



"The Energy Market" Andrew Horstead

Good afternoon Ladies and Gentlemen. Thank you Mr Chairman and thank you to the Society for inviting me, representing Utilyx, to speak to you today. My topic today is energy, quite a loose topic, but what I have chosen is basically to give you an overview of how we see what's happening in the world of energy looking through the oil prices, touching through gas prices, power prices, having a look

at the price of carbon. I'm just giving a

summary of how we see things. A lot of you as consumers will I'm sure hopefully be interested in this as your energy prices no doubt have increased quite significantly over the last few years. The good news is that there is some sort of light at the end of the tunnel, certainly for the next few years at least. Beyond that it's finger in the air stuff but there is a lot of intelligence out there which suggests we should see prices coming off, certainly for the next few years which is good news for end users and also for consumers like yourself.

A quick intro to Utilyx, who we are. We are one of the largest, if not the largest market consultants operating in the UK at the moment. The company is only about 6 years old founded by Chris Boden. We currently operate an auction platform to which we invite suppliers to tender on behalf of your business. Currently 12 TWh around £800 million of business is done through that. However the majority of our business 40 TWh would be equivalent to £3 Billion of contracts is managed on a flexible basis. I'm Head of Research as part of our Risk Management team with my 3 traders who actually buy from a wholesale market on behalf

of you as consumers. So we are managing around 40 TWh for electricity and gas in the UK and are also managing some contracts for Europe.

These are some of the companies we are representing at the moment. I'm sure a lot of those will be familiar to you, certainly the ones on the top line, the supermarket chains. Some of the UK's largest energy consumers, Tesco in excess of 2-3 TWh electricity per year to give you an idea of the size of their consumption.

Starting off with the energy it has been well documented of late. It is in the last 2 years or so that energy has been going through the roof. Not just here in the UK but across Europe and also in the US. The two graphs show that primary energy has seen substantial increases since 2000. The chart on the far right showing the crude oil, UK natural gas, coal prices and [uranium](#). [UK](#) natural gas showing a huge increase in the last few years and I will come on to reasons why that has happened.

The graph on the left shows the huge volatility that we've seen in the energy prices. That's effectively the day to day swings in the energy price and it's where a lot of traders are making their money but there is a lot of uncertainty in the market and you are seeing a huge amount of fluctuations in the price. Gone are the years when gas prices were about 12p a therm year on year. We're now seeing huge inter day swings. Last year as an example we saw the January gas contract drop by 30p in the space of half an hour, which is, the largest inter day commodity swing ever. So this gives you some idea of how the markets can move reacting to headline news.

I will start here with the price of oil. This chart here shows the front month Brent Crude and WTI. WTI is the US equivalent and is traded on the Nymex in the US. The Brent Crude is traded on the IC in London and it shows back from January 2005 the evolution of the price of oil.

An interesting component for what we are going to focus on today is what's happened in the last quarter. We have seen a huge decrease in the price of oil. 25% from its recent peak and the question is, has oil bottomed out, are we going to see prices fall further or has the market turned and are we going to see price pushing back up to where they were at the beginning of August.

So what has happened this year? There are four key themes as we see it that have actually dictated the price of oil. The big one, there is the supply-side concerns and erosion of spare capacity. There's been a huge lack of investment in capacity upstream and also downstream for the best part of a decade. At the beginning of 2000 the global oil spare capacity was in excess of 6 million barrels of oil. So the market was flexible enough to react to any supply disruptions. What we're seeing now is that supply capacity has eroded to somewhere around 1 million barrels of oil. So the market is very very susceptible to price shock and to supply shocks and so when you had the problems in Nigeria, had the problems in Iran, it all heightens the tension in the market at the moment. This is why we saw big impacts when the two hurricanes swept through the Gulf of Mexico last year because it wiped out a huge percentage of US production and the market is still recovering from that.

I mentioned Iran and Nigeria. A lot of geopolitical risk happening at the moment. It's underlying the risk premium factored into the market at the moment and we certainly think that that is going to be a key determine going in for the rest of this year and 2007. Although the situation in Iran on the face of it seems to be easing somewhat, we still believe that the outcome is moving to a less benign situation and that ultimately will have a big impact on oil prices if anything comes about.

Demand - there is very strong demand this year. It's picked up from last year and I come to touch on that in the next few slides because I think it is important to understand the actual rate of demand. You see in the newspaper headlines talking about economies actually slowing down, changing consumer behaviour. But if you actually analyse the numbers behind that you actually realise the demand is particularly strong, particularly non-OECD countries, China, the Middle East and their demand is growing quite significantly.

We've also got the performance of non-OPEC supplies. That's countries like the US, the UK, Norway, Mexico. All their supplies are actually on the decline. It's well documented. So what that means is that there's increasing onus on the OPEC countries, countries like Saudi Arabia to meet this growing demand and this is why we are seeing that tightening in the spare capacity.

I mention what's happened over the last few months or so; we've seen quite a substantial softening, 25% in the space of about 2-3 months. The key driver there is the weather. We are smack in the middle of the hurricane season as I am sure you are aware the impact of the weather on your commodity. This season they are predicting a very violent hurricane season much like last year and it has actually turned out not to be the case. We've got the El Nino developing in the Pacific and that seems to be having an impact on why we haven't seen as many hurricanes this season as we did last season.

I mention the Middle East tension. The markets perception there seems to be resolving itself. As I mentioned before we think that is unlikely, it's simmering on the surface but it has the potential to trigger prices going higher if anything comes of that.

There are also very healthy supplies at the moment, stock levels are very good. If you look at the US which accounts for around 25-30% of global demand on a daily basis, their stock levels which is a key benchmark which comes in a report which is published every Wednesday, the market looks at that and if you look at the suppliers of gasoline and crude oil, the market is very well supplied at the moment and its

very good given that we are coming into the northern Hemisphere winter and that potentially could cap prices for the short term.

The liquidation of speculative positions - that's the hedge funds who are trying to make a fast buck. Entering the market believing that commodities are the way forward. Its been well documented - the hedge fund Amarant which lost \$6 Billion when the price of oil dropped by 25%. This gives you an idea of the sums of money that have been invested. However, we are of the thought that, okay, prices have suffered a little bit, we are potentially bottomed out because prices are firming for the rest of this year and into 2007.

As I mentioned demand growth looks set to outpace supply growth and I will come to reasons why. This graphic shows the demand outpacing supply. The demand growth has been increasing quite significantly in the last few years. In 2004 we saw almost a 3 million barrel jump. That's a year on year increase in demand. In 2005 there was a slow down, there was talk about China slowing down its economy, however we still saw over 1 million barrel increase. This year alone we are seeing another 1 million barrel increase in oil and I just note here the increase in demand likely for coming into this quarter, the market is anticipating another 2 million barrels of demand just for this quarter alone. The market is very susceptible to any supply shocks because demand still remains strong.

I mentioned the non OECD countries. The bottom bullet point gives an idea of the comparison between the OECD and non-OECD countries and the graphic shows that. The big change dynamic in the market are countries like China, India,

Middle Eastern countries, Latin America - we are seeing a huge increase in all demands compared to the non-OECD countries.

This graph shows why some of the OPEC member states are trying to keep prices at around \$50/55 a barrel. This shows the demographic comparing the UK and that of Saudi Arabia. As we can see Saudi Arabia, the majority of their population, around 50/60% is actually under the age of 40. In Saudi Arabia they need an oil price of around \$50/60 in order to ensure their economy is working. They have a lot of investment - the oil prices stimulates a lot of investment. There is over a trillion dollars worth of oil projects being developed in the Middle East area alone and that obviously stimulates new investment in the country and it allows the Government to provide for their economy. That's quite an interesting demographic comparing the UK and Saudi Arabia and that is fairly common with the rest of the Middle Eastern countries. So OPEC - the majority of the Middle Eastern countries are trying to keep the prices around \$50/60 a barrel. That is a key point going forward.

This chart reiterates again the demand, particularly in the developing countries. The graphic on the right compares demand for China, Japan and Germany. The increasing line you can see, quite frightening, is actually China, which shows the rates of increase in demand growth. However if you compare that on a barrel per person per year, China is well short of the consumption used by the US. Bearing in mind China is now the world's second largest oil user, its quite frightening to think that as their income levels reach the level where vehicle ownership becomes a real possibility and likewise in India, the impact that China will actually have on global demand growth.

Often asked in the office - what's the price of oil going to do? And the chairman here asked me that very question ! This chart shows the school of thought in the market at the moment. I have charted the current WTI at futures price with the oil forecast for the major financial institutions. As you can see there is a huge divergence of opinion on what is actually happening in oil at the moment. You have the Bank of America; they believe the price is going to drop to around \$45-50 a barrel mark through to 2008, compared to Bayerische, a German company, up to \$75. You can see there is a huge spread in oil prices. To try and forecast these is to try and understand what's happening in the market, bearing in mind these are only prices for 2007/8, It shows the huge uncertainty of the market and the analysts are trying to understand and piece together all the supply and demand fundamentals. So its not an exact science but it does give you an idea of the school of thought out there at the moment.

The reason why I talk on oil is because oil has a big impact on gas prices. The price of gas you are paying is indirectly linked to oil through European Indexation. The UK is linked to Europe with pipelines and we are having more and more of those pipelines coming on stream over the next few months and years, so more than likely the price of gas in the UK will be determined by the international gas prices. The reason why we are seeing a huge increase in pipeline gas - this chart shows it. The decrease in production from the UK/continental shelf. These are actual National Grid figures out to 2015/16 and as you can see that's quite a frightening decline in the North Sea. The red line is the percentage imports that UK will need. A lot

of this requirement for gas is actually going to be from the generation sector. There's a huge demand for gas and the UK Government policy is very much favouring gas generation over other fuel sources and you can see from a recent energy review and energy policy its favouring low carbon efficient technologies, gas is one of them. This is why we are seeing a huge increase in demand for gas.

However the market has reacted to that. As I mentioned the new import projects coming on stream. This graph shows the new projects coming on stream from this winter and over 2007/8. We've currently got the Interconnector which has just successfully completed its second phase expansion programme. We've got the L & G Grain facility, they are currently on stream and what we have seen over the last few weeks is the Langeled pipeline which will link ultimately to the huge field in Norway which will provide about 20% of the UK's demand on an annual basis, so it's a huge piece of infrastructure that has come on stream over the last few weeks. That will provide a lot of the gas for the coming winter and one of the reasons why we are seeing a softening in gas prices over the last few weeks. There are two new L & G facilities and another pipeline, the BBL pipeline which will link the UK with the Netherlands coming on stream and some other facilities. In total they will provide, basically double, the gas capacity that we will have here in the UK, so in theory there is going to be a lot of gas around.

The reality is that capacity doesn't necessarily mean that we will get that gas coming into the UK, so while we have seen the gas price fall, a word of caution, do not expect prices to crash to zero because we have this huge amount of gas. All of those pipelines are structured so they can divert gas to continental Europe. A lot of continental Europe do not have indigenous supplies of gas, they are heavily reliant on imports of gas. This is where the UK has been lucky of late because we have had our own gas resource in the North Sea. That is now in decline and the UK is competing with Europe and on an international basis, particularly now we have L & G.

This chart shows what is happening to winter gas prices. I have shown the winter 06 gas price and that contract is now expired. It's showing the price for gas for winter 07 and the bottom one is winter 08. So if you want to go and buy a tranche of gas for winter 08 you would be paying about 53p per therm. So we are at levels where we were around May 2005. As we can see prices actually spiked up around 89p per therm at the beginning of the year. A lot of that was on the back of the rough storage facility, some of you may be aware there was a big fire and explosion on 16 February this year which wiped out that facility for the best part of this year. That facility provides 10% of the UK demand on a peak demand day, so it's a key asset in the market with the UK users to meet our demand for this winter and its one of the reasons why we saw gas prices spike, but also highlights the issues in the market at the moment, that again we are very vulnerable to supply shocks. The UK doesn't have enough storage assets, we are going to be increasingly reliant on imported gas and the gas prices there will reflect that.

I show you the same chart now but looking at summer gas prices. Fairly similar in the decrease over the last few months, however there is not the huge amount of volatility. Summer gas prices are more influenced by oil prices; there is a six months time lag on oil prices as they filter through to gas prices. So the price of oil today will have an impact on gas prices in six months time. This is why we are seeing the summer gas contract moving in relation to the movement of the price of oil. This is why we haven't seen the summer gas prices come down to the same level we have in the winter prices. These are still being supported by the price of oil.

This next chart really reiterates that point. The key price there is the Troll price - that is the long term European benchmark track, so this is where a lot of gas prices in Europe are linked to. It's a lot of gas which is priced at the German border and it really determines the price of gas in Europe and the price of gas in the UK. What I have done is charted the

NBP forward curve. If you look at the period that summer price is around the Troll price, so it reiterates the fact that all prices do have a big influence on gas prices here in the UK and as we become more reliant on imported gas, more reliant on international gas prices setting our price, that relationship will remain, but it provides one reason why we look at all prices quite carefully.

Henry Hub is the price of gas in the US. This chart shows UK NBP versus what's happening in the US which is reflected by the red line. The reason why we look at the price in the US is because the L & G has now made it a global market, we are now competing for gas with the Americans. What this charts says is that UK prices are priced in excess of the American market so in theory the arbitrage suggests that we

should be getting a lot of L & G, it should be coming to the UK market anyway. The gas prices in the US are fairly static of late. Their storage levels are very high at the moment so their prices have softened quite significantly. However, again it is another market we are competing against, another market we have to look at and focus on.

This chart reiterates the impact L & G had on the main trading hubs. Prior to L & G you had the primary markets, the North American market, the European market and the Asian market. Now you've got an L & G market you can see the trade flows. The UK is becoming increasingly reliant on gas from the Middle East. Qatar is going to be potentially one of the UK's largest suppliers of gas through L & G supplies, so while we are now buying some Qatari gas we are now also competing with Japan as an example. Japan is the largest importer of L & G gas at the moment. They are having big problems at the moment with their nuclear facilities and their coal supplies. So they are buying L & G at whatever price they can pay. So a lot of the L & G facilities are actually being re-routed from the Atlantic basis, i.e. ships that were originally destined for the US are now going back the other way to supply the Japanese market because they are willing to pay whatever price in order to meet their own requirements. So the market has become truly global and it reiterates that point. The UK is no longer standing alone; we are competing on a global basis.

What's going to happen over the next few years? This is a chart we put together based on the contracted supplies, the new import facilities coming on stream compared to the central case demand. What we are showing there is that for the next 2/3 years or so we should have a gas glut in the UK. However beyond that with the rate of decline in the UK continental shelf versus the expected demand growth, that glut will soon turn into a shortage and so whilst those of you looking for contract negotiations, renewals take advantage of the prices whilst you can at the moment because there is an opportunity beyond say 2010 there is a potential for prices to rise again. And again there is still a lot of uncertainty about future oil prices at the moment. If you look at the old curve there are still prices in excess of \$60/70 a barrel. If you look further out the market is expecting prices to remain high.

This chart shows what happens - we do a lot of modelling in the office where we try to understand what's happening, what's driving the price of gas. What we have done here is provide effectively a supply and demand situation for a typically cold winter. The demand is the red and the pink line at the top and underneath is charted the gas which makes up that demand. The blue that is the bulk of that is the UK continental supply. On top of that you've L & G imports, storage facilities and other peaking fields which actually meet our peak winter demand. We then extrapolate that out because each one of those has a price. This is how we derive the price

of gas. Each of one those have a price and depending where you go along that supply cost curve ultimately determines the price of gas. If you look at the far right, a cold winter scenario - you've got demand anywhere between 450/500 million cubic metres per day, that's quite a rare occurrence. This is what the Met office call there 1 in 50 winter. As you can see we use all our indigenous supplies, we will be using all the energy facilities, we will be using all our imported gas, storage, any gas from the North Sea, and to the stage where we actually require demand type management, i.e. you as end users will have to switch off in order to meet the demand. Obviously that comes with a price and that's why in a very cold winter you potentially could see prices in excess of 100p per therm. We saw that last winter and there is still a bit of caution in the market that we could actually see that again this winter. The weather forecasters are predicting a milder than normal winter.

This is our forecast assuming all the infrastructure, the supply facilities, the coming on stream as planned - what we are showing is the UK cold winter scenario versus a normal winter scenario and a mild winter scenario. Not much change in the mild and normal winter but if you can see in the spikes in the cold section, if we have a cold winter even though we've got all this gas you could see prices anywhere between 70/75p for this winter. Prices have come off quite significantly, we are around the low 60p per therm at the moment for winter gas, however there is still potential if we have a cold spell for prices to climb. However if we have any delays in the supply of those facilities coming on stream, we could see prices climb even higher. This shows the same forecast but with a delay in supplies and increasing reduction in the rate of decline on the continental shelf and for that we are seeing in a cold winter scenario, gas prices in excess of 100p per therm. Again it is something we saw last winter and it is something the market has not discounted that is why there is a lot of risk premium factored into the forward curve at the moment.

That's a quick roundup of what's happening in the world of gas. Power is a secondary fuel so it is very much determined by the fuels that derive it. Gas is the largest fuel source in the UK at the moment, it's around 40% of our UK generation, coal is around 35%, however because we have had very high gas prices over last winter we actually saw coal generation producing in excess of 50% of our electricity last winter.

That's thrown all emissions targets out the window and that's why we are seeing very high carbon prices as well and it's one of the reasons why we are seeing a huge volatility in the power price. But this is effectively a mirror image of what I've shown in the gas prices. With gas prices softening we have seen the power prices showing the winter and summer contracts, I've put them on the same chart in this instance. The top three are the winter contracts, the bottom two what's happening in the summers. As you can see the summer ones are showing a little bit of stability. Again that is a reflection of summer gas prices which have been by comparison fairly stable and again supported by oil. The decrease in the last few months for power is a reflection of the falling gas price.

I've mentioned carbon, I'm not sure if you would be involved in the European Emissions Trading Scheme, ultimately the price of power that you pay will be influenced by the price of carbon as well. The way the scheme is set up, I won't go through this in any great detail, but it is a cap and trade scheme so essentially those with a surplus of allowances are allowed to trade in the market and those with a shortage are allowed to buy from the market from anyone who has a surplus.

The way the scheme has been set up is that the generation sector has to account for over 50% of the emissions reductions. This is why the power generators are passing

through the proper cost of carbon to end users and this is why we are seeing carbon as another fuel source that we're having to look at, it is another fuel which we are having to analyse and understand and is having a big impact on UK and continental prices.

This chart reiterates what I've said before, the major sectors who are included within the Emissions trading scheme. The heavy emitters, the cement, lime and glass productions, all the gas, metals, the pulp and paper and also the public power, basically the generators. As we can see the generators themselves are the one who have been burdened with the largest amount of emission reductions, in fact a lot of the other industries have over egged their allocation. It's been widely documented as well that carbon prices crashed from around Euros 30 per tonne to Euros 9 per tonne because the emission data published, the 2005 emission data showing that a lot of these sectors are long in carbon, i.e. they were given too many credits than they actually needed and so they've got a lot of surplus compared to the power sector which is significantly short. This is why carbon prices haven't crashed, it is because the power sector are still incentivised to keep carbon prices high because they can pass high carbon to power prices and obviously the higher the power price the more money they make. This is why companies like Drax 2 years ago, Drax is the UK's largest generator, in terms of its single asset it has the 4000 megawatt coal fired power station. Two years ago that was bankrupt, this year it posted profits of £379 million for the first half of this year and that's in the space of 2 years purely on the back of high carbon prices. In fact as the power prices got so high that coal is now the favourite fuel source. It is now cheaper than burning gas. So that's one of the reasons why we are seeing all our emissions targets thrown out the window, in fact you see various articles in the newspapers saying that we are going to miss our Kyoto targets.

Again this shows that carbon not only influenced by fuel prices, there is a huge amount of influences which impacts, both on the demand and supply basis. It's quite a tricky commodity to try and understand a model and you get a lot of analysis out there showing huge price swings of what the potential price of carbon can be. But what our chart shows is that there is a huge amount of influence that can drive the price of carbon.

And again this shows the 2005 emissions data which I mentioned before. The market was expecting anywhere between 60 to 100 million tonnes shortage, i.e. we produced too many emissions for the total allocation. When the data came back we actually realised we were close to 100 million tonnes long, so in theory there is 100 million tonnes of surplus credits in the market at the moment which again is one of the reasons why we have seen carbon prices crash which is reflected in this chart here.

This is showing the price of carbon for December 2006 and December 2008. The reason we show 2008 because that is when the Kyoto compliance comes into play. It's phase 2 of the Emissions Trading Scheme and so there's quite a tight correlation between the two markets. The interesting part of that chart is what's happened in late April, early May when we saw that huge carbon price drop from around Euros 30 per tonne to sub Euros 10 and it's been trading around Euros 10-15 since. Again the reason why we haven't seen the carbon price crash is because the generators are incentivised to keep carbon prices high in order to make returns on the power price.

As with gas, the UK power markets are going to be constrained by supplies going forward. I have just highlighted two examples here, basically the nuclear closures and also coal plant closures. This is a big issue which the Government

really is trying to address at the moment. We have just had the publication of the Energy Review. It basically given a lifeline to nuclear, however even if we got the go ahead today for a nuclear power station it wouldn't be until 2018 before that facility would actually be producing electricity. There are huge lead times and it's very very costly. In between we've got a significant percentage of our nuclear facilities actually going to come off stream. They are coming to the end of their lifetime and they will start to close by 2010 and the majority of our nuclear facilities will be shut by 2020. So that's potentially 20% of our current generation asset closing and there's not a great deal to replace it at the moment. The Government is talking about renewables, but renewables were only producing around 4/4.5% at the moment and that is significantly well short of what we need in order to just offset this decrease. On the top of that you've got coal closures. We've got the Large Combustion Plant directive which comes into play from 2008. Now where the Emissions Trading Scheme limits the amount of the production of carbon, the Large Combustion Plant limits the emissions of sulphur, noxious oxide and particulates from the large combustion plant, primarily coal. Plants who are affected have the option of opting into the scheme. If they do that they have to install very expensive flue gas sulphurisation scrubbing equipment which basically takes out 90% of those emissions. If they don't, between 2015 and 2018 they are only allowed to run for 20,000 operating hours. Now if you do your sums that means in theory they run all the time during the baseload and peak times but those coal facilities will be shut within 2/3.5 years. Again if you read the Energy Review the Government believe that the market will respond to this, we'll have new generation facilities being built, however given the price of coal in relation to gas, everyone is burning more coal so that 20,000 hours will be used up very quickly. So by 2011/12 you are potentially seeing a supply crunch in the UK and again if we had a new facility coming on stream today, you would be very unlikely to see a new gas or coal plant being built within those timescales. Again these are all issues which are going to be supporting prices from 2010, 2011 onwards and it's something to be aware of when you are looking at your contracts rather than looking for the next year and the year after, you need to have that long term horizon, what's going to happen in 5 years, 10 years, because ultimately your decisions now will have an impact on that. So when you look at your strategies, I'm not sure whether a lot of you are on fixed price contracts or flexible contract, it's certainly something to be aware of. There are issues out there which will have a big impact on the market and at the moment there is not a great deal happening out there, there is not enough generation facilities being built which is one of the reasons why prices will be supported. As I mentioned the short term gains, take advantage of them now while you can but beyond that be aware that there are situations and issues in the market which could push prices back up to much higher levels.

Just to wrap up, this is our forecast through to 2009. Again this feeds back from our original gas forecast. I shown a mild winter scenario and a cold winter scenario, this is assuming all the infrastructure build. We are potentially forecasting power prices for this winter in a cold winter scenario of around £55/60 per megawatt, however in a mild scenario we are seeing prices around £50 per megawatt hour. There is a slight downward trend to that curve, again that's a reflection of the gas curve, i.e. the projections for gas that the prices will be softening over time. However beyond that we will start to see prices rise again.

To leave you with a few thoughts -

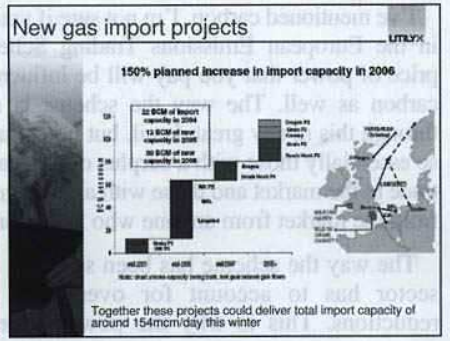
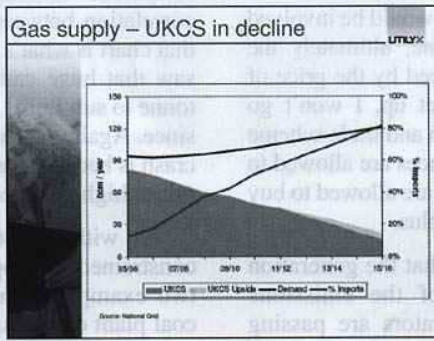
Increased capacity is pressurising the winter contracts lower. We've seen that. We've seen gas prices come off. New gas facilities are coming on stream, in some cases ahead of schedule, that's why we've seen some of the risk premium in winter contracts having fallen. Because of the mild weather and law of supply at the moment we've seen prices with those buying on short term contracts, i.e. buying on darehead basis, we're seeing prices come off to reflect that. A reflection of the very mild weather scenario at the moment. This is very unseasonal temperatures we are having for October and there is also the growing supply confidence and that's one of the reasons we have seen prices very low. Last week they were down to 5p per therm. For those of you on a darehead basis I'm sure you would have jumped at the change of that.

However the market is yet to be tested by a cold winter. That's the key issue at the moment. For the last ten years we have had milder than normal winters so we have nothing to compare it against where we've got very tight supplies compared to what we have had in the past and we have not had a cold winter situation. If we were to we could see prices firming quite significantly as I showed you in the forecast.

Oil is providing support for the far curve particularly for the summers and that will be the case and power lastly is a proxy for gas but we are also seeing carbon as the main driver. So just to leave you with a thought, what does that mean for you? It's effectively choosing the right contract which gives you sufficient flexibility where you can actually take advantage of market opportunities.

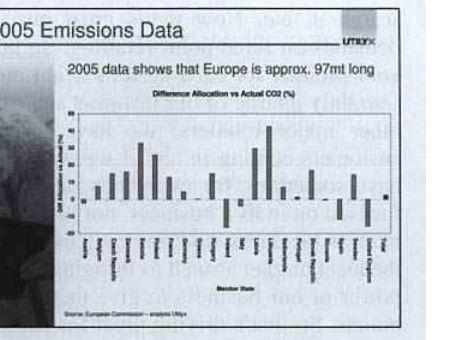
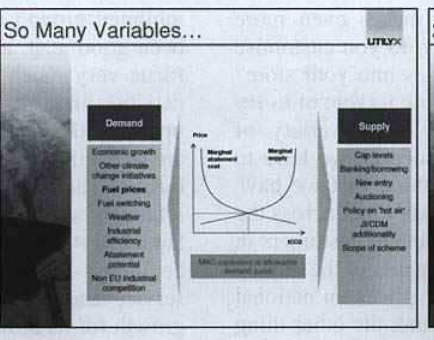
What has happened this year

- 4 key themes apparent in 2006
 - Supply-side concerns and erosion of spare capacity
 - Geopolitical tension in Iran and Nigeria
 - Robust demand particularly non-OECD countries
 - Performance of non-OPEC supplies
- Recent short-term softening attributed to:
 - Weather (or lack of it in case of hurricane season)
 - Easing in Middle East tension (unlikely to last for long)
 - Healthy supplies heading into the northern hemisphere winter
 - Liquidation of speculative positions
- But market is constrained: demand growth looks set to outpace supply growth



The EU ETS at a Glance

Phase 1 (2005-2007: 25 Countries)		Phase 2 (2008-2012)	
2004	2005	2006	2007
Projects registered		Review of registries	
Sectors	Power & heat, refineries, metals, chemicals, iron & steel	More sectors: aviation, shipping?	
Goods	Diesel emissions, and process emissions CO2	Diesel and process emissions CO2 and (?) All GHGs (CO2, CH4, N2O, PFC, SF6)	
Allocation	EU ETS Directive (2003/85/EC) Possibility to auction up to 10% (not yet possible)	Review allocation model. Possibility to auction up to 10% (not yet possible)	
Penalty	EUR 40/t	EUR 100/t	
Child input	Only from DSM	From DSM and J	



Question: Richard Ball, Colchester - In relation to the facts and figures that you've just presented, how much impact would you say that the domestic power producing products that we are seeing coming onto the market have on this situation?

Answer: Well the domestic situation is very very different to what's happening in the industrial/commercial sector as I mentioned at lunch today. It's a very different situation. The reason why companies like Centrica are increasing their gas prices almost on a quarterly basis, like N Power increased their gas prices three times this year alone, is because of the hedging strategy. A lot of these would be suppliers have

basically too many clients in relation to their assets, i.e. they don't have enough self generation, they don't have enough shares or own enough gas fields so that is why Centrica have in excess of 11 million gas customers but it doesn't have enough gas to supply them, so Centrica, as with the others, have to go to market to buy that gas in order to meet their requirements and that's why we are seeing very high

domestic prices which are far in excess of what you pay as an industrial user. So it is two very distinct markets. The domestic sector is in a degree offsetting or subsidising the industrial sector in a sense. But again there are very different hedging strategies that the suppliers are basically using. They have too many customers for their own supply base