apx Group

A VITAL LINK IN ENERGY TRADING

Energy Viewpoints

Developing Energy Markets

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Developing Energy Markets

Contents

Uncertainty over the future of carbon trading

Phase One of the EU Emissions Trading Scheme (ETS) has helped reduce GHG emissions. Cap and trading is the right way forward but rather than be free CO_2 allowances should carry a cost or be auctioned. Phase Two of ETS could see a firmer market and a price of around €25 per tonne would be sufficient to prompt a significant investment in low carbon technologies. These are some of the main conclusions of Moffatt Associates latest European Energy Trends Survey.

Market reaction to Phase One

The future of carbon trading in Europe, has been the focus of much media attention over the last few months. Under the EU Emissions Trading Scheme (ETS), 12,000 installations in the power generation and particular industrial sectors in the EU are able to buy and sell permits to emit carbon dioxide, covering about 40% of the EU's total emissions.

National Allocation Plans (NAPs) for the first phase of the ETS from 2005-2007 set an overall emissions cap for each country and the allowances for each sector and individual installation covered by the Emissions Trading Directive 2003/87/EC.

Carbon prices in 2005 were generally higher and more volatile than had been expected prior to the launch of the ETS, but publication in May 2006 of actual carbon emissions in EU member states in 2005 revealed a surplus of allowances, with only seven member states reported to have emitted more CO_2 than they were allocated in 2005.

This result appeared to confirm the suspicion that most governments had been over-generous in their allocation to industry, or alternatively that industry itself had been over-optimistic about its potential for growth. The announcement on emissions triggered a collapse in carbon prices from about €30 per tonne to below €10, but prices then recovered and have begun to stabilise at around €14 per tonne.

Scepticism about viability

This price collapse raised doubts in some quarters about the effectiveness of the ETS system, not least whether it would be capable of fulfilling its objectives of reducing carbon emissions and encouraging investment away from polluting sources towards low carbon technologies.

There has been widespread concern that some firms have been able to make windfall profits because of an ▶

over-allocation of allowances, and allocations in the second phase of the scheme, which runs from 2008 to 2012, are expected to be much tighter. NAPs for the second phase should have been submitted by the end of June 2006. However, at the time of writing, only 14 of the 25 EU member states had submitted their plans to the European Commission and only Estonia had actually submitted its plan by the 30TH June deadline.

Belgium, France, Greece, Latvia, Malta, Slovakia, Sweden and the UK have submitted NAPs in the last six weeks, joining Germany, Estonia, Ireland, Lithuania, Poland and Luxembourg, who had all submitted by mid July. The Commission has three months in which to review the new NAPs, but only after it has received all the information that it requires, and it can demand changes if necessary.

The Commission has adopted a relatively moderate tone with those who have failed to meet the deadline for submitting NAPs, whilst warning that they will take action if the NAPs fail to arrive in the next few months.

However, both members of the European Parliament and representatives of EFET (the European Federation of Energy Traders) have expressed deep concern over the delay in NAP submissions. EFET has declared that this could have a negative impact on the liquidity of the forward market for EU allowances over the Phase Two 2008-2012 period. It could also lead to insufficiently clear long-term price signals for investors and undermine the development of low carbon technologies.

Market expectations

After 18 months the ETS scheme is still relatively new but there has at least been some time to accumulate experience on how the system is working in practice. On the plus side, trading volumes are on the rise, with a total of 350 million tonnes of allowances traded during the first year of the scheme's operation, worth a total of around €9 billion. The market is expected to continue to grow significantly, with predictions that it will more than double in 2006.

However, questions remain concerning grandfathering, how to deal with ▶

new entrants and the allocation method for allowances, as well as whether the scheme should be extended to cover other sectors. Large energy users in Europe have also complained of the excessive pass-through of carbon costs to consumers by electricity companies, which they claim is a major factor in the huge hike in power prices in recent months.

Looking specifically at the results of our survey (see Table A below – Summary of Responses), many members of our panel agreed that underlying values of emissions allowances. However there were varying degrees of enthusiasm for these statements, with some respondents believing that the ETS had failed on some or all of these counts. The consensus is that the Emissions Trading Scheme is an immature market, and that this immaturity has led to problems of transparency and lack of information.

Several panel members blamed politicians for impeding the success of the scheme in Phase One. Political interference was believed to be responsible for the over-allocation of emission allowances, a prime contributory factor in what some see as the relative failure of the scheme since it began in January 2005.

Table A – Summary of Survey Responses

Percentages	Agree	Disagree	Don't Know
To contain energy costs and help industry Governments always tend to be over-generous in their national allocation of allowances?	83	17	0
The current price of allowances is far too low to have any impact on decisions to invest in low carbon technologies?	22	74	4
Offset credits (i.e. Certified Emissions Reductions from CDM projects outside the EU) are unlikely to emerge on any significant scale?	26	65	9
CO_2 allowances should not be allocated freely but should carry a cost or be auctioned?	74	22	4
Phase Two of ETS will be tougher and could lead to a price of at least 40 euros per tonne for 2008 delivery?	40	40	20
Phase Two will not work because long term planning is essential and nobody knows what's going to happen after 2012?	27	60	13
To reduce CO_2 the EU would be better off creating more effective gas market competition to reduce the cost of gas fired generation?	50	41	9

Phase One of the ETS had reduced the EU's greenhouse gas emissions, while some also felt that it had established a viable market mechanism and had reflected

Other reasons put forward by our panel for a certain lack of success in the scheme were industry sectors coming late to market, unsolved political issues such as banking in France and Poland, and regulatory uncertainty. Lack of information was also cited by several of our panel members as a key reason why the success of the ETS may have been impeded.

There was little consensus amongst our respondents concerning what price of CO_2 would be necessary to force a significant investment in low carbon technology. Answers varied from €10-€40 per tonne, although the majority opted for a price mid-way between the two.

There were also varying responses concerning whether cap and trade is the right way in which to achieve a major reduction in CO_2 emissions. Many agreed that it was the correct approach, since market-based systems were the best way to allocate resources, but some panel members also believed that governments should be more involved by giving incentives to cut emissions and by providing more education on the issue.

There was a difference of opinion relating to how climate change should be managed after the Kyoto Agreement expires in 2012. Some believed that an extension of the current system would be the best way forward, incorporating a more international system and in particular the inclusion of the United States. Others felt that better management of the system was key, with stricter rules on allocation to prevent the over-allocation that has caused so many problems this time around, as well as tighter monitoring. It is also interesting to note that half of our survey respondents agreed that to reduce CO_2 the EU would be better of creating more effective gas market competition to reduce the cost of low CO_2 gas-fired generation.

The Commission review

The Commission is currently undertaking a review of the ETS, including issues such as the harmonisation and extension of the scope of the directive, possibly to include more sectors and additional greenhouse gases, more robust compliance and enforcement of the rules, as well as linking trading schemes in third countries and the increased involvement of developing countries. Auctioning is under consideration as a way to counter windfall profits, and environmental groups believe that this would establish a better market price. According to the EU Environment Commissioner, Stavros Dimas, a stakeholder group will be appointed to "intensify" the review later this year. The planned International Transaction Log (ITL), which will check transaction validity and which should began operating from ▶

November 2006, should help to improve market function and transparency.

The fact that there are actual data for carbon emission reductions from the first year of the scheme should make it slightly easier to set targets for the second phase. Phase Two of the ETS will be crucial, but as yet no-one knows how tough it will be, and it is difficult to predict the price of carbon in the longer-term. The Commission is not expected to give its initial assessment on the NAPs it has received until mid-October at the earliest, but it is expected that the Commission will decide to cut emissions allowances in at least some of the plans. The Commission is seeking emission cuts of about 6% for each member state, in order to ensure that they are in line with their Kyoto Protocol commitments to keep emissions at 1990 levels by 2012.

Uncertain future

Over the next few weeks there are likely to be tough negotiations between the member states and the Commission as it seeks to limit the allocation of allowances, and the result of these negotiations will have a profound effect on how prices will move during Phase Two. Until the second phase NAPs are resolved, the market will continue to be subject to uncertainty and this is expected to translate into price volatility. Although not perfect, the trading market has at least been operational and has provided some price signals, but the influence of national governments and discussions on their Phase Two NAPs will be the main driving force in developments in the market in the near future.

Moffatt Associates
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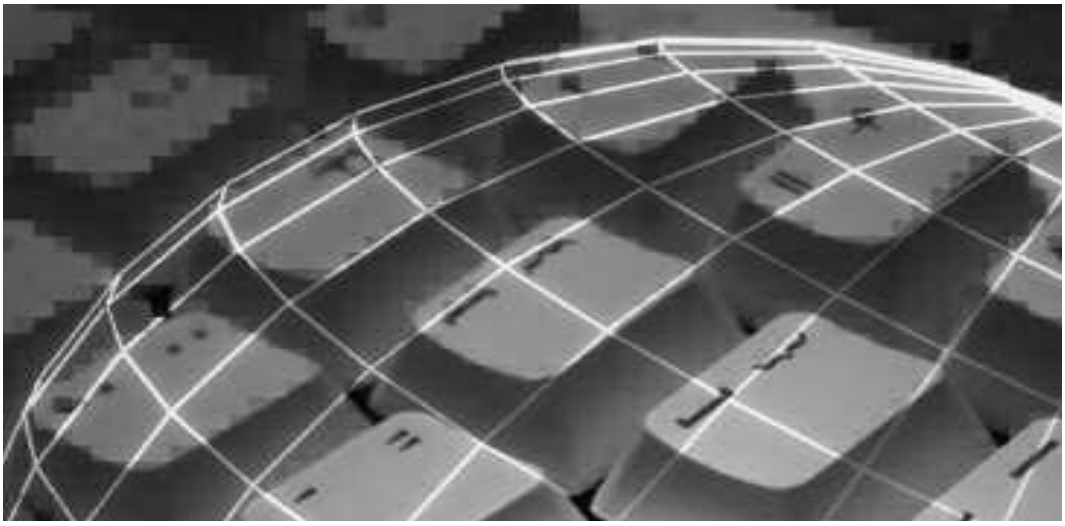


EU ETS: A success but a threat of excess supply of allowances in phase two

The EU ETS is approaching the end of its second year. Henrik Hasselknippe and Kjetil Røine of Point Carbon argue that cap and trade is a successful market mechanism for reducing emissions, but some serious issues need to be addressed before Phase Two starts in 2008.

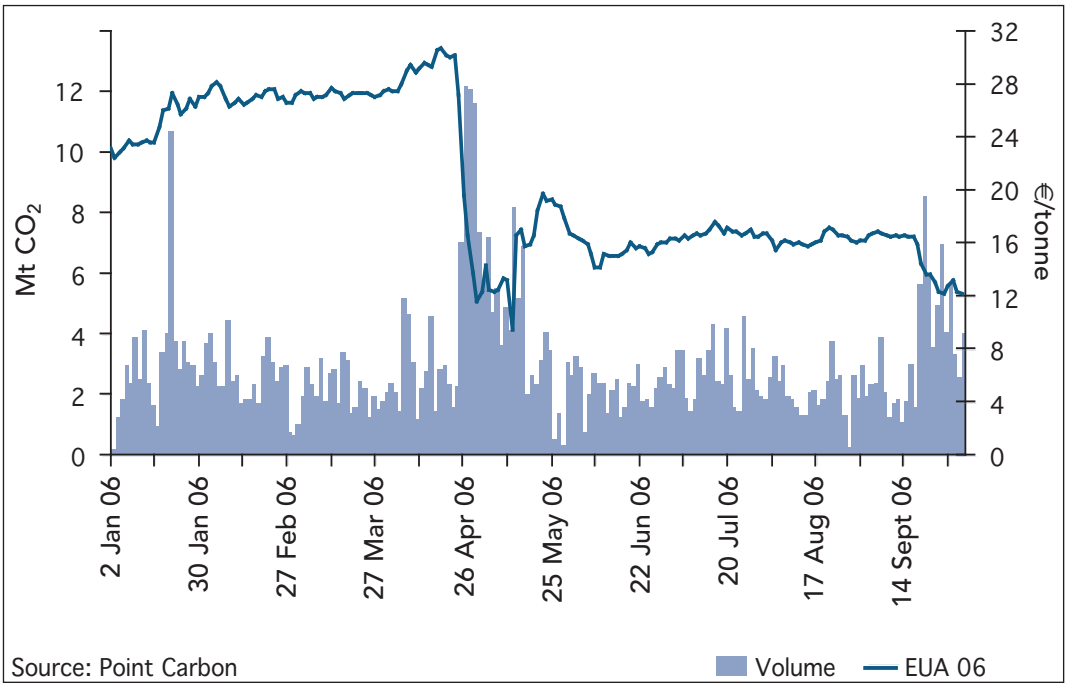
Prices ans volumes

The EU ETS has seen considerable volumes and wildly fluctuating prices throughout 2006. **(See Graph A below)** In total, 578 Mt CO_2 have been traded year-to-date (3RD October 2006), corresponding to € 11.3 billion. This is considerably above the numbers for the entire last year both for volumes and values (362 Mt and €7.2 bn in 2005, respectively), and indicates a growing market.

The over-the-counter (OTC) market is still the biggest in the ETS market. During the first half of 2006, 62 per cent of the total volume was traded OTC, while exchanges accounted for 27 per cent and bilateral trades for 11 per cent. ECX is the preferred exchange with more than 75 per cent of the market in H1 2006. Phase Two volumes constituted 25 per cent of total traded volumes. These have in recent months traded more or less in parallel with the Phase One EUAs, but are now tending to delink as more reliable information on Phase Two allocations becomes available.

Graph A: A hell of a beating

Daily bid-offer closing prices and corresponding volumes in the brokered and exchanged markets year-to-date.



Source: Point Carbon

International trading opportunities

Furthermore, the EU ETS does not only lead to market activity in Europe. The opportunity to utilise imported credits from Clean Development Mechanism (CDM) and Joint Implementation (JI) projects means that European private companies are to an increasing extent looking abroad for their reductions.

Based on transactions recorded in Point Carbon's transaction database, as much as 226 Mt was transacted in the CDM and JI markets during the first half of 2006, with a financial 2006-value of nearly €2 billion. While this was lower than expected, it still shows that there is considerable interest in such projects. The primary CDM market is still the largest market segment by far, with emission reduction purchase agreements (ERPAs) of 193 Mt during the first half year of 2006, valued at €1,545 million. Similar to last year, a handful of projects involving industrial gases dominate and comprise more than 60 per cent of the market. Within the realm of JI, most reductions contracted came from energy efficiency projects. Private companies are still the major players in the CDM arena with 74% of contracted volume in the first half of 2006.

Attracting new investment

The EU ETS has also led to considerable private investments in carbon funds. Including those outside the EU ETS, corporate fund investments constituted 23 per cent of CDM forward transactions and 11 per cent of forward JI transactions in the first 6 months of 2006.

Based on information from the carbon funds and interviews with compliance buyers and other market participants, we calculate that carbon funds are currently heading towards a total capitalisation of €3.7bn, of which €3.1bn has already been committed by fund investors. This represents a more than threefold increase during the last year.

It is worth noting that cash return carbon funds (providing cash rather than carbon credits as a return to investors) are a much more recent innovation and have seen a growth lately. These funds see carbon credits as an investment opportunity with potential for growth in value and also a new asset type with an interesting risk profile that makes it particularly interesting for hedge funds.

The unexpected surplus of allowances

Verified emissions data from 2005 for more than 10,000 installations covered by the EU ETS were expected to be published on 15TH May 2006. This would have indicated whether the price of EU Allowances (EUAs) was correctly set.

In late April, emissions data from several Member States leaked into the press, and prices started to fall rapidly as many of the countries turned out to be long on allowances. The official data was inadvertently made public on Friday 12TH May, showing a total long position of 66.9 Mt with most countries and installations reporting. On that day, the market plunged to close at €9.25. Prices rebounded the ▶

following week, trading as high as €19.55/t on 23RD May, before beginning a very slow decline that has continued to today (current prices are about €12/t for delivery in 2006).

The total surplus of EU Allowances (EUAs) stands at 97.2 million for the 2005 calendar year. Across the EU-21, Poland, Germany and France were the longest countries, while Great Britain and Spain dominate the other side of the scale. The power companies were on aggregate short, while all other sectors faced an aggregate long position, metals being the longest.

What caused the surplus? In general, the industrial companies point to "reasonable treatment" in the allocation process, combined with over-optimistic projections for future production. While there is recognition of the fact that allocation formulas for Phase One provided industry with generous allowances, it is worth pointing out that lower than expected industrial output was a factor.

Evidence of CO_2 abatement

Is there evidence of CO_2 reductions taking place? There have clearly been some site specific reductions, such as increased energy efficiency and bio-fuel based power production (e.g. in the pulp & paper sector). Closing of production, either permanent or temporary, is also a reason for surplus allowances – as was production transfer. But this would only apply for a small handful of installations and not for the industry in general.

In the metals sector, production levels in 2005 fell compared to 2004, partly due to high level of stocks in the supply chain. Demand has increased again in 2006, which is likely to bring with it higher emissions. Efficiency improvements have already been made at a number of installations, and there is not much potential for further increased efficiency. In fact, if one looks only at reported historical emissions versus production levels, and the 2005 numbers, there has been an increase in efficiency of 19% since 2000-3. Some impressive improvements can also be found in the 'others' sector, which has increased its efficiency by 26% since 2002. It is still difficult to say exactly how much of this is due to actual improvements and how much is due to inflated historic figures for emissions – but the latter is considerably more likely than the former.

In other sectors there are also specific situations which have led to emissions reductions. In the cement sector there is ▶

some evidence of increased use of alternative fuels and repairs or replacements of kilns during 2005. In the chemicals sector, there has been some disruption to production (in particular in the UK) in Q4 2005, due to high gas prices.

However, in general the majority of the emissions reductions that have taken place cannot be explained by major abatement initiatives arising from the introduction of the EU ETS. The question is whether the scheme will prompt major abatement initiatives in 2006 and 2007.

Getting it right second time around

In total, 15 Member States have now submitted their NAPs to the EC. The Commission has stated that countries who do not submit their plans by 12TH October 2006 will face infringement proceedings. This, however, might seem like a toothless threat, since such proceedings are cumbersome and lengthy - typically lasting more than a year - and the EC needs to resolve issues quickly. Thus, we assume that although the EC will be increasing the pressure on the laggards in the weeks to come, it is unlikely that it will actually take any Member State to Court.

With regard to the outcome of the Commission's NAP assessment, we still think that the EC will assess the NAPs in a strict manner. In a meeting of the Climate Change Committee (consisting of the Commission and Member State officials) before this Summer, the Commission reiterated its position clearly to the Member States. For the countries which have already reached their Kyoto targets, the 2005 aggregate verified emissions data will be the starting point for assessment of the NAPs. Member States who still have some distance to cover before reaching their targets will have to allocate allowances below the 2005 level.

In conclusion, it seems reasonable to say that the EU ETS, despite some serious errors, is a success as institutions and mechanisms are established and work properly, and traded volumes and prices have reached significant levels. However, in order to meet the Kyoto targets in the first Kyoto period, to which the EU ETS is intended to contribute significantly, it is important to ensure a strict market in Phase Two. The caps suggested in the current national allocation plans (NAPs) seem to be generous and the Commission should therefore reduce these caps to avoid an over-allocation of allowances which would undermine the effectiveness of the scheme.

Politics hinders ETS progress in Central and Eastern Europe

Political ranglings in Central and Eastern Europe (CEE) delayed the start of trading in carbon allocations and markets were massively over-supplied with carbon allowances. Gergely Szabo and Edit Kiss of Vertis Environmental Finance argued that a firm political commitment to reducing CO_2 emissions is essential for the success of ETS.

Setting the political scene

Riots in Budapest - The collapse of the coalition in the Czech Republic - Resignation of Ministers in Poland. Because of these and other political distractions, environmental issues are very low down on the priority list for the Central and Eastern European (CEE) states. But EU membership brought obligations, one of which was the EU ETS.

It came as no surprise that the larger accession states were slow to implement EU ETS. This article seeks to shed light on what has happened so far with within CEE and what we can expect in the future.

Phase One – National Allocation Plans

The Phase One was due to start in January 2005 but it was not until Autumn 2005 that registries came online in the Czech Republic and Slovakia. These were followed by Hungary, which started operation just before the compliance period (April 2006). The laggard was Poland, which only finalised and established its NAP in July 2006. The delays were substantial and due to political squabbles about allocation rather than administrative problems, but in reality a lot of other EU countries were late as well.

The extent of gaming in the initial NAP process was revealed in May 2005 when it appeared that CEE countries had ended up with surpluses of EUAs: Poland 32 million, Czech Republic 14 million, Slovakia 5 million and Hungary 5 million. At least the CEE countries were not hypocritical – none had ever claimed that climate change was a political priority for them.

Phase One – ETS Trading

Slovak companies, pushed by a particularly active brokerage firm, began trading forward as early as 2003. The initial burst of activity slowed as companies across the region began to tackle technical issues like monitoring and reporting, became concerned at the lack of any domestic regulation and as buyers began to be more rigorous about credit terms.

Trading only began in larger volumes as the registries came on line. The Czech market rapidly took the lead and became the most developed in CEE. Much of the 2005 and 2006 surplus of Czech companies was sold well before the price collapse in May 2005. Very few companies from Hungary and Poland managed to take advantage of the high prices and now many will still say they are waiting patiently for prices to go up to the twenties before they sell.

Why have the Hungarians and the Poles been apparently so slow to come to

market? The reasons are quite different. The Hungarian economy underwent a thorough privatisation in the 1990s, almost all its industry was sold to international groups. These – including many power companies, cement companies, and others – tend to manage EU ETS compliance and trading centrally. This means that their surpluses are bought inter-company and do not come to market directly. Indeed the centralisation often extends to the point that local companies (including some power plants!) are not allowed or encouraged to include the cost of carbon in their marginal cost analyses, rather defeating the object of the scheme and leading to elementary errors in business decision-making.

Polish industry was hampered by a long tussle in the finalisation of the NAP. Disagreements occurred both internally and with the European Commission. Assigning blame for this is difficult – perhaps it is just in the nature of things that consensus takes longer to come when there are so many (over 1000) institutions to satisfy in the context of a democracy. Many more industrial companies have state ownership or are influenced by the state, which means that their decision-making tends to be slower than private sector counterparts. This leads to long delays in companies coming to market, particularly when there is political turbulence. They must be kicking themselves now, though, trying to shed 32 million tonnes of surplus EUAs at a price of €11 when they have seen it at €30 and could do nothing at the time.

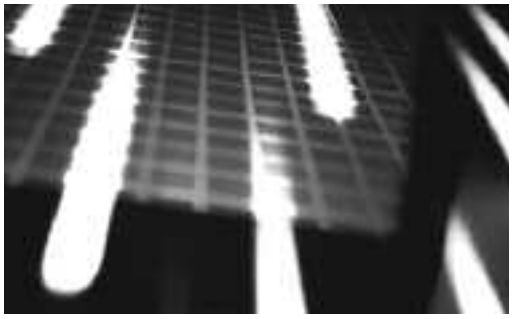
Since the Summer break however, Polish companies have begun to trade with increasing confidence, coinciding with the fall in the oil price and a €3-4 slump in the EUA price.

Looking forward to Phase Two

Second phase NAPs are well advanced, but there are many outstanding questions. Most of the CEE countries are basing their estimates on projected production data and most likely will have interminable discussions with the Commission until their allocations are finally accepted.

CEE environmental ministries have zero political clout, and zero political support from above. This means that they are not in a position to impose NAPs, which would put any pressure on industry. It only takes a few phone calls from influential energy companies and the Minister of Environment gets his pink slip. So the national environment ministries have to adopt a quite different tack. They play along with industry, and prepare a NAP, which keeps the domestic market happy but it allows the EU commission to pull it to pieces. It is a risky game – a kind of grün realpolitik – but they have few alternatives.

A shortage of allowances in the second-phase in the EU ETS is vital for the future of the scheme and would stimulate investment in cleaner technologies in Central and Eastern Europe – something the region still badly needs. Easy linking to Kyoto and a loose NAP will put off any clean-up for another five years. Western Europe has to take a lead in cutting the allocation and the Commission needs to be firm with Central and Eastern Europe. ▶



Bulgaria and Romania

The big news recently is the approval of Bulgaria's and Romania's accession to the EU from the 1st of January 2007. These countries have been working hard on EU ETS and are assuming that they will join for the last year of the first trading period. This should make the market even longer than it is, and, having learnt from the mistakes of other countries in the region, companies in Bulgaria and Romania are not likely to hesitate long before starting to trade. With a combined population of 30 million, and some big industrial plant rusting out there, these countries represent an estimated further 130 million allowances in the scheme. Assuming a surplus of some 10% (which seems to be par for the course), this means a flood of some 13 million likely to come to market.

Next steps and way forward

The attitude of market players towards trading in the CEE region has evolved strongly in the last year. Operators now understand monitoring and reporting. Many have now traded, and have benefited commercially. But few operators in CEE actually operate their businesses to take into account the marginal cost of CO_2 emissions, and some are actually prevented from doing so by their owners. There is also often an assumption that new investments, even into coal-fired plant, will be granted enough allowances for the cost of emissions not to be a significant burden.

However on a positive note, installations covered by the scheme have accepted being part of the system, consensus has been reached on allocation, registries work, many of the operators have executed their first trades, and some are just starting to incorporate the value of the carbon in production and investment decision. Despite the hiccups, a dramatic change in attitude has taken place - more and more consider the scheme an opportunity instead of a burden.

The next steps – of incorporating the cost of emissions into operating and investment decisions – are some way off, and are unlikely to be widespread until a firmer hand is shown by politicians who need to send out a clear signal that this is a system which will endure and will make the cost of carbon significant and permanent.

Key issues surrounding the future of Carbon Trading in Europe

The EU faces some very difficult decisions over the next phase of ETS. According to Andrei Marcu of the International Emissions Trading Association (IETA), the scheme has been a market success but the real test is whether the scheme will reduce CO_2 emissions in line with the EU's Kyoto target. European network is hindering development.

Was Phase One a success?

There is no doubt that the EU ETS is a success as a market instrument. This statement can be supported by some emerging facts. In the first 12 months the EU carbon market was already worth US$ 6.3 billion which equates to 322 million tonnes of CO_2 (World Bank/IETA "State of the carbon market"). Its volume is likely to double in 2006 with 3 million tonnes on average traded per day.

A new market is developing around the EU ETS infrastructure and companies are increasingly aware of the financial opportunities provided by the scheme. Emission prices have already given clear incentives to utilities to switch from coal to gas – the cheapest large scale abatement option on a short term basis - throughout the summer 2005 leading to some 100Mt of CO_2 reductions.

The EU ETS has also been the driving force behind the extraordinary CDM market which addresses real sustainable issues in the developing world. The project-based carbon market now represents 364Mt of reduction in 2005 (World Bank/IETA).

CDM and JI will also keep EU industry globally competitive by providing emissions reduction opportunities in the developing world at the lowest possible costs.

What is likely to happen to carbon prices in Phase Two?

Phase One has seen highly volatile trading periods. Bids and offers have been consistently available across many trading platforms and market participants have mostly been able to get in and out of trading positions. Price volatility has also occurred because of the un-coordinated release of April 2006 verification reports of EU Member States, which showed the total allocated allowances to be greater than the verified CO_2 emissions.

In this respect, NAPs are central to the efficiency of any price mechanism in a trading scheme. NAPs must ensure that ▶

there is scarcity in the market and a level playing field for industry. Together with the number of CERs and ERUs allowed into the scheme, they are fundamental to the future price of EUAs (European Allowances) over 2008-12.

If the Commission fails to insist on sufficiently strong NAPs then this could lead to a looser than expected cap in the ETS over Phase Two. Current published NAPs however show that targets will gradually be stricter to meet Kyoto targets. If this tendency is confirmed, Phase Two will be significantly shorter and emissions reductions will be made. This in turn will provide the market with a strong signal to reduce emissions.

Will prices be allowed to rise to a point where we see significant reductions in emissions?

The EU is committed to emissions trading as a long term tool for reducing CO_2 in the EU. In this scenario, successful markets depend on a secure long-term legal framework to give confidence that legal obligations will be met with strict, verified and transparent compliance. The best way to ensure that prices do not go through the roof is to allow substantial numbers of project-based credits, which will help keep industry competitive.

What progress are we likely to see on the longer term future of ETS?

The EU ETS is still work-in-progress and we can clearly see a staged approach towards making the scheme more robust, wide and deep:

1. During 2006-2007: finalising the complete infrastructure of the system.

2. For 2008-2012: need for consistency and integrity of NAPs.

3. For post 2012: changes should aim to further improve and widen the GHG market through amendments to the Emissions Trading Directive.

As to the post 2012 regime much will also depend on how the EU ETS and other schemes can link. The objective will be to make these different systems compatible without compromising the effectiveness of the various systems.

European environmental policy is characterized by a delicate balance between Member States and the European Commission competencies. Member States have legislative power in major issues of climate change including major aspects of energy policy. They will also want reassurance that they can maintain a firm grip on national allocation targets between the trading and the non-trading sector. The European Commission on the other hand will push for the Single Market in emission trading such as EU rules for new entrants/transfers/closure of installations and for a central New Entrant Reserve.

A serious discussion will be needed on the inclusion of other sectors beyond the 11,500 energy-intensive installations producing almost half of the EU's total CO_2 emissions. Among the sectors currently

excluded, aviation is already a candidate to enter the scheme as early as 2010.

What progress are we likely to see with other international CO_2 trading schemes?
The EU ETS has no "sunset clause." Emphasis will be on its improved implementation, its extension to other sectors and linking to other schemes as they develop.

Linking is already happening with developing countries through the CDM and JI mechanisms originating from the Kyoto Protocol. But new schemes are emerging and could become candidates to link up with the EU ETS:

1. In **California AB32** authorises, but does not require, the California Air Resources Board – which regulates CO_2 emissions in the state – to implement market-based compliance mechanisms. Regulation is only becoming effective in 2010. It is widely expected that some form of emissions trading will be introduced.

2. The **Regional Greenhouse Gas Initiative (RGGI),** is a US cooperative effort by North eastern and Mid-Atlantic states to reduce GHG emissions. To address this important environmental issue, the RGGI participating states will be developing a regional strategy for controlling emissions from their electrical power sector. Central to this initiative is the implementation of a multi-state *cap-and-trade programme* with a market-based *emissions trading system*. The proposed programme will require electric power generators in participating states to reduce CO_2 emissions.

3. The State Governments of **Australia** are investigating the feasibility of a national emissions trading system as part of a comprehensive strategy to help Australia address the challenges of climate change. To date four discussion papers and two consultancies on emissions trading have been released and these are stimulating much debate on the many policy issues associated with the design of a national emissions trading system.

4. In 2003, the Australian **New South Wales (NSW)** Government introduced an emissions trading scheme building on an existing emissions benchmarking program in connection with electricity retailer licensing conditions. The benchmark system requires electricity retailers to reduce annual emissions from 8.65 to 7.27 tonnes CO_2 equivalent per capita. All six GHGs expressed as units of one tonne of are CO_2 covered. They can achieve the targets by offsetting their liability with credits created from renewable energy and low emission generation, tree planting and energy efficiency. Each participant has a benchmark obligation assigned to their

operation, and will have to submit emissions accounts equaling their target each year.

5. In **Japan** a voluntary emission trading scheme has been established over the last year. It is similar to the "old" UK scheme as it provides for subsidies with industries participating in the scheme. The government has not yet envisaged any linking with the EU scheme but the option may come up one day.

Judging the effectiveness of the ETS

Eyes are now on the international community which is about to start two years of crucial discussions on further global action to combat climate change after 2012, when the Kyoto Protocol targets expire. Emissions trading, CDM and JI are likely to play a central role in whatever shape this new agreement will take. Finland will be leading the EU delegation at the annual United Nations ministerial conference on climate change (UNFCCC) in November in Nairobi and has already expressed a strong interest in advancing the discussions on post 2012.

To conclude, in times when scientists are issuing stark warnings on the effects of global warming, the EU ETS will be measured against its environmental delivery. The next EU ETS trading period is to start in 2008 coinciding with the first Kyoto commitment period. Combined emissions in the EU-15 are still above the 1990 baseline compared with a commitment to achieve a reduction of 8% in CO_2 emissions by 2008-2012. To achieve the Kyoto targets ETS needs to work. Only then can the scheme lead the rest of the world by example. ■

Trends in European Energy Quarterly Survey (Spring 2006)

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

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

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

Results are based on the views of a representative panel of leading market participants and policy influencers. The survey itself takes the form of a detailed telephone questionnaire and is conducted on a strictly confidential and non-attributable basis. Respondents were interviewed in September 2006.

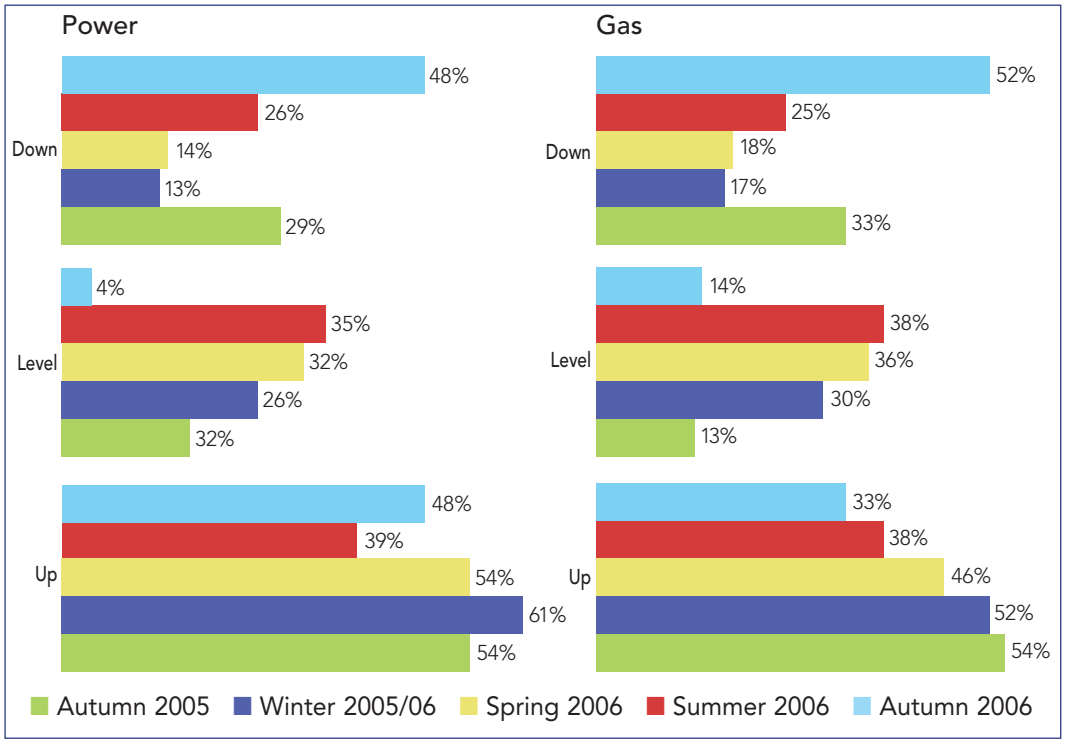
This quarter we received contributions from 25 senior market participants from 11 European countries (Belgium, France, Finland, Germany, Italy, the Netherlands, Norway, Poland, Spain, Switzerland and the UK).

The key findings are as follows:

Market Trends

- Last quarter there was a significant increase in the number of respondents predicting a fall in power prices over ▶

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



the next 12 months. This quarter, respondents were almost equally divided on the likely future direction in power prices indicating a possible increase in price volatility in the next 12 months. The number of respondents predicting a rise in prices has increased (48% compared with 39% last quarter) as has the number predicting a decrease (48% compared with 26% last quarter). The number of respondents expecting prices to remain stable has declined from 35% to just 4% this quarter.

- In the gas market price expectations have weakened considerably. Respondents expecting a rise has declined (33% compared with 38% last quarter) and those predicting a decrease has increased (52% compared with 25% last quarter). There was a marked decline in those expecting price stability this quarter (14% compared with 38% last quarter).

- In Scandinavia, Germany, the Netherlands and UK we have seen a shift away from predictions of rising prices for power. In Scandinavia and Germany this quarter we see opinions spread evenly across a range from increasing prices through stability to decreasing prices. The UK and the Netherlands both show a more marked shift towards toward falling prices with a majority (59% for the UK and 53% in the Netherlands) predicting a price reduction.

- For gas, we also see a movement away from predictions of rising prices. For Germany there is an even spread of expectations. For Scandinavia, there is a significant shift away from stable prices (13% compared with 52% last quarter) to decreasing prices (44% compared with 16% last quarter). The UK sees a majority of the Panel predicting a decrease in prices this quarter whilst the Netherlands has seen a 20% increase in the number of respondents predicting falling prices.

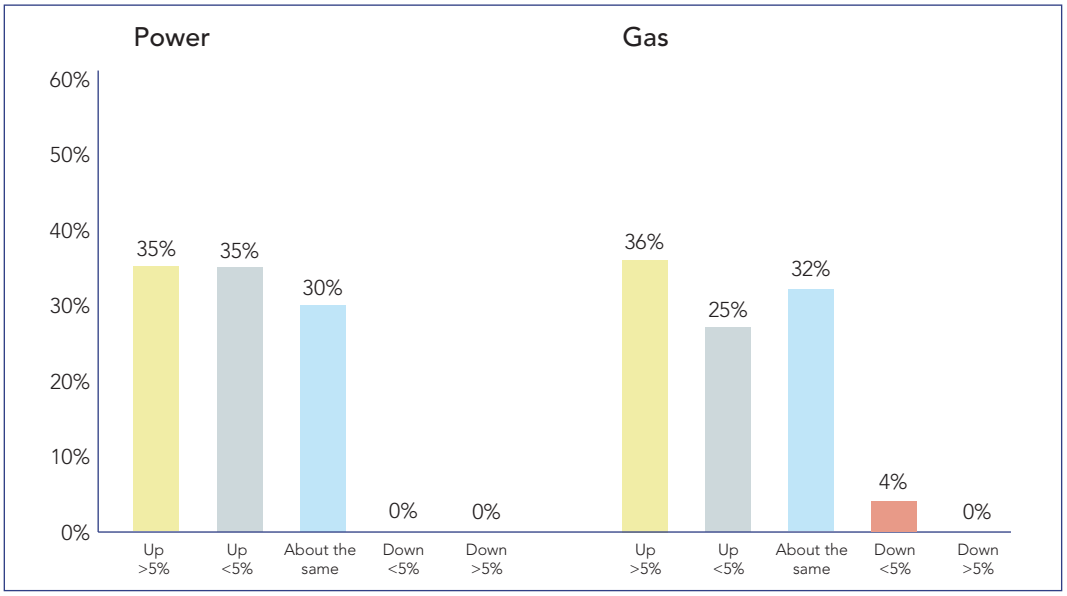
- On important issues likely to be at the forefront of the energy market in the next 12 months, German power and gas market liberalisation was high on the agenda. An increase in infrastructure developments was also viewed as important as was M&A activity.

- Of the five factors exerting pressure on energy prices submitted to our Panel, movements in fossil fuel prices and environmental pressures are once again seen as the most important, followed by infrastructure developments. 75% of our Panel predict that infrastructure developments are likely to exert and downward pressure on prices. Market liberalisation was judged as the least likely of the factors likely to exert pressure on prices.

- On average, respondents said that 40% of their company's traded volumes were cleared in the previous quarter, up from 34% the time of our last survey.

- The share of respondents expecting an increase in market trading activity over the next 12 months has increased slightly from last quarter for both power (70% overall compared with 56% last quarter) and gas (64% overall compared with 60% last quarter). No respondents predict a decrease in trading activity for power over the next 12 months.

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



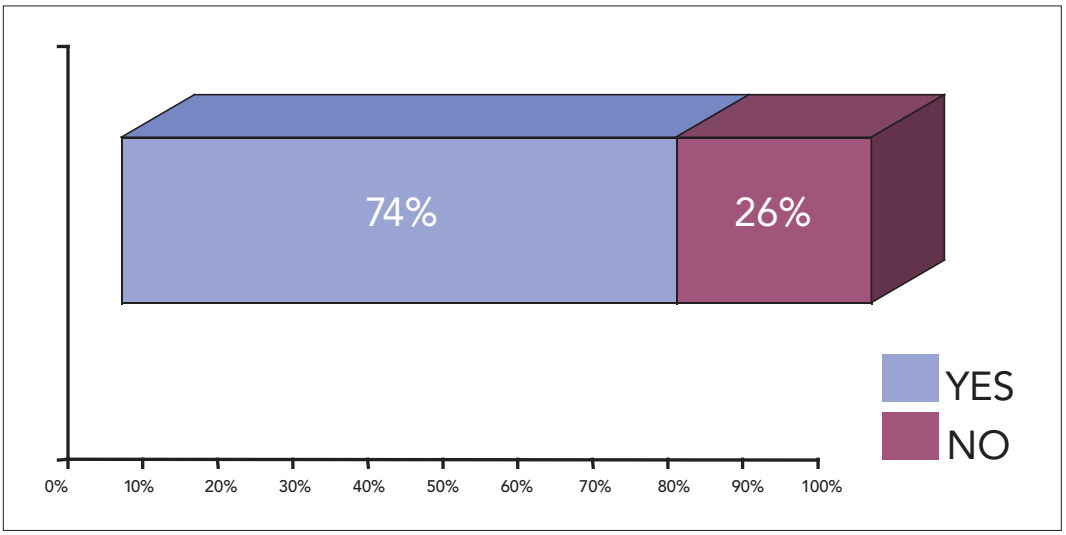
Special Topic: The Future of Carbon Trading in Europe

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

- 65% of our Panel believe that Phase One of the carbon trading allowances has reduced GHG emissions and 75% see Phase One as having established a viable market mechanism for operating a cap and trade system.

However, 67% of Panel members do not think that prices in Phase One have reflected the underlying values of emissions allowances.

Has Phase One established a viable market mechanism for operating a cap and trade system?



- Looking at the factors that have impeded the success of Phase One, the Panel considered that the over-allocation of allowances and the lack of adequate market information were inhibiting factors.

- 83% of the Panel agreed that Governments tend to be over-generous in their national allocation of allowances in order to contain energy costs and help industry.

- 74% of Panel members believe that the current price of carbon is high enough to have an impact on decisions to invest in low carbon technologies and 74% thought that CO_2 allowances should not be allocated freely but should carry a cost or be auctioned.

- Looking to Phase Two, respondents thought that a price of around €25 per tonne for CO_2 should be enough to incentivise significant investment in low carbon technologies. The range of prices given was from €10/tonne to €40/tonne. 40% of respondents believed Phase Two would be tougher and could lead to a price of €40 per tonne for 2008 delivery.

- A majority (60%) believed that Phase Two will work but interestingly half of our respondents agreed that to reduce CO_2 the EU would be better off creating more gas market competition to reduce the cost of low CO_2 gas-fired generation.

- A large majority of the Panel believed that cap and trading is the correct way to achieve a major reduction in CO_2 emissions. On the whole this was justified by a belief in the value of market mechanisms to solve the carbon emissions problem but several Panel members commented that it could only really be effective if the USA was also involved.

- We concluded by asking our Panel how climate change should be managed after the Kyoto Agreement expires in 2012. The general feeling amongst the Panel was that a similar agreement should be put in place but it should be truly global agreement with the support of the USA and some of the newly industrialised countries. The USA were seen as key to the success of any further agreement with some respondents even going as far as to suggest that the USA should fund a global initiative to reduce carbon emissions.

A summary of responses on the future of carbon trading is contained in the table below

Percentages	Agree	Disagree	Don't Know
To contain energy costs and help industry Governments always tend to be over-generous in their national allocation of allowances?	83	17	0
The current price of allowances is far too low to have any impact on decisions to invest in low carbon technologies?	22	74	4
Offset credits (i.e. Certified Emissions Reductions from CDM projects outside the EU) are unlikely to emerge on any significant scale?	26	65	9
CO_2 allowances should not be allocated freely but should carry a cost or be auctioned?	74	22	4
Phase Two of ETS will be tougher and could lead to a price of at least 40 euros per tonne for 2008 delivery?	40	40	20
Phase Two will not work because long term planning is essential and nobody knows what's going to happen after 2012?	27	60	13
To reduce CO_2 the EU would be better off creating more effective gas market competition to reduce the cost of gas fired generation?	50	41	9

APX Group News

Continued growth of APX Group volumes in Q3

APX Group saw record volumes in Q3 2006. Quarterly totals for the Dutch APX Power NL reached an all time record volume of 4,366 GWh, an increase of 15.48% compared to Q3 in 2005. London based APX Power UK demonstrated a strong increase of its quarterly volumes achieving 2,449 GWh, resulting in 22.38% growth on its volumes compared to the same quarter in 2005. APX Gas UK's Q3 volumes of 35,516 GWh were also a substantial increase of 20.98% from Q3 2005's volumes. September 2006 had the 3rd highest ever UK Gas Market volumes as APX Gas UK volumes totalled 13,138 GWh.

As of October all APX Power Markets and all APX Continental Gas Markets have been successfully integrated into the EuroLight™ trading platform. The new trading system, implemented at the request of Members, increases user friendliness, adds highly configurable features and is considerably faster.

APX Publishes Dutch Electricity Generation Data Increasing Transparency

On 16TH October, in cooperation with the Dutch Transmission System Operator, TenneT and the Federation of Energy Companies in the Netherlands, EnergieNed, APX Group started to publish Dutch power generation information on the www.apxgroup.com website. Through this initiative, the generators submitting production data intend to enable other market parties to make better analyses of developments in the energy market. The broader aim is to improve the liquidity of the electricity market and to lower entry barriers to the market for new players. These steps taken by electricity producers in the Netherlands are in line with the transparency proposal made by the European Electricity Industry Association, Eurelectric, in its Position paper on market transparency.

Brisk Trading on New Dutch APX Intraday and Strips Markets

On September 14TH APX Group introduced the Intraday and Strips Markets. The extension of the APX Dutch power product range provides members with additional opportunities to optimise their positions, to manage risk and to further exploit trading opportunities. Importantly, the new products further contribute to market transparency by providing valuable price signals to the wholesale energy market. During the first 30 days after the successful launch on 14TH September, trading was brisk as 379 trades with a total volume of 11,798 MWh were traded on the Intraday and Strips Markets. In addition to the EuroLight™ trading platform, the Intraday Market is supported by an independent voice broker, facilitating price discovery and negotiations. Existing Members automatically have free access to the new range of products. All trades and prices are listed and are published on the APX Group website (www.apxgroup.com). ■

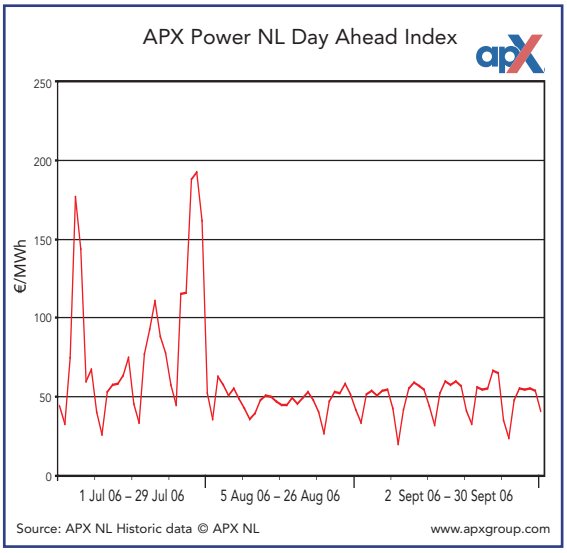
APX Group in the news - EV

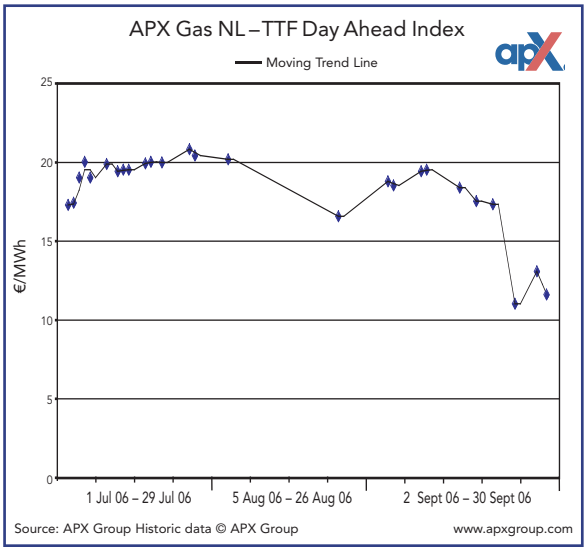
UK Gas: Negative prices on OCM 1ST - 3RD October

During the first week of October, there was an unusual occurrence on the UK gas markets as prices on the OCM turned negative. As a result, Sellers were paying buyers to 'take the gas off them'. The unusual episode was reportedly a result of a number of market factors covered in the press at the time.

The Negative pricing occurred on Sunday 1st October and continued to be volatile dipping in and out of negative prices until 3RD October. The lowest price reached was minus 5p/therm. The negative prices had the effect of setting the SMP Sell price as a negative price which was the first time ever for this to happen.

APX Indices





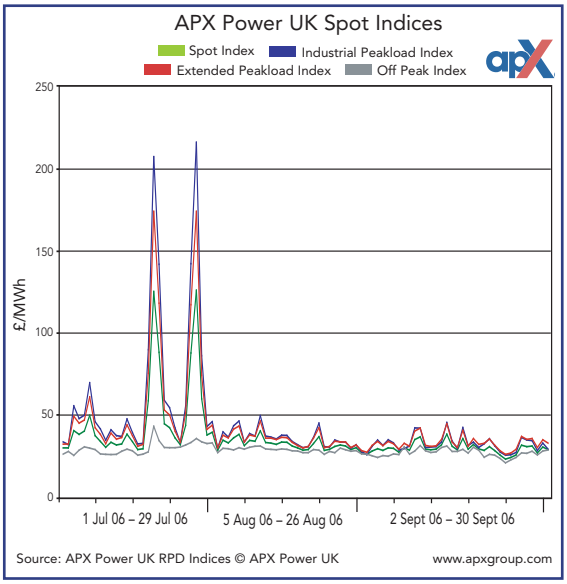
APX Power NL Day Ahead Average Prices

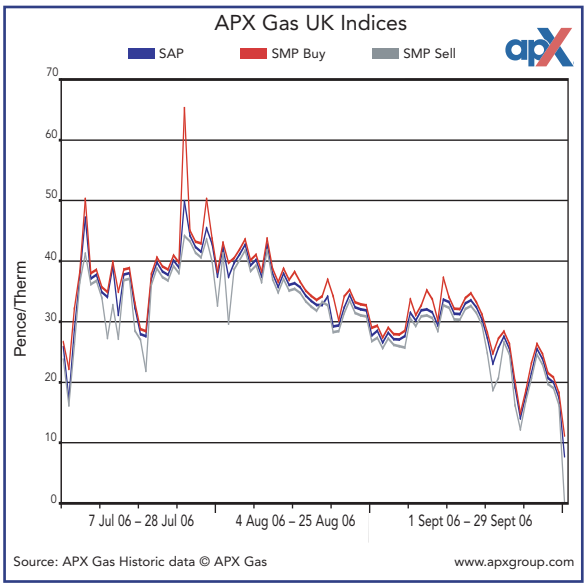
The APX published average prices are comprised of base load, off peak and peak load (07.00 - 23.00) prices based on the average price (in Euro/MWh) of Dutch power traded every day on APX for delivery the next day. Weekend prices are only comprised of base load prices and volumes.

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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