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A VITAL LINK IN ENERGY TRADING

Energy Viewpoints

Developing Energy Markets

Issue 1 – Winter 2004/05

Developing Energy Markets

Contents

Dear Reader,

It is with some pride that I am able to present to you the first issue of *Energy Viewpoints*. This new quarterly bulletin is sponsored by APX Group in association with EFET (European Federation of Energy Traders), and aims to update you on relevant developments in power and gas, as identified by senior European market participants.

Each issue will have a special topic to be treated in more depth. This time, EFET – promoting European energy trading in general, and APX, European provider of energy exchanges – have chosen 'congestion management'. The way we handle commodity congestion between countries, the harmonisation of transport rules and the access to transport capacity will determine whether we are able to build a truly open European market, where electricity is indeed free to flow.

As the CEO of APX Group, I can assure you that we will continue to support initiatives targeted at removing existing trade barriers. Our international expansion, our role in gas and the co-operation on market coupling with Belgian, French and Norwegian partners are proof of this. With EFET, I also hope that *Energy Viewpoints* may contribute towards further developing the European energy markets.

Enjoy reading and please do not hesitate to send your feedback to us at **apx@apxgroup.com**.

Bert den Ouden
CEO

1. Removing barriers to cross-border trading

i. Congestion management – issues, opinions and solutions

This quarter's energy trends survey shows that congestion management is regarded as one of the most important issues facing energy markets today (see page 16). Cross-border power flows are an integral part of a single energy market, but congestion at certain key points of the European network is hindering development.

The free flow of power across borders is essential to promote a genuinely integrated energy market in Europe. Even though markets are in the process of being liberalised in line with EU directives, inadequate and congested interconnections mean that some generators are able to retain market power in their home markets, obstructing new entrants. A significant amount of transmission capacity remains on long-term contracts, especially in areas where the market price differences at the borders are highest, for example at the Italian border.

The European Commission wants to see market-based methods introduced into congestion management as soon as possible, enabling an economic value to be placed on the product being traded, i.e. transmission capacity. Non-market based methods work where there is no competition, but if there is to be a fully functioning competitive market, cross-border exchanges will clearly have to be managed under market rules.

The power of the incumbents was often cited by respondents to the survey as a major barrier to effective congestion management – the formulation of a transparent and coordinated system of congestion management in the EU could help to mitigate market power in many national markets.

A strong transmission system and adequate interconnector capacity between regions and between countries would enable generators to compete directly against each other, thereby providing an effective basis for a competitive market.

Congestion has the effect of fragmenting markets into smaller zones – the opposite of the integrated market for which the EU is striving. Congestion can also vary over time and place, changing both the size of the relevant market and the problem of market power from moment to moment and place to place, and making resolution of the problem more difficult.

Congestion management methods

Of the most congested interconnectors in Europe, 12 are managed by market-based methods, and 14 interconnectors have a joint method agreed between the TSOs or regulators concerned. The latter mostly involve either a 50/50 split of the capacity, capacity obtained from the TSOs, or the unilateral allocation of capacity.

Table 1 shows the main current methods of congestion management used for the major interconnections in Europe.

Table 1. Congestion management methods in Western Europe

Method	Involved interconnections
Priority list	Austria – Germany Austria – Switzerland France – Belgium France – Germany France – Spain France – Switzerland
Pro-rata	Austria – Italy France – Belgium France – Germany France – Italy France – Spain France – Switzerland Italy – Greece Italy – Switzerland
Explicit auctions	Belgium – Netherlands Denmark – Germany France – UK Germany – Netherlands Greece – Italy
Market splitting	All interconnections within the Nordic region
No allocation mechanism	Austria – Switzerland Germany – Austria Germany – Switzerland Germany – France

Source: ETSO

Priority list management is conducted according to the 'first-come-first-served' principle, where the marketer obtains capacity in a priority order until the whole of the available transmission capacity (ATC) is allocated. Pro-rata rationing is where capacity is allocated in proportion to requests if they exceed the announced ATC.

Market-based methods

Market-based methods are essentially market splitting, auctions and counter-trading or re-dispatch. In the Nordel region, transmission capacity is already allocated implicitly by dividing the energy market into price zones (market splitting), while there are explicit auctions on the UK/France interconnector and the Dutch/Belgian and Dutch/German borders.

In explicit auctions, only the transmission product (MW) between the two areas is traded, while implicit auctions are where both the energy (MWh) and the corresponding transmission product (MW) between bidding/price areas are traded simultaneously and are coupled. This allows transmission capacity to be allocated according to energy trading requirements.

However, one major disadvantage of explicit auctions is that they do not allow the netting of imports and exports, a requirement of the EC Regulation on Cross-border Exchanges (1228/2003), in contrast to implicit auctions, where this is possible. Explicit auctions could also lead to a fragmented European market, whereas implicit auctions could allow the creation of a single, integrated market. However, developing the process of implicit auctions will take some time, as they would require the existence of sufficient power exchanges to handle imports and exports through the spot market.

An implicit auction requires a power in both the importing and exporting areas. A number of power exchanges have already been created in different markets and future implicit auctions of transmission capacity could provide an interesting commercial opportunity for the power exchanges, if they can develop sufficiently attractive tradable products.

A third option, that of counter-trading or the re-dispatch of capacity by TSOs to alleviate congestion between bidding areas, is also under consideration, but this could be expensive.

Need for a clearer set of rules

Many respondents to the survey believed that the European Commission has a major role to play in formulating a solution to congestion management by establishing a clear framework of rules. The EC has been active in trying to resolve the situation, and the above-mentioned EC Regulation of June 2003, which came into force on 1 July 2004, addressed this issue directly. This declared that congestion management should be non-discriminatory, market-based and preferably non-transaction based. The regulation also stated that day ahead transmission capacity could be allocated either by explicit auctions, or preferably by implicit auctions.

Although the Regulation has laid the basis for resolving congestion problems on the European grid system, the details of how to do this remain to be resolved. The current situation in which different methods are used to resolve congestion difficulties is clearly no longer tenable in a single energy market, and the search is on for a coordinated approach.

A report by consultants Consentec and Frontier Economics, commissioned by the EC and published in June 2004, concluded that there is no one single optimal solution for congestion management in the EU, but that further consideration should be given to two options:

1. A hybrid of implicit and explicit auctions
2. A mechanism of purely explicit auctions

A combination of explicit auctions for long-term physical capacity rights and implicit auctions may be the most likely choice, but the conclusions of the report are still under consideration.

Working towards a solution

Work on finding an acceptable solution is also progressing within other organisations. ETSO (European Transmission System Operators) is heavily involved in finding a coordinated method of congestion management, and is working closely with others within the EU's Florence Regulatory Forum and bilaterally with other interested parties, including EuroPEX, the Association of European Power Exchanges. ETSO and EuroPEX have established a Joint Working Group to look at the issue and produce further proposals.

In an interim report published in September 2004, the working group recommended Flow-based Market Coupling (FMC) as a possible solution to cross-border congestion. This incorporates flow-based modelling to maximise the inter-regional transmission capacity that can be made available without compromising system security, and market coupling to enable competition across regions, subject to available transmission capacity. This approach was supported at the last Florence Forum in September 2004, with the Commission setting up a number of regional mini fora to develop implementation plans, with FMC as their 'point of departure'.

Working towards a solution (contd)

It will be some time before a coordinated method of congestion management acceptable to all can be achieved. The uncertainties associated with this were underlined by the widely differing views of members of the panel on when there would be a credible, integrated system of congestion management in Europe. Opinions ranged from a minimum of 3 years to over 10 years in some cases.

Some regional initiatives are already underway. Poland, the Czech Republic and Germany, for example, recently staged a joint auction for transmission capacity, and this initiative could be followed by others.

A project is also well advanced to establish a Belgian power exchange, Belpex, that will from the start be coupled to both France and the Netherlands using an approach based on the ETSO/EuroPEX work.

Once an approach has been agreed, the practicalities of establishing a co-ordinated system of congestion management will have to be addressed, including a timetable for the introduction of the new system across Europe. ■

This article was researched and written by Moffatt Associates, an independent research and energy market consultancy based in London.

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ii. Significant progress needed on a number of issues

Fernando Lasheras, Director of the Iberdrola Brussels Office and Chairman of Eurelectric Subgroup on Cross Border Transactions, welcomed the introduction of the Regulation EC/1228/2003 on conditions for access to the network for cross-border exchanges in electricity. This Regulation, he says, is an important and necessary step for achieving the proper integration of the different electricity markets in Europe, but progress requires action on a number of fronts.

Inter-TSO compensation, congestion management and harmonisation of transmission charges among producers and consumers are, as required by the Regulation, essential for efficient cross-border trading, but it is also important to invest in interconnection capacity.

The proper and coordinated operation of markets across Europe will not only lead to a more efficient allocation of capacity in existing interconnections, but will also help identify what new capacity is needed in the production or in the transmission network.

Inter-TSO compensation

The most important advance in this area has been the elimination of the transaction-based charges so that compensation for transits or cross-border flows is made at TSO level.

Once this particular subject has been solved, there are only two other aspects of interest: transparency, that is, better information about the way the compensation is calculated, and approval by the regulators of the specific costs involved in the compensation.

Harmonisation of charges

One important principle in the design of electricity markets is what is usually known as a 'level playing field'. To achieve this requires transmission charges to be harmonised. Applying the same level of charges to different generators is a basic requirement already in the Regulation, but from our point of view, it is not enough and could create practical difficulties in implementation. It is efficiency, that is, lower generation costs, and a proper value of the energy produced, that needs to be considered when assigning transmission charges. Only the removal of infrastructure charges from generators can guarantee a level playing field that will result in equal and efficient competition amongst generators and, as a consequence, will reduce the overall costs of generation across Europe.

Congestion management

One important aspect of congestion management is that physical flows do not always follow commercial flows. The determination of available commercial capacity often involves a simplified model to represent the way in which commercial flows are distributed amongst the physical interconnections. More coordination amongst TSOs involving exchange of data and models can certainly help make available capacity as large as possible, while complying with the necessary levels of security. The method and technical standards applied in these calculations have to be approved by Regulators and made public to the stakeholders involved in cross-border trading.

The second important step in congestion management is the allocation of available capacity. There are, as is well known, different methods for allocating this capacity. In the Regulation it is clearly stated that "network congestion problems shall be addressed with non-discriminatory market based solutions which give efficient economic signals to market participants and transmission system operators". From Eurelectric's point of view, only explicit auctions and implicit auctions or market splitting comply with these requirements. Countertrade is also a valid method to be used only if congestion is neither severe nor recurrent, but it cannot be considered a market based method of allocating capacity.

Market splitting, where available capacity is only handled by market exchanges, can be considered an ideal solution from the point of view of efficiency, as available capacity is properly netted and the revenues derived from the allocation respond to real scarcity. However, it requires a higher degree of harmonisation amongst the exchanges involved and also sufficient liquidity. If neither of these conditions is met, explicit auctioning with netting the day before must be considered the proper solution to allocate scarce capacity. This is a market based method and will certainly provide economic signals to traders or the TSOs involved.

Market coupling, in which bilateral trade is allowed along with market splitting for the day ahead, could be a compromise formula once the exchanges are more coordinated or have more liquidity. In any case, restraining the allocated capacity to individual users on the grounds of exercise of market power will certainly reduce the economic value of the congested interconnection. Furthermore, the proper use of the 'use-it-or-lose-it' or 'use-it-or-sell-it' rules can guarantee that all available capacity will be offered to the market.

Revenues generated in the process of congestion management should be primarily used to guarantee the allocated capacity or regarded as an income by the Regulator when approving transmission tariffs in the countries concerned. Revenues could also be used to develop new interconnection capacity.

New interconnection capacity

The internal energy market will not generate maximum benefits unless there is sufficient capacity among the different national markets. The European Council agreed in Barcelona in 2002 that all Member States should have by 2005 a level of electricity interconnection equivalent to at least 10% of their installed production capacity.

In our opinion, investment in interconnectors must instead be primarily determined on economic grounds, that is, on the value of the additional trade that the interconnection will bring about, including the increase in security of supply that the interconnection will mean for the countries involved. This economic assessment can only be done properly if the different electricity markets are operated correctly, including the assignment of capacity in the different interconnectors. TSOs will have to determine if new capacity is needed at national borders and, if properly authorised by the Regulators involved, TSOs will need to construct the new infrastructure, funded by users having to pay for access in the case of merchant lines, or more probably, through regulated lines, where the investment will be recovered through the national embedded transmission tariff. ■

EURELECTRIC is the association that represents the common interests of the European electricity industry in public affairs. Its objectives include supporting the process of energy market liberalisation and the pan-European integration of the electricity industry.

iii. Market based solutions for cross-border power transmission access

According to Peter Styles of the European Federation of Energy Traders (EFET), progress towards further electricity market opening has been rather modest and severe challenges remain to be faced by the European Commission and other governmental institutions, in order to match legislative change with real increased competition and greater efficiency.

The ability of a retail customer ultimately to purchase energy produced across one or more borders will depend on interactions between wholesale markets, TSO services, balancing arrangements and many other factors. Differences in market operation and structure between regions in any of these respects have the potential to produce inefficient patterns of both trade and trading. In this context, wholesale power market distortions, which remain to be dealt with include:

- Transmission access rights and the need to enhance both the (financial) predictability of network access across the EU for market players, and incentives for TSOs to provide such access
- The need to set in place coherent and cost reflective transmission access charges across each region in a manner which properly integrates market based congestion management methods and inter-TSO compensation arrangements
- The further development and integration of intra-day and balancing markets
- Limited cross border co-operation in other respects between TSOs (*inter alia* for the purpose of ensuring security of supply)
- Suggestions that there is a 'regulatory gap': The current framework of sector regulation of unbundled monopoly transmission operators and/or suppliers is designed to apply primarily within national boundaries. Little account is yet being taken of interaction across borders.

Capacity allocation and congestion management

Since 1998, one strand of the EU "Florence" electricity regulatory process has been the management of congestion affecting cross-border trade in power in the EU, particularly across the UCTE member grids of Continental Western Europe. Progress towards commonly accepted principles for allocating constrained cross-border transmission capacity was encouragingly rapid in the years 1999 and 2000. These years also marked the initiation of explicit auctions of cross border transmission capacity on the continent, with the Germany-Jutland interconnection followed by interconnection points between the Netherlands, Germany and Belgium. System users were promised the publication by TSOs of indicative, but objectively justifiable, NTC* and ATC* figures for all borders where there exist high voltage level interconnections.

(NTC stands for net transfer capacity, taken normally as physical load capability of an interconnection point under foreseen simultaneous flow conditions, at the n-1 security level, subject to deductions for TSO system balancing purposes and to adjustments for abnormal national network conditions. ATC stands for available transfer capacity, taken normally as NTC less reservations for legacy import/ export contracts or for other preferred users/ purposes.)*

A number of anti-trust and regulatory decisions, some involving intervention by DG COMP or DG TREN of the European Commission, helped pave the way for agreement by Florence Forum participants at their 6th meeting in November 2000 of quite detailed guidelines on cross border congestion management. Since then, however, progress in implementing these guidelines in relation to further borders, where market based methods had not by that time been adopted, has been very limited.

In the absence of a nodal or zonal organization of allocation of transmission capacity in the European internal electricity market, irrespective of national borders, transmission system users need from TSOs reliable and consistent indications of NTC and ATC. The objective quantification and prompt publication of NTC and ATC per border or per interconnection point over appropriate time intervals is of the utmost importance to wholesale market participants. On the other hand, mere data is insufficient, in the absence of objective verification by TSOs, *working in consultation with each other for the benefit of the overall market*, of the accuracy of their estimates. A misrepresentation as to truly available physical capacity, especially on the negative side, may cause serious wholesale market distortions and yield windfall income for the TSO or its affiliates.

EFET believes that at nearly all regularly congested borders in the UCTE area potential NTC, and therefore actual ATC, are systematically underestimated. Moreover, deductions from NTC for contractual reservations can be too generous over a given time interval, leading to exacerbated underestimation. Reasons why TSOs may do this include:

- Inaccessibility of accurate information about expected flows in other countries
- Failure to net off predictable counter flows to a dominant flow
- Inaccurate or unduly conservative calculation of expected counter and loop flows
- Lack of co-ordination of nomination and scheduling periods and procedures
- Insufficiently rigorous application to capacity reservations of the use-it-or-lose-it principle
- Non-objective approach to capacity reservations claimed by suppliers for legacy import/export contracts
- Non-provision of appropriate economic incentives (including through regulatory regime) to avoid declaring congestion at borders
- Over-cautious withholding of capacity within a control area on one side of an interconnection, on the pretext of system security or balancing eventualities
- Unwillingness to co-operate for the purpose of coordinating re-dispatch of generation plant, even where this might contribute to a cost efficient elimination or reduction of congestion across a border between their control areas.

The resulting underestimation of available capacity is most easily addressed when there is both a fully unbundled TSO and a pro-active, independent regulatory authority on each side of the relevant interconnection. The failures to progress market based mechanisms seem to be attributable to a mixture of well defended vested interests with differences of view about the likely fairness and efficiency of allocation resulting from any auction. What remains clear to EFET, however, is the unfairness and inefficiency of the substituted first-come, first-served or pro-rata reduction methodologies.

The challenge now is for independent TSOs and progressive regulatory authorities, in consultation with system users including traders and power exchanges, to move rapidly beyond the existing patchwork of capacity allocation methods in the UCTE area. Non-market based methods must be replaced. While some doubts remain as to the strict economic efficiency of the outcome of all explicit capacity auctions implemented so far, these auctions have at least represented a move away from arbitrary allocation.

The inception of partial implicit auctioning of capacity, by way so-called *market coupling*, seems feasible in the medium term around some congested borders of continental western Europe. EFET welcomes early consultation on plans by TSOs and power exchanges in the relevant countries, particularly about how any scheme involving market coupling could be implemented without disrupting liquidity in the OTC physical spot market.

As to the design of implicit auctions for market coupling, it is more realistic to envisage these being organized in the UCTE territory initially as between control areas coinciding with national borders. (Their introduction in this manner could ideally, however, act as a prelude to a potential permanent market splitting scheme, based on commodity pricing zones whose boundaries would not necessarily coincide with those of nations, nor even of control areas.) Any market coupling arrangements, even if initially decentralized, must:

- Be based on an expansive estimation of NTC at the relevant borders (or better yet on a complete replacement in the meshed UCTE network of bilateral NTC values by flow-based power transmission distribution factors)

- Command the maximum possible portion of NTC at such borders (preferably the majority, especially if legacy reservations or any non-market based allocations remain)

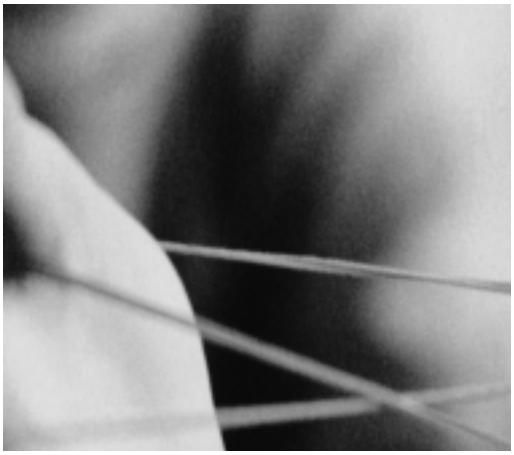
- Enjoy at least equal priority with respect to firmness and availability of ancillary services with any other allocations remaining at a given border. (This applies also to parallel explicitly-auctioned capacity rights, which can be offered as firm or non-firm, subject to suitable arrangements for compensation upon withdrawal. See overleaf.)

The sale by TSOs of fixed-price transmission rights will facilitate completion of a single EU electricity market

The availability to network users of fixed-price contractual rights to cross-border transmission capacity would benefit the development of the internal EU electricity market. To compete effectively across borders, market participants need the ability to fix the delivered price of electricity in advance. This requires a market means to fix the price of transmission for cross-border deliveries, in addition to an ability to manage electricity commodity price risk within national markets.

Market participants should be able to buy transmission contracts, which allow them to fix the price for transmission in advance. Such contractual rights can either be for physical capacity, entitling the holder to schedule power "deliveries" at borders, or financial (e.g. contracts for differences), and would provide a hedge against variable short-term costs associated with transmission between markets. It is noteworthy that such hedging is needed also under a market coupling arrangement, which is the mechanism ultimately preferred by EFET for day-ahead and intra-day congestion management. And market coupling, if designed suitably, is fully compatible with the parallel existence of a market in transmission rights (previously sold in an explicit auction.)

For prices of cross-border deliveries to be hedged effectively, the transmission rights should be contractually "firm", so that the holder is fully compensated by the TSO, should the physical right to schedule power across a border be withdrawn. (This compensation is typically automatic in systems based on financial rights.) EFET suggests that system operators should allocate such transmission capacity rights for all borders, over time periods consistent with the periods for which the underlying electricity commodity is traded (e.g. annually, seasonally or monthly). It is recognised that in some countries specific regulatory approval for revised allocation arrangements would be required and the active engagement of the Committee of European Energy Regulators (CEER) in a dialogue about these arrangements is appropriate. ■



2. European Energy Quarterly Trends Survey (Winter 2004/05)

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

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

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

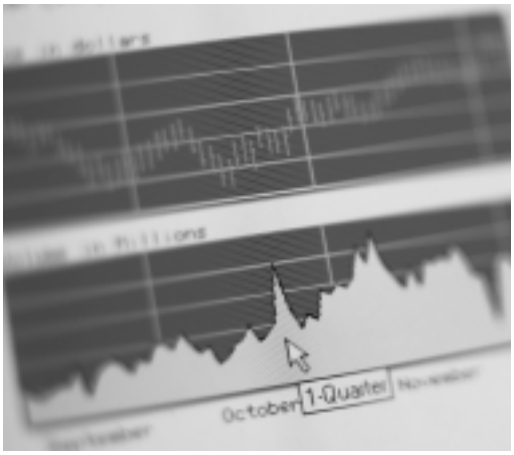
Results are based on the views of an established Panel of leading market participants and policy influencers. The survey itself consists of an online questionnaire and a follow-up in-depth telephone interview, and is conducted on a strictly confidential and non-attributable basis. Respondents were interviewed in December 2004.

This quarter we received contributions from 29 senior market participants from 12 European countries (Austria, Belgium, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK).

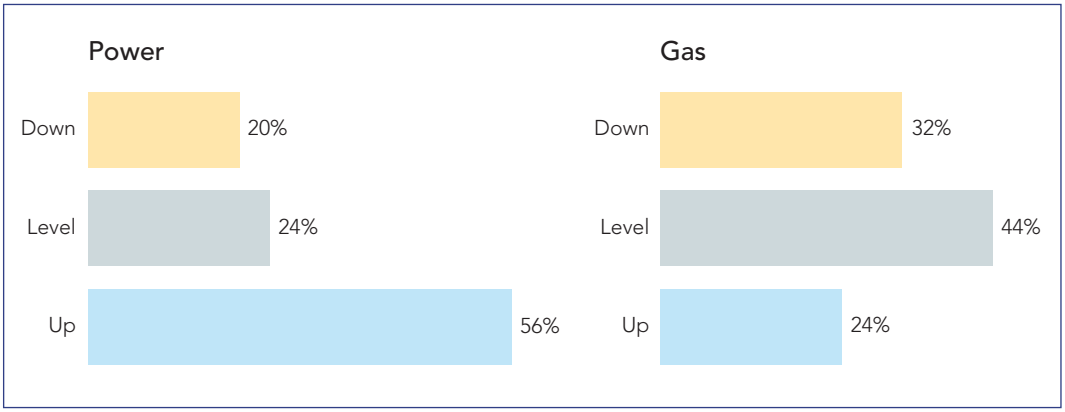
The key findings are as follows:

Price Trends

- Expectations for **power prices** across Europe over the next year are that spot prices will rise (according to 56% of respondents) rather than fall (20% of respondents), and that forward prices will most probably remain level. The most popular view for European **gas prices** over the next year was that they would stay at a similar level to current prices, and this was the case for both spot and forwards.



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



- Looking at the four regional markets specifically covered by the survey, **Germany** is likely to see stable or slightly higher power prices over the next 6 months, and significantly higher over the next 3 years. German gas prices are expected to be stable in both the short- and the long-term. Prevailing sentiment for **Scandinavia** is that power prices will be stable over the next 6 months but increase moderately over the next 3 years, and the same will be true for gas prices. The **UK** will experience moderately higher power prices in both the short-term (up to 3% higher) and the long-term (up to 5% higher) – but most respondents expected UK gas prices to fall over the next 6 months and then pick up in the long-term. The **Netherlands** will see moderate power price increases but stable or falling gas prices in both the short- and the long-term.

Market Developments

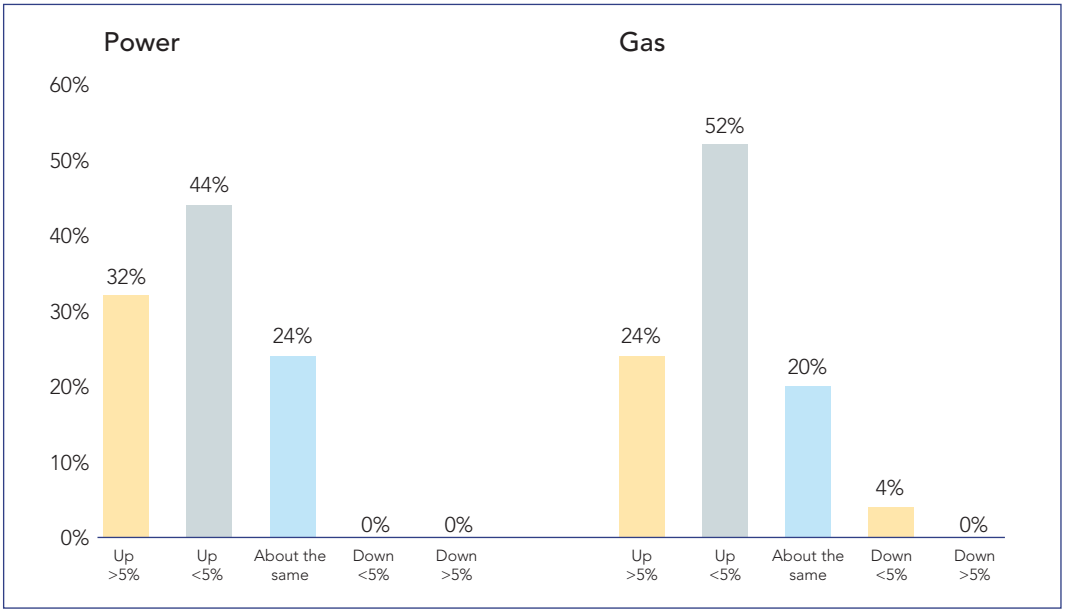
- A wide range of **market developments** were expected throughout 2005. The most frequently mentioned development was the impending Emissions Trading Scheme across the EU, and the impact that will have on prices. Other developments would be green certificates, the impact of the German energy market regulator, the implementation of EU directives and regulated TPA. Respondents also mentioned more entrants into the market whether banks and financial institutions, or players from other countries, such as Russia; more exchanges (such as Belpex) and reference prices were anticipated; and it remained to be seen what impact the new EU Commission would have on DG-TREN.

- Five factors were identified that exert **pressure on energy prices**: environmental pressures, movements in fossil fuels and industry consolidation would all drive up prices over the next 5 years, whilst infrastructure developments would dampen prices and market liberalisation would have an ambiguous effect. Of these factors, changes in fossil fuels would have the most significant impact, followed by environmental pressures.

- On average, respondents said that 28% of their company's traded volumes were cleared; excluding those who had none of their volumes **cleared**, the figure is 36%.

- 76% expected **market trading activity** to increase for power over the next 6 months, and the same proportion expected a similar increase for gas. In both cases the majority view was that the volume increase would be less than 5%. Clear majorities expected there to be a higher proportion of market activity going through exchanges over the next 6 months: 72% said this would be the case for power, and 64% for gas.

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



- There was no clear consensus as to whether the pace of pan-European **consolidation** was increasing or decreasing. The most popular view was that it was steady, both in the power (44%) and gas (48%) sectors, but there was significant support for the view that consolidation was still increasing, both for power (36%) and gas (40%).

- There was broad consensus that the **European Commission** should be doing more to help the development of energy markets: 72% thought that this was the case.

- Further liberalisation of the energy markets was seen to be delayed by a range of **constraints**, led by political constraints and resistance by key incumbents. Legal and infrastructural constraints were also significant.

- National **network access regimes** were seen as a constraint in European energy trading, although more so for gas than for power.

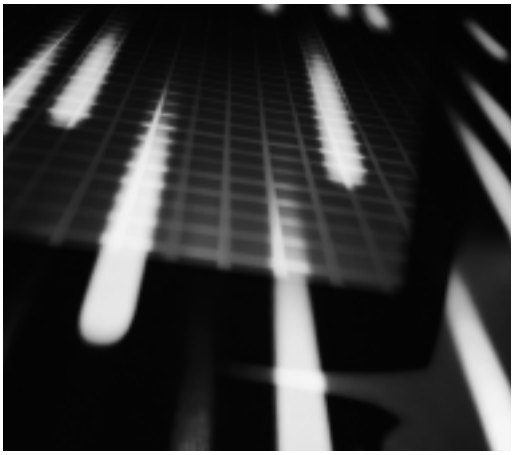
Special topic: Congestion management

Each quarter a special topic is examined, with additional questions put to the Panel. This quarter's topic is congestion management.

How important an issue is congestion management?

Congestion management was widely seen as a "*very important*" issue in European energy, with over 80% of respondents saying it was of importance. A widely held view was that congestion management is important because "*at the moment congestion management blocks market integration*" and that "*it is a critical step going forward to reach the next stage of competition and a level playing field.*" Many people were unequivocal in the view that "*this is the single greatest constraint on the establishment of a single market.*"

There was some dissent, however, with one respondent saying "*it is not as important as some people think. Congestion leads to a transparent market with different prices, so it is not an issue as long as capacity is allocated in a market way.*" The significance of congestion management also varied from country to country, with claims such as "*it isn't such a problem in France and Germany*" but that "*it is very important in eastern Europe.*" ▶

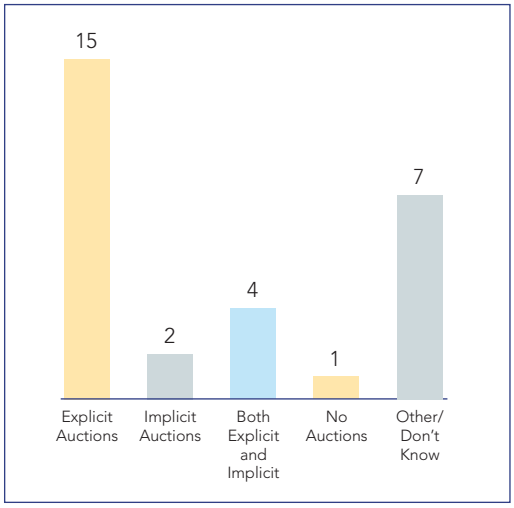


What steps have companies taken to address congestion management issues?

The majority of respondents said that their company had taken no (or very little) action to address congestion management issues. A typical response was "*we are not really doing this*" or "*we are not terribly proactive on this.*" Those companies who had taken steps cited their work with EFET and meetings with the European Commission. One company claimed to be "*trying to promote a system of congestion management between countries which is handled by power exchanges,*" but by and large participants in our research were content to "*monitor and lobby*" without being too proactive.

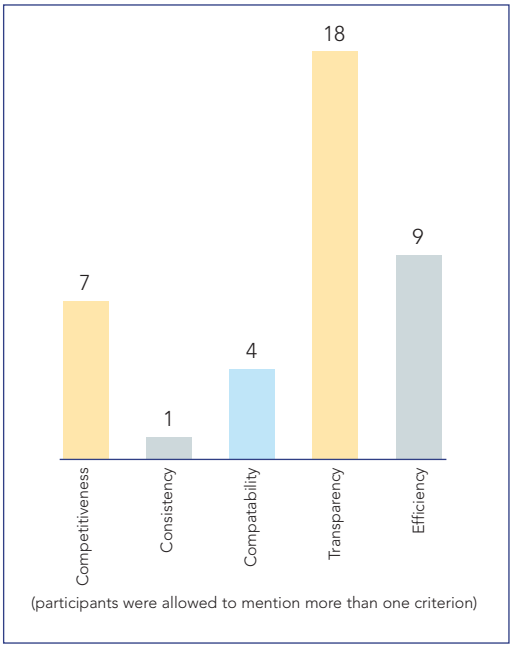
Which method of congestion management is preferable within the EU?

There was a very strong preference for explicit auctions, since they are seen as "*the most convenient market method,*" and "*they are the most transparent.*" One interesting minority view was that "*there should be no auctions at all, but we should use the market on both sides of the congestion. We should use a bidding procedure, and leave it up to the power exchanges and the system.*"



Which criteria are most important in selecting a system of congestion management?

A representative view would be that "*efficiency and transparency are very important, and a method that cannot be manipulated.*" Transparency was considered more important than efficiency because "*it gives traders more confidence to trade*" and "*to improve competition in the market and support the possibility of trading with different exchanges and markets.*"



(participants were allowed to mention more than one criterion)

What are the main barriers to effective congestion management?

More than a dozen different factors were mentioned by our research Panel, indicating that there are no simple solutions to the problems of congestion management. The most frequently cited barrier was the market power of incumbents, and a general lack of unbundling (mentioned by 8 respondents) – "*probably the most important factor is the lack of unbundling in some countries*" and "*the market power of the incumbents*" were typical quotes.

The next most popular criticism was the existence of technical barriers – such as the need for more cables and investment in general: "*technical factors are a big issue, and you need significant investment to sort it out.*" However, there was cynicism from some participants, who argued that "*the big market players are hiding behind theoretical technical difficulties.*" Other barriers to effective congestion management were a lack of co-ordination, the existence of long-term contracts, market structure and a lack of transparency.

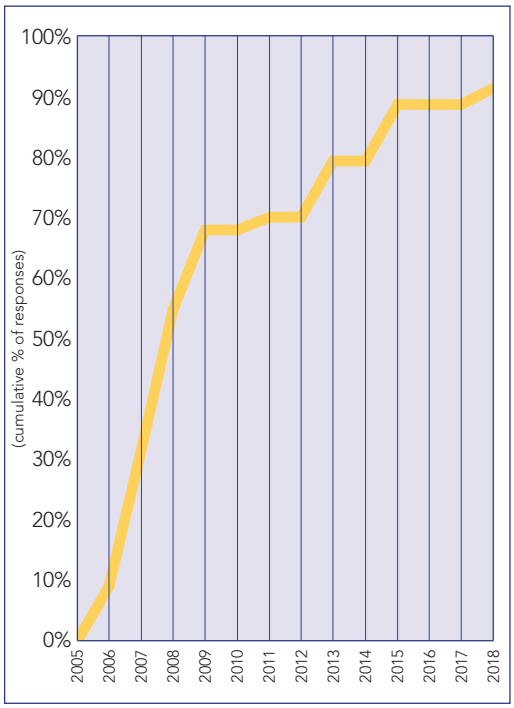
What role should (a) the EU, and (b) power exchanges play?

The EU was encouraged by many survey participants to "*establish common principles for TSOs*" and to "*aggressively implement existing directives.*" Specifically, the EU could play a key role in "*clarifying the distribution and management of congestion revenues*" and "*play a decisive role in financial, regulatory and environmental planning to reinforce grids that were historically not designed to facilitate trade.*" It was also argued that the "*EU should exert political pressure*" and "*separate the grid from producers.*"

Power exchanges "*can create a more transparent electricity price that more closely reflects economic factors,*" and were therefore seen as a significant influence. It was noted that "*exchanges can help to increase transparency, for example by standardising cross-border methodology*" and that they "*can play an advisory role on how to resolve issues at an EU level.*" Power exchanges were praised for being "*efficient and customer-focused*" and it was recommended that the EU should "*work in close cooperation with the exchanges to draw up the regulatory framework.*"

When will Europe have a credible and integrated system of congestion management?

Although a few respondents did not anticipate this ever happening, the consensus view was that a credible and integrated system of congestion management would emerge by 2008.



APX News in short

APX Group record volumes in 2004

APX Group, provider of electronic exchanges for wholesale trading of power and gas across Europe, closed the year 2004 with growth on all its exchanges. APX's Day Ahead volumes in the Netherlands, totalled 13,403 GWh in 2004, up by 12% from the 2003 total of 11,966 GWh. Last year, UKPX saw Spot and Prompt volumes totalling 7,143 GWh up by 3% on 2003 volumes. APX Gas, which ended the year with a record month, had volumes which totalled 3,576 million therms in 2004, an increase of 8% from 3,292 million therms in 2003.

EnMO Ltd renamed APX Gas Ltd, APX to launch APX Gas NL, APX Gas BE

The UK prompt gas exchange EnMO Ltd has been renamed APX Gas Ltd. The name change underscores APX Group's development of Northwest European gas and power exchanges. Together with the continental gas exchange in Belgium and the Netherlands (APX Gas BE and APX Gas NL), planned to commence this month, energy traders will have access through one integrated trading screen to four different and cleared markets. In January, traders can test the trading system.

Jeremy Hall Director UKPX

Jeremy Hall joined UKPX as Director. He is responsible for the profitability of the UKPX power business. With a long background in the power and gas industry, he has worked both in the US and throughout Europe.

BELPEX, the Belgian Power Exchange

APX has signed a cooperation agreement with the Belgian TSO Elia and the French Power Exchange Powernext on the creation of BELPEX, the Belgian Power Exchange. In November, during the traders' event EMART Energy in Barcelona, the companies' three CEOs gave a joint presentation on this unique initiative. It will be the first time that three European power exchanges will be linked via a market coupling mechanism.

NorNed cable

On 30 December, the Dutch TSO TenneT – APX's shareholder - and Statnett signed an agreement for the construction of a 700 MW high voltage cable between Norway and the Netherlands. The Norwegian-Dutch interconnection will provide for the import and export of electricity, in line with the EU's policy of linking markets and enhancing market liquidity. As hydropower accounts for 99% of all electricity generated in Norway, this will help bring about lower, more stable prices in the Dutch market.

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