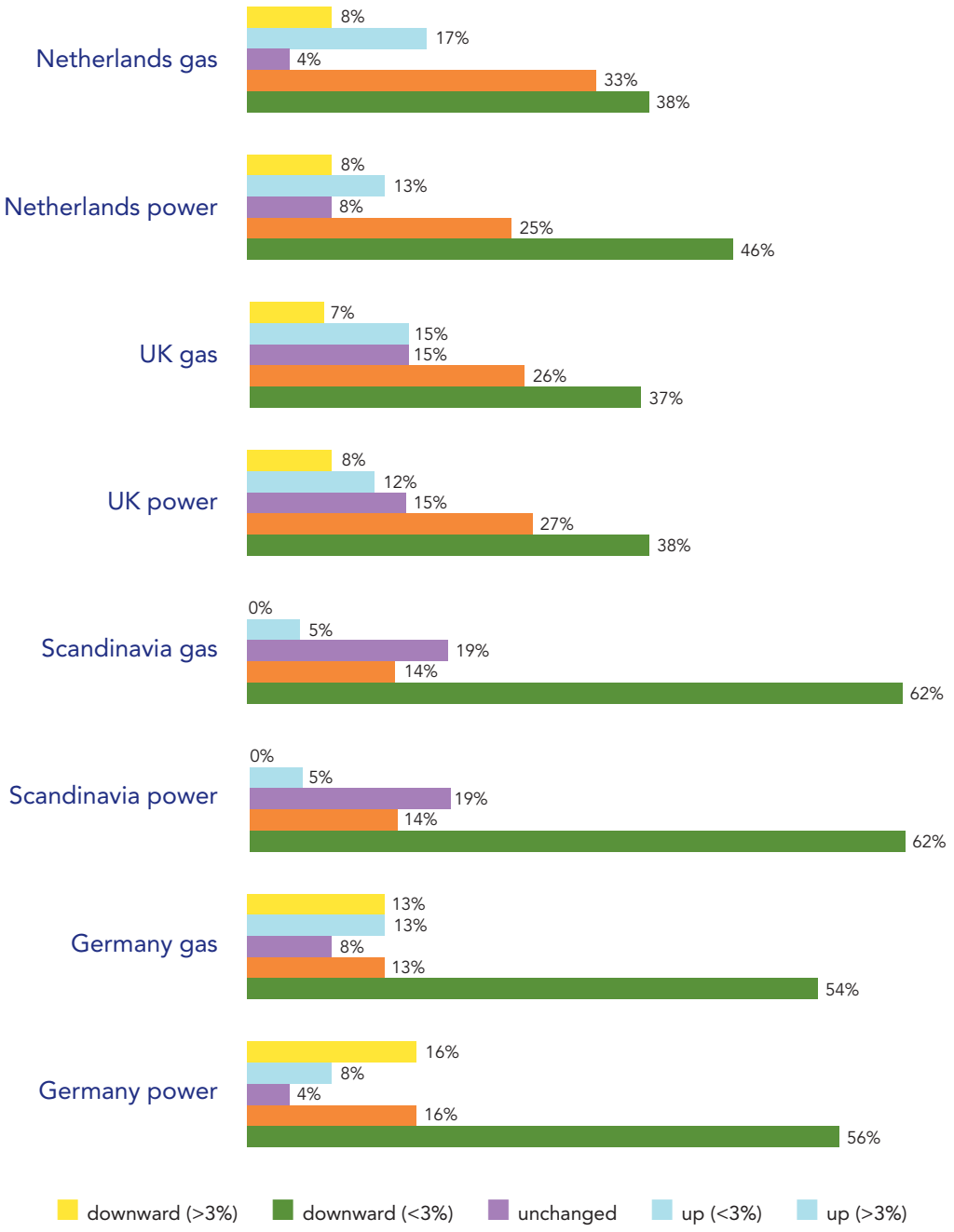


Forward energy price predictions



Forward energy prices in Europe presented consistent expectations across both gas and power, with an identical outcome to that of spot price expectations.

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



The majority of our panel (70%) believe that prices are going to rise, this compares to 19% who believe prices will fall and 11% who believe prices will remain unchanged.

Within **Germany** and **Scandinavia** the **underlying trend** of **gas and power** prices is expected to rise by more than 3% over the next twelve months, with responses ranging from 62% (Scandinavian gas and power) to 54% (German gas) and 56% (German power).

Results within the other markets were not as significant with opinion generally split between a less than 3% rise compared and a greater than 3% rise. However as can be seen from the chart not one market is expected to experience price rises below 3%.

Key Factors Influencing Energy Prices

For the following five issues our Panel of experts was 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 Winter 2007 survey the environment was seen as most significant factor, as was the case a year ago in the spring 2007 survey. However once again the panel now feel that movements in the prices of fossil fuels (e.g. oil and coal) have the greatest influence upon energy prices. Fossil fuel price movements were rated the most significant factor in the 2007 Summer and Autumn surveys

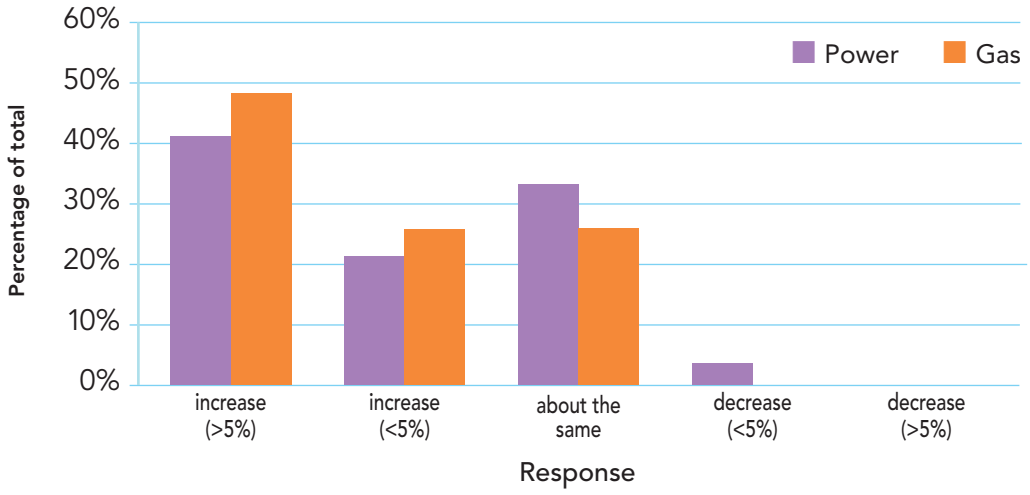
	Spring 2007		Spring 2008	
	Direction	Significance	Direction	Significance
Movements in fossil fuel prices	Upwards	3.7	Upwards	4.3
Environmental pressures	Upwards	3.8	Upwards	3.8
Infrastructure developments	Downwards	2.6	Downwards	2.2
Market liberalisation	Downwards	2.4	Downwards	1.9
Industry consolidation	Upwards	2.2	Stable / Upward	1.8

- It is interesting to also note that industry consolidation and market liberalisation are not seen as exerting significant impact on prices. Other factors which were also mentioned by our panel included the impact of the global economy and improving regulatory framework. Which were both given a downward rating in direction and a significance of 3 and 2 respectively.

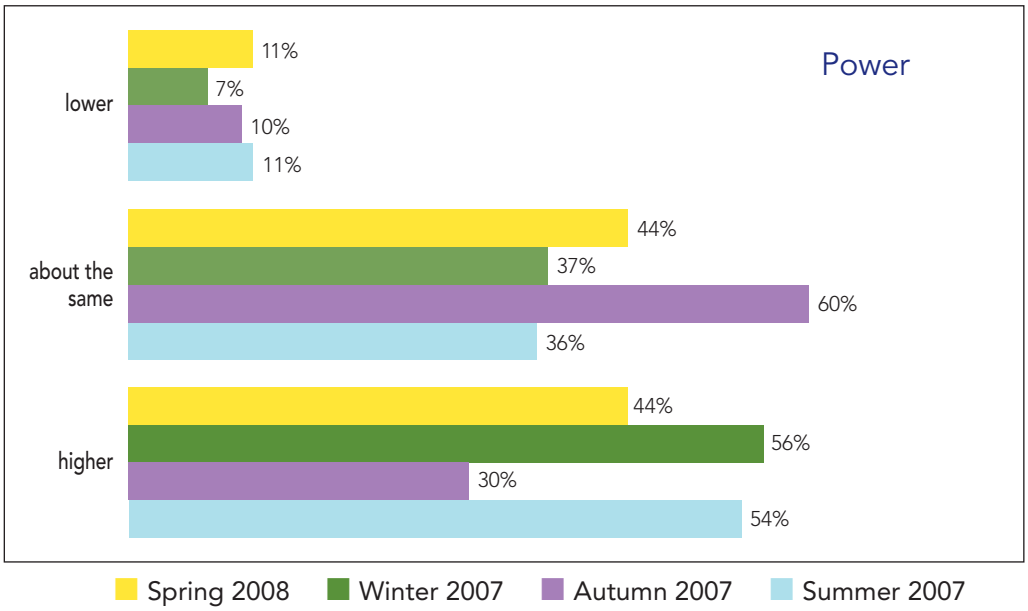
- Respondents whose companies have some cleared traded volumes said that, on average, 33% of their trading was cleared (down slightly from 34% in the previous quarter)

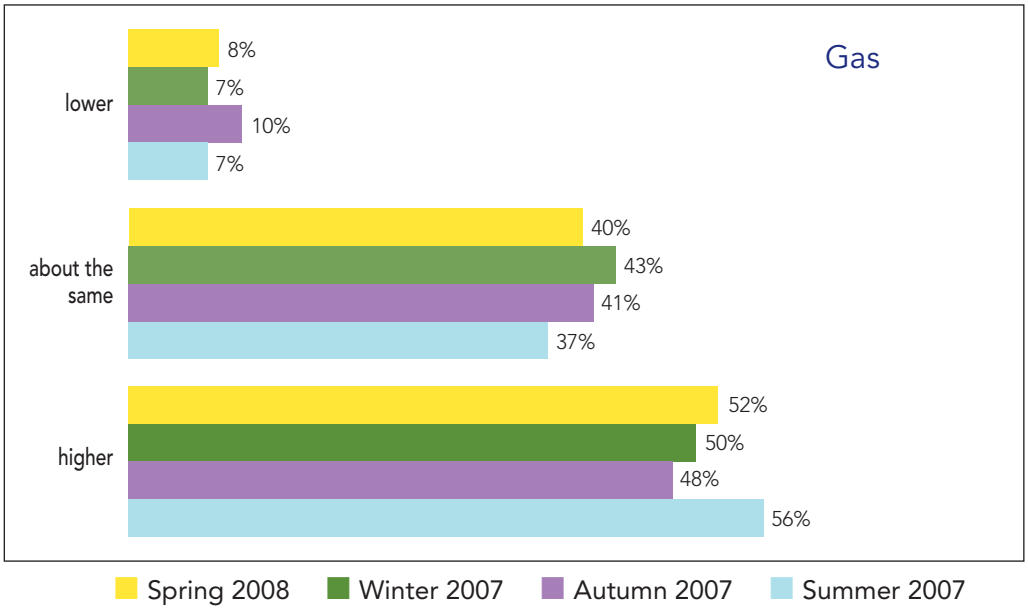
EU energy market trading activity

- EU energy market trading activity (defined as volumes traded – exchanges and OTC) will increase over the coming 6 months, according to a majority of respondents. For power, 63% said activity would increase; for gas, the figure was 74%. The panel favoured a more substantial rise with 41% (power) and 48% (gas) of total respondents indicating a rise of more than 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, 44% of respondents expect this either to remain about the same or increase within the power market. Whereas for gas respondents believed there would be a rise in activity (52% up from 50%).

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

The main issues that respondents felt would be significant were the clarification of TSO the unbundling, generation mix and ETS, with CO_2 and coal prices incentivising gas, nuclear and renewable forms of energy. Further market integration, market coupling, and the possible effect of LNG globalisation on the European gas market. Finally, some pointed to the credit crunch and a possible US recession having the effect of lowering energy prices if demand falls. ■

APX Group News

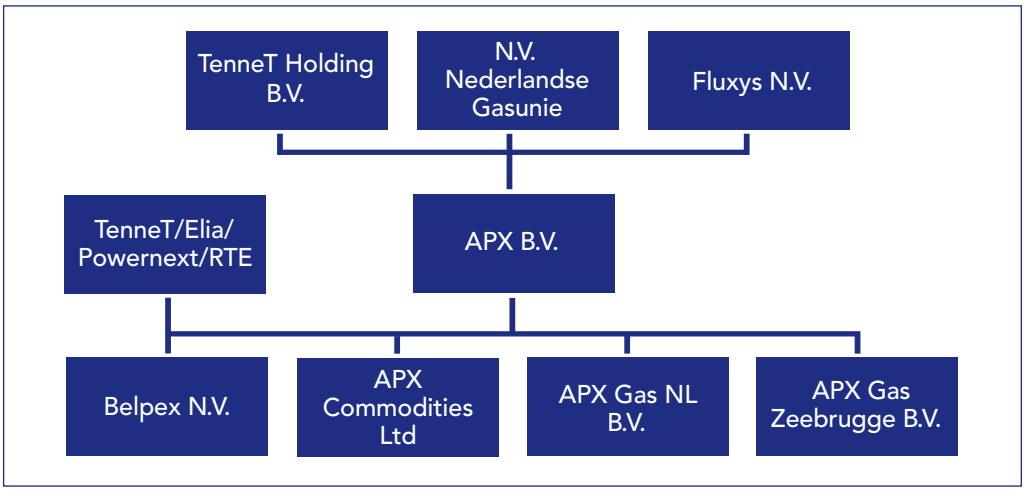
Results Financial Year 2007

In April 2008, the APX Group announced its 2007 financial results. The EBITA (Earnings Before Interest Taxes and Amortisation) remained stable at €9.8 million, while the 2007 Net Income amounted to €7.5 million, a decrease of 15% compared to €8.8 million in 2006. This is mainly due to a one-off tax benefit and increased operating expenses resulting from the development of new services. €3.9billion worth of energy contracts were cleared and notified in 2007. APX Group's 2007 revenue totalled €26.6 million, a 5% year-on-year increase compared to €25.4 million in 2006. This revenue increase is due to growth of volume on the NL and UK power exchanges and on the continental gas exchanges, in addition to an increase in memberships to 217, an increased of 12% over the year. In 2007 over 800 trades per day occurred on the APX Group continuous exchanges making APX one of the most active energy exchanges in Europe.

Change in Shareholder Structure

The APX Group shareholder structure has now changed to include Fluxys N.V. which acquired 2.68 % of APX B.V. (APX Group) shares from TenneT Holding B.V. In addition, the Group acquired the 42% share of APX Gas Zeebrugge B.V from Huberator N.V.

The new organisational structure is as follows:



Trayport Integrated on all APX Markets

In March, the Trayport interface was fully integrated on all APX markets. APX is pleased with the number of members that are testing the Trayport/EuroLight interface in our Member Test environment. To support this demand and to reflect the importance of this interface, APX has formed a dedicated Trayport support team. This team has assumed the handling of Trayport related queries, both remotely and at members' sites.

New Services

Public Indices Summary for Dutch Power

The APX Power NL spot market publishes daily indices which are used as a point of reference in the energy market. In February, the APX Base Peak, Off Peak and the recently launched Super Peak index summaries were made publicly available for viewing on the APX Group website www.apxgroup.com. The information will cover daily averages for the indices going back to November 1999 and will provide the market with reliable, robust and easily accessible indices. The newly launched Super Peak Index provides a summary of the Market activity between 08:00 and 20:00 CET. The day-ahead super-peak volumes and prices will be published every week-day.

Cross-border Capacity Trading & Gas Regional Initiative (GRI)

APX successfully launched its Capacity Usage Rights (CUR) market on the 14th May 2008, offering secondary firm cross border capacity usage rights to its APX Gas NL members within existing membership rates, in addition to trading gas on the Title Transfer Facility (TTF), the virtual trading point of GTS for gas in the Netherlands.

The CUR market is expected to help solve the contractual congestion at the Bunde/Oude Statenzijl crossing. Removing part of the congestion will improve access to the market and therefore further the development of a regional North-West gas Regional Energy Market and the Dutch 'gas roundabout.'

UK Gas Storage Capacity

In June 2008, APX will launch storage trading in addition to spot gas on the on-the-day Commodity Market (OCM), the largest spot gas exchange in Europe. APX Gas UK members will be able to use existing collateral provided for trading on the OCM, while all contracts traded on the APX Gas Storage Market are fully collateralised to ensure risk is fully covered at all times. The APX Group is the central counterpart to all trades; all contracts are traded anonymously, then cleared and settled by the APX Group. All trades at Rough, the largest gas storage facility in the United Kingdom, will be notified to Centrica Storage Ltd., a supplier of physical gas storage in the United Kingdom. The transfer of commodity or capacity will be made on behalf of members via StorIT, Centrica's online customer services system.

Broker OTC Give-Up Service (update)

APX will launch a broker OTC give-up service on the as a follow up to its recent successful UK power offering. APX will be in discussions with potential brokers in order to facilitate this service with a view to a launch later this summer.

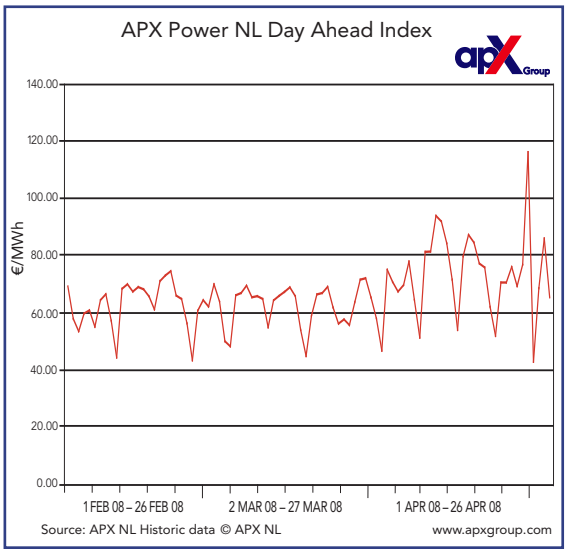
APX NBP Products

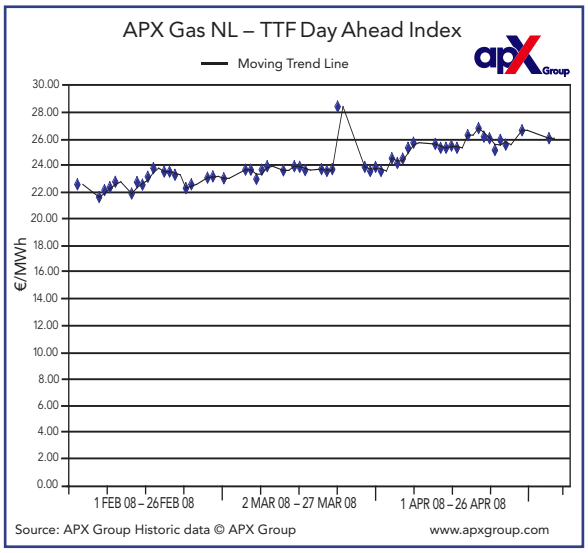
To improve liquidity on our NBP Prompt products, APX is investigating improved margining and collateral efficiencies on our listed NBP products for periods up to balance of month. The products will be launched in consultation with our Member Product Board for our UK market. Trayport's GlobalVision Gateway, upon which members' can now map APX Gas products across all of the APX Gas markets, will further support visibility of these products to prompt traders. The NBP trades will be nominated and cleared with APX as central counterparty, giving UK Gas traders greater flexibility to manage positions.

Memberships

Memberships on the APX exchange have increased with the addition of Agder Energi Produksjon AS to APX Power NL. Agder Energi Produksjon AS is a Norwegian energy company engaged in production, distribution and sales of hydro electric power and wind power, bio energy and district heating.

APX Indices





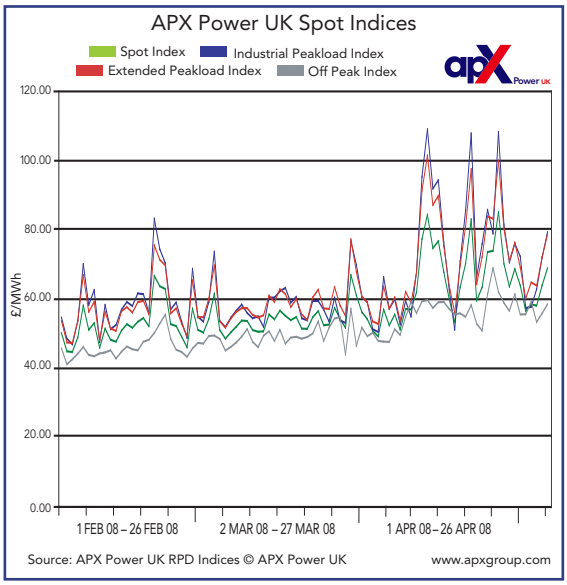
APX Power NL Day Ahead Average Prices

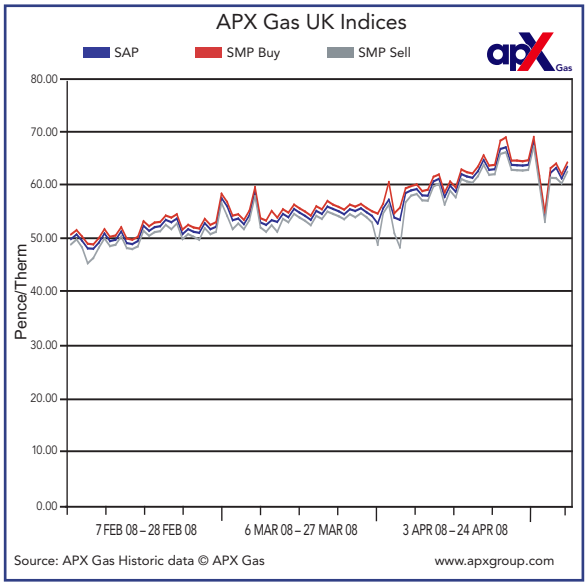
The APX published average prices are comprised of base load, off peak and peak load (07.00 - 23.00) prices based on the average price (in Euro/MWh) of Dutch power traded every day on APX for delivery the next day. Weekend prices are only comprised of base load prices and volumes.

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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