



# WESTMINSTER ENERGY FORUM

## CONFERENCE PROCEEDINGS

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## TRENDS IN UK ENERGY POLICY & IMPLICATIONS FOR KEY SECTORS

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Westminster Energy Forum

# Trends in UK Energy Policy and Implications for Key Sectors

18 October 2006

## Opening Remarks

### **Chris Lambert, Director, Westminster Energy Forum**

The main themes covered last year were: the Ofgem focus on the approaching tight markets and cold winter, and fears about gas and what a potential energy review might produce. Since then, wholesale gas prices have risen and fallen, but the Energy Review was pragmatic and bullish, with nuclear being supported and British Energy remaining a key issue.

There has been increased nationalisation of energy resources in Latin America and Russia and strong bilateralism between states, and the EU is soon to announce on market competition. These have been turbulent times for energy markets.

It remains to be seen whether President Bush's vow to cure America's addiction to oil is realistic, given the lack of alternatives. The St Petersburg G8 only highlighted the growing difficulties internationally for all parties. In that context, the UK Energy Review is a timely document.

## Big Picture Issues: Political, Economic and Environmental Contexts for UK and EU Energy Policy

### The State of Play: Features and Political Critique

#### **Charles Hendry, Shadow UK Minister for Energy**

Today, there is both growing enthusiasm and confusion about energy: society knows it needs to do more but it is not certain what it should do, or whether the cost is justifiable. However, the overwhelming majority say something needs to be done.

However, gas consumption rose last year by 3%, with oil rising by 1% and coal by 6%. Last year, 9 billion tonnes of oil equivalent were consumed, which is unsustainable. The International Energy Agency (IEA) has said that primary energy demand will grow by 60% by 2030, with developing countries accounting for two thirds of that; and by 2030 fossil fuels will still account for 80% of energy consumed. That is unsustainable.

Three years ago, the energy white paper looked at how to extract more from existing sources. Now, the aim is to bring on stream a range of alternative supply

solutions which were not previously factored in. Security of supply is a key issue, but there is also a need to reduce carbon emissions.

Britain should take the lead as a responsible nation, so Government must set the framework in a way which encourages long-term investment. This is why Government is looking at placing a price on carbon under a 'cap and trade' system. Carbon certificates would be a prerequisite to producing carbon, and the certificates would be reduced in number over time in a predictable manner.

Historically, carbon targets have been too long term, or have simply been shifted; the Government target of 10% of supply from renewables by 2010 has shifted to 20% by 2020. Firmer commitments are needed. Perhaps the delay in announcing the next license round for offshore wind is because it cannot contribute to the 2010 target, with longer-term solutions being ignored in favour of target-meeting agendas. A fundamental shift is needed. Coal and gas have an important future but must be allied with carbon capture and storage (CCS).

The EU energy-trading scheme (ETS) needs to be reformed; whilst a long-term carbon-pricing framework is desirable, there is currently scope for abuse. Long-term planning is also needed for investment decisions to be made now towards energy security for the future. In the future, half of the UK's electricity generation will be dependent on imported gas, and the UK will become increasingly reliant on Iran and Russia for gas and oil imports. Domestic generation sources are required.

The Government should not be choosing the path forward, but through the Energy Review should create a framework to give all alternatives the maximum opportunity. Nuclear should operate on a level playing field with other sources. The nuclear industry has said it can build new nuclear power stations without subsidy, which it should be allowed to do.

The planning system is currently preventing offshore wind connecting to the national grid and three times the current wind-capacity has stuck in the planning system. Local democratic principles and national interests have to be reconciled. Standard designs and requirements for stations would be beneficial to investment. Sweden has won broad local support for nuclear waste disposal projects, and Britain has to do the same. The nuclear industry of today is light years ahead of 20 years ago.

If the UK is to meet the target of 60% emissions reduction by 2050, the full range of energy supply alternatives is required, including sequestration and micro-generation. The current, unfair system favouring onshore wind and methane needs to be reformed to encourage other forms of renewable generation.

Whether renewables are one of Ofgem's primary duties should be assessed, and it is absurd that the national grid denies people connectivity for many years after planning permission has been granted.

Energy conservation might have to be compulsory, with boilers producing combined heat and power (CHP) and fridges having an automatic cut-off. The older housing stock needs to be overhauled. In general, the Conservative Party believes Britain can have secure, domestically produced and environmentally-friendly energy sources. Politicians need to work across parties to develop long-term energy plans that investors need. Politicians should not use energy as a political tool. The UK needs to reconcile national benefit with private interests within a secure environment.

## UK Policy Development

### **Daron Walker, Project Director, Energy Review Team, DTI**

Many of the above comments are very accurate. The key long-term challenges include tackling carbon emissions and delivering secure clean energy. Approximately one third of carbon emissions come from electricity generation. Climate change requires international cooperation; Britain cutting its emissions by 50% would reduce global emissions by only 1%. The EU ETS already introduced sets a Europe-wide carbon price, which is positive, but it needs to be developed much further.

The Energy Review aims to increase environmental standards throughout Europe on new homes, cars and products, and to encourage all parties voluntarily to phase out 'dirty' products. The DTI is consulting on a potential 'cap and trade' scheme to drive efficiencies in the business sector. Energy suppliers should be given incentives to drive energy efficiency emissions in the domestic sector. Good consumer information is another element in the drive to change consumer behaviour. The DTI has committed to making Central Government carbon neutral by 2012.

The UK will continue to be dependent on fossil fuels in the medium term for transport and heating. There is a push to include road transport in a carbon-pricing scheme. Low-carbon technologies will comprise a major component of the longer-term transport innovation strategy. The biofuels contribution to fuel consumption will be consulted on in 2007.

There are two principal moves in micro-generation: barriers to planning are being removed, and encouragement of energy suppliers to buy back surplus electricity.

The Energy Review focused very much on the demand side, but electricity is so important because approximately one third of the UK's electricity need to be replaced within the next 15-20 years. The framework must be right. If the supply chain is not reformed, carbon emissions will be locked in for the lifetime of the assets.

A central scenario from Government projections shows coal consumption and production falling, with gas use increasing significantly. Government is keen to clarify its framework: it is entirely committed to a carbon price, with an improved ETS being the best way forward; and there is a growing emphasis on emerging renewable energies. Government will improve energy-market information analysis and will publish more forward-looking data to inform the market what policy is based on. Government has committed to reforms on planning in transport as well as legislation to improve public inquiries on large-scale electricity projects. Public inquiries should involve concurrent hearings, pre-inquiry agreements, and timescales to improve the whole process.

The Government is currently consulting on nuclear. Barriers to greater use should be removed, and pre-licensing is required to remove the risk of design changes during building. National strategic site assessment is needed to allow local planning inquiries to focus on local issues. The private sector will have to fund energy markets; there are no special subsidies for nuclear.

The Government will strengthen the Renewables Obligation towards 20%; this Obligation will remain ahead of renewable growth, to incentivise investment. There will be new funding for environmental technologies through the Environmental

Transformation Fund. The Coal Forum will meet for the first time in November 2006 to discuss how to make the UK coal market sustainable in the long term. Government will issue a further statement on CCS in the pre-Budget report this year.

UK demand for imported gas will rise to 2020 and there are political risks associated with gas importing. There are also risks of: insufficient investment and ineffective markets. The EU needs faster liberalisation and new infrastructure needs to be built; longer supply chains inevitably increase the insecurity of gas supply.

The framework needs to encourage North Sea investment, to decrease the rate of decline in production. The planning process for gas will be streamlined and planning processes generally will be improved.

This summer, Defra launched a consultation on the third phase of its energy efficiency commitment. Should energy efficiency cover micro-generation and metering in order to address behaviour? A 'cap and trade' system is needed and there will also be a consultation and potential proposals on an energy performance commitment among energy-intensive users.

The nuclear policy framework consultation completes at the end of October, with the renewables consultation being launched in October. The planning and electricity proposals will be consulted on in November, and a foresight study on long-term distributed generation will be conducted to assess potential alternatives to centralised generation. An energy white paper will be produced in 2007.

## The UK Energy Review

### **Tony White, Policy Director, Climate Change Capital**

The EU ETS has produced higher prices, windfall profits for utilities, hardly any change in operations across Europe, and no change in investor behaviour throughout Europe. However, there are massive developments in China, India and Brazil under the Kyoto Protocol clean development mechanism (CDM) projects.

People say the carbon price should be related to the cost of abatement. What does carbon need to cost to equalise the cost of running coal and gas stations, bearing in mind that coal is twice as carbon intensive as gas.

Until April 2006, the imputed carbon-price curve and the actual carbon-price curve were 90% correlated. However, the carbon price was only one third that needed to make people reduce coal consumption and increase gas consumption. This happened because grandfather rights meant there was no need to buy allowances until forced to in 2007, and the 2007 effect could be discounted back to the current date. Additionally, the carbon emissions market was oversubscribed because the Government asked the market what it wanted emissions to be.

No investor would invest based on future carbon prices alone, because there was no visibility beyond 2007. Another cause of higher investment in developing is that some projects in India and Brazil have produced much quicker returns than the ETS could promise. A massive change is needed in Europe's infrastructure; many of Europe's power stations will be changed in the next 5-10 years and the market needs to drive investment allocation towards the right solutions. A rash of new investment is unlikely, but investment is needed in equipment to calculate a carbon price.

One proposed solution is to create an additional measure within the EU ETS. If the EU ETS price fell below a certain level, a carbon tax or climate change levy could be introduced to set the floor at a certain price. A climate levy of, say, €2 per tonne would mean the price of production at a new power station would not be less than €15 per tonne. €15 per tonne would be more than enough to allow a CCS scheme below the North Sea. If the Government set the correct framework, it would know it would receive a certain level of energy-related revenues, thereby providing secure funding for public sector spending.

## Discussion

### **The Energy mix**

Ideally, the predicted energy gap would be filled by renewables. If CCS can be made to work, there is a massive future for coal; if it cannot there is a massive gap to fill. If nuclear power is to have a future, planning changes are required. A Conservative government would not make retrospective changes to plans.

### **Energy reviews**

The Conservatives adopted the same terms of reference as the Government used for its review, which placed a stronger emphasis on electricity than on other forms of energy. That was the first stage for the Conservatives; broader areas will be addressed in coming months.

### **The EU ETS**

The DTI is focusing on increasing the effectiveness of the EU ETS; the scheme will be needed beyond 2012 and the political drive is enormous. Research indicates that, should society do nothing to change the *status quo*, economic growth would be greater in the short term but would be adversely affected in the longer term. An improved EU ETS needs to be in place prior to the next election, to provide longer-term security.

### **The investment environment**

Investors are driving activity in the United States. American utilities are telling the US Government to increase investment certainty on carbon caps. Americans are talking widely of the importance of CCS and how it will happen. Businesses and consumers are foreseeing where products and services will go. Monetary savings from energy efficiency need to be redirected into investment.

The market, possibly rightly, suspects the British Government would intervene if domestic price rises exceeded those of foreign markets. A capacity mechanism of some kind is needed, a better one than the prior model. Oligopolies could control the market, making just sufficient profit to fund capacity building when needed; oligopolies are acceptable provided they do not abuse their power.

The Government is removing unnecessary barriers preventing private companies from building nuclear power stations. The carbon signal is the way forward for investment incentives. Customers want electricity and energy, and provided the framework is in place the market will invest in new capacity.

## Energy efficiency

Instead of doing more with less, the UK is now trying to do more with more. All evidence globally shows that energy demand rises as economic wealth rises, but improvements in transport and housing could mitigate economic growth.

# Key Questions of Delivery and Development Facing the Corporate Sector – Needs and Expectations

## Drivers and Trends in World Energy Markets

### **Stewart Gray, Vice President, Gas and Power, Wood Mackenzie**

The good news from the oil price review is that by 2015 there should be quite a significant fall in oil prices. Supply continues to outpace demand, with non-OPEC supplies increasing to 2013 and prices falling to below \$40 per barrel and remaining there until after 2015. Thereafter, there will be a steady increase to 2025 as the OPEC share increases. However, short-term instabilities remain.

The price of European gas will fall, being indexed via contracts to the oil price. As the North Sea capacity is released, the UK-specific scarcity premium ought to disappear in coming years. There is flexibility in gas resources, but to 2015 there will be a general tightening in global gas markets and oil and gas prices will rise after 2015.

Norway is the largest gas exporter to the UK, with Egypt and Nigeria also being large suppliers. Russian exports could strengthen longer term. The close political and corporate relationships between Russia, France and Germany are important factors for gas security in Europe, given the UK's slightly weaker relationship. However, Gazprom will attract customers in Europe.

The new gas-import routes will significantly improve the security of gas supplies in the medium term, to 2015, due to Norwegian and LNG supplies. The short-term storage position is improving and new projects are coming forward, but consent delays are an issue. Planning and consents processes need attention. However, questions remain regarding the longer-term security of supply and strategic storage. A severe winter, coupled with disruption to a major source, would pose a problem. Controlling the gas supply domestically is preferable.

There is a proposal for an energy-supply equivalent to the Bank of England's Monetary Policy, focusing on one target such as gas supply. Two new gas-fired projects are broadly confirmed, marking an end to the hiatus in conventional plant building, and there are other potential coal-fired and gas-fired plants. Combined with the renewable builds occurring, adequate plant margins might be achieved.

Investment decisions towards 2015 need to be made imminently; there is a risk of losing fossil plants under the Large Combustion Plant Directive (LCPD), and potentially to lose nuclear capacity thereafter. It is necessary to retain some flexibility. It is uncertain whether large life extensions will come from advanced gas-cool reactors (AGRs); if a nuclear contribution is wanted, new builds might be

required. Demand peaks are likely to be picked up by the older combined-cycle gas plants, which still run on gas. As such, from 2015 onwards there will be scope for new peaking plants, which would need to be clean.

Tony's comments regarding carbon prices were correct; the scheme is successful although it may not be producing the outcome that politicians wanted. Prices are not where they need to be, and they are neither logical nor transparent. A larger and more stable signal is needed to drive investment.

Security of supply leading to 2015 is the key issue with gas; beyond then, decisions need to be made now. Russia has its partners, so the UK needs to remain the market of choice for Norway and LNG suppliers. In power generation, there is uncertainty and instability around 2015, relating to the LCPD and AR issues. Concrete steps are needed to enable the required investments, including streamlining planning. It is hoped that the DTI's consultations reach the action stage.

## Upstream: UKCS and Extending Indigenous Resource

### **David Odling, Director, Gas and Power, UKOOA**

The UK Continental Shelf (UKCS) has been around a long time but there is yet life within it. Total production has reached 35 billion barrels of oil equivalent (BOE), with the ultimate recovery level being 50-60 billion. The oil and gas sector has been by far the largest-investing industrial sector in the UK economy for many years. Yet-to-find and yet-to-be-produced reserves are estimated to account for 16-27 BOE, requiring huge investments over 20-30 years. If the approach is correct, the UKCS will live a long time. The crucial issue is: what are the elements needed to sustain productive investments in these sectors?

The policy is simple: maximise the recovery of the economically recoverable reserves. The steps on the path are interdependent on each other. It is necessary to exploit the known reserves and brownfields as much as possible. Production has been declining and the decline even accelerated from 5% in 2003 to 11% in 2005 – but production is expected to rise in coming years. Production is currently 55% oil and 45% gas, but most of the potential increase is in oil, rather than gas, shifting to 60%/40% respectively.

Second, there are opportunities and challenges. Despite increasing prices over recent years, investments which were marginal two or three years ago, have become marginal once again.

Third, it is necessary to maintain exploration. Estimated exploration and appraisal have fallen this year, but production drilling has risen; the former is looking for new discoveries, while the latter drills the known fields. Some companies have spent up to £60 million exploiting wells in extremely adverse conditions, but known fields with favourable conditions can cost around £5 million.

Fourth, in the base case the infrastructure life needs to be extended. The oil price effect on extending infrastructure life is modest, but finding more oil and gas can dramatically affect life expectancy. All the pieces have to stitch together; if the infrastructure cannot be managed safely and economically it has to be decommissioned and some potential will be lost.

Fifth, there is a need to address decommissioning. There is currently a wide variation on expectations for the decommissioning bill, but OCOOA expects it to cost £12-15 billion, although cost inflation is expected. The present regime needs to be reformed now, to provide a predictable, stable environment. Understandably, the Government wants security and it must be established that any potential new supplier has the capacity to meet its obligations. However, new investors in the UKCS are needed; the majors are selling at the periphery and they want to know they can sell their license cleanly, free of future liability concerns.

Sixth, competitiveness is a major issue. It now costs around twice as much, BOE, to find gas in the UK sector as it does in the Netherlands. Norway's costs are approximately one fifth of the UK's, although Norway is expected to see higher costs as its reserves fall over time. The UKCS is a good market with many investors and a large supply chain, but new talent is needed.

The prevailing high prices tend to mask the underlying trend. The price of oil has risen significantly and costs of drilling have exploded. The Chancellor has received more of the largesse, so the post-tax margin is narrowing quite significantly. Things could become very interesting indeed if there were a significant fall in price. However, this cyclical industry tends to find solutions to problems.

UK spending as a percentage of the oil price fell during the early 1980s, rising again as the oil price crashed during the late 1980s, and falling again with recent higher oil prices. The UK received huge funding until the price in the 1970s' crash, but cost became a huge issue and more basins opened up to international investment during the 1990s, giving much wider investment choices. The majors have consolidated but new investors have entered, benefiting from lower barriers to entry. Technical innovation has been one of the most powerful driving forces.

Whilst the future is in the private sector's hands, government has an enormous influence. The Energy Review reaffirms the need to maximise recovery of the North Sea's reserves, and recognises that oil and gas are crucial assets for the UK. Enormous investment is required and the tax burden is not sustainable at its present rate if the sector is to exploit the basin as necessary. Tax and decommissioning are two of the biggest areas for debate with Government. The UKCS is difficult and is increasingly costly, and an appropriately sensitive fiscal and regulatory regime is needed to maximise the economic recovery of the nation's reserves.

## Power Sector: Implications of Uncertainties

### **Stephen Machin, UK Head, Power and Utilities, KPMG**

Very soon, crunch time will be arriving for the UK electricity sector. All the political parties are saying UK consumers should take part in increasing energy efficiency, although there is little doubt that UK energy demand will grow in coming years. The market will continue to focus on gas; it is competitively priced and increasingly so; it is well developed, safe and well understood. However, gas produces higher CO<sub>2</sub> emissions than solar, wind and wave alternatives – and crucially it is imported.

The LNG market remains largely at the mercy of the highest bidder, and even long-term contracts are subject to political developments. Nothing can be taken for granted, even in politically safe areas. The security of the UK's energy supply cannot

simply be left to market forces. Renewables are required, although they do create their own environmental and logistical problems, and cannot be expected to meet all of the UK's energy needs. A balanced portfolio is needed, including nuclear power.

The most significant thing to emerge from the Energy Review was that nuclear building is back on the agenda. There is an obvious need for nuclear generation, given that it produces no carbon emissions. Experts predict that known uranium reserves would meet world demand for at least 70 years, and are predominantly located in friendly countries. Replacing the entire nuclear infrastructure would add only 10% to the UK's existing nuclear waste stock.

A stable nuclear investment environment is required. The UK tends to do things differently; only in the UK has a government sought to develop a nuclear market with such a focus on the private sector; elsewhere governments are behind nuclear markets. However, the market cannot always deliver optimal results for the UK, when non-commercial public policy issues are involved.

Even if agreement were reached with the EU on a framework for beyond 2012, it would be likely to be at the last minute. The UK's energy security cannot be based on such an unstable plan; a contingency plan is needed. With pre-licensing, the UK could learn from the French and US examples on nuclear building. Certain activities cannot be left to the private sector, and nuclear waste disposal is one such issue; Government has to take responsibility for this role.

Amidst huge global competition for nuclear skills, the required skills cannot be expected to flow to the UK as soon as it is ready. Market forces will drive up salaries globally and skilled engineers cannot be produced overnight. Government must partner with industry and universities to promote the required skills.

KPMG/YouGov surveys have found that public opinion is moving towards the nuclear option. The gap between those advocating an increase in nuclear capacity, and those of the opposing view, is closing, and the number of people undecided is increasing. But, crucially, all the UK's political parties require real political leadership.

## Consumers: Energy Purchasing Strategic Challenges

### **Robert Galle, Manager, UK Energy Supplies, Corus**

The global steel market is cyclical; it is the most energy-intensive consumer in Europe, using more than 10 kilowatt hours of electricity and 400 million therms of natural gas per year. Corus is facing increasing competition in its home markets from competitors with lower production costs. 70% of global steel production is untouched by the Kyoto carbon trading requirements.

Security of energy supplies in the UK is questionable and prices are neither internationally competitive nor predictable, and have very high peaks. In electricity, the UK has one of the tightest demand-supply balances in the EU, although the generation gap is wider in the EU. To improve the energy-supply environment, it is necessary to create a level playing field, and timely investment is needed. The UK has to secure the long-term gas supply to Europe and the UK, with sufficient gas storage infrastructure. Most importantly, a long-term and efficient global emissions trading system is needed.

There is a need for the EU to integrate national energy markets. Competition rules have to be enforced, transparency must be increased, and network unbundling has to occur in every member state. Given the 'liberalised' energy markets within the EU, it will take many years to create a single energy market in Europe. The UK market needs to level the playing field in the meantime. Solving the electricity generation gap requires urgent attention; by 2030 the European gap will be 500 gigawatts. It is doubtful whether the market can meet this challenge.

Industry believes urgent action is needed to facilitate new builds in the UK, with a diversified fuel package. Market risk could be shared through long-term, cost-plus contracts, but government also needs to facilitate new generation capacity, including measures on planning, certainty on emissions rights, and the desired fuel mix. Some EU governments are more active than the British Government in facilitating new builds, with Germany guaranteeing the free allocation of emissions rights on new builds for 14 years.

Steel manufacturers need to become as energy efficient as possible, applying all available technologies. The long-term goal is to reduce CO<sub>2</sub> intensity by 50% by 2050. However, the EU ETS does not favour the most energy efficient producers; it distorts global competition and allows generating companies to make windfall profits. Moreover, auctioning emissions rights would disadvantage companies unable to pass on costs at the global level. The EU ETS should reward the most energy efficient producers by allocating emissions rights per product unit actually produced, and rights should be global.

## Discussion

### Policy priorities

One positive policy change would be for all political parties should work together, recognising that the energy industry needs to work to very long-term horizons. Well before 2012, the market needs to know what will happen thereafter. Carbon pricing within a clear framework is necessary, and there is a need for understandable, predictable prices.

### UK Government involvement

Some feel that the UK Government cannot do any more than it is, politically, but the Government's policy framework is not sufficiently clear at present. Industry has the right to expect the UK Government to use its power around the world to assist the energy industry. In France, a consortium of large energy users works together to fund new energy units.

### Russia and political motivations

Russia has been a very reliable supplier of gas to the UK over the past 30 years, and Russia was less at fault than the Ukraine for their disagreement, although Russia did handle it clumsily. 60% of Gazprom's income comes from Europe, and it needs that income. Whilst it would be politically dangerous for any government to renationalise energy industries, China has great economic and political power, and Russia is using its political power in the global markets.

Energy importers should be reassured that other countries such as Libya, Algeria and Nigeria also need the income from energy sales. However, Russian energy policy is

driven by political objectives, so there is some risk, and the UK should diversify as much as possible to reduce this risk.

## Key Questions of Financing and Incentive – 2007 Expectations and Needs

### Opening Remarks

#### **John Osborne, Senior Partner, Clifford Chance**

The Energy Review sought to offer greater clarity, but the implementation is now the important aspect. Thus far, good intentions have not prevented consenting delays in wind and CCS. All the solutions are intended to be market-based solutions, with relatively little Government implementation in the UK.

### Has the Landscape Changed?

#### **Paul Spence, Head of Strategy, British Energy**

British Energy believes that a balanced energy mix is needed in the UK; nuclear is not the sole answer. The nuclear industry accounts for approximately 20% of Britain's energy needs, thereby avoiding the production of approximately 40 million tonnes of carbon. The nuclear has around 5,000 skilled engineers, and land assets suitable for new builds. Nuclear is a very low carbon generator by comparison even with renewables.

Nuclear can make a significant contribution to price stability, having a higher upfront cost but a more stable and predictable long-term production cost. Nuclear also offers security of supply, its baseload fuel being storable and less exposed to political risk. There is a strong case for nuclear being part of the energy mix.

16% of world electricity is generated from nuclear power, with more than 440 plants globally and 28 under construction. Performance has been improved dramatically since the 1970s, with higher loads and capacity upgrades. Most EU members are users of nuclear; France is very heavily reliant and Finland is constructing the first new-build nuclear station in Western Europe for a long time. France will start building a new nuclear station in 2007, and the US has 30 applications to license sites, and in China plants are already under construction and many more are planned. Russia is also looking to increase its nuclear capacity.

Attitudes are shifting and there has been a doubling of public support for nuclear. The private sector's decision on whether to invest in new projects will be based on: the size and timing of the opportunity, the achievability of the opportunity, and whether or not it can be financed. Other key factors include the proportion of the energy gap that nuclear could fill, and the degree of standardisation in design and planning for nuclear. An achievable route through planning is critical, being financeable without problems, is a key prerequisite for investment. Given the right framework, the incentives to invest in nuclear are clear.

The Energy Review report confirmed the nuclear industry's list of key factors. Are the policy and the needs statement enduring? Will the Government's framework

allow the industry to implement the necessary structure in time? There must proper engagement throughout the implementation process, to prevent progress becoming delayed.

## Planning, Consents and Energy Law

### **Angus Evers, Associate Environment and Planning Group, Norton Rose**

The Energy Review underlines how important planning is to the UK energy market. According to Ernst & Young, the UK has fallen from first to fourth position on attractiveness for investment in renewables, due to planning concerns.

The Planning and Compulsory Purchase Bill explains that the Government wants to speed up the planning system and improve the predictability of decisions and the handling of major projects. The Energy Review's emphasis on planning reform is a tacit acknowledgement of the failure of the 2004 reforms. Chapter seven of the Review says the UK planning needs to combine national and local interests, with timely decisions, and more certainty and public participation.

The lack of time limits on consenting processes undermines investment planning and produces higher costs. The Town and Country Planning Act sets statutory timeframes. The Planning Inspectorate has non-statutory targets for commencing public inquiries and for delivering its final report ministers, but the minister does not have to make a decision within any specific timeframe. However, some industries have to deal with longer timeframes than the energy industry.

The Government has rightly identified that national officers struggle to balance national benefit against local views, without clear policy guidance. The Government has said it wants radical, joined-up action on infrastructure planning. The Energy Review will link with two parallel reviews: the Treasury is sponsoring the Barker Review on town planning and UK competitiveness globally, and the Eddington Study on the planning impact on future transport infrastructure. The Heathrow Terminal Five Review lasted for a record 46 months.

The Government proposes a three-pronged approach involving: a national policy strategy, measures to streamline planning inquiries, and mechanisms to prevent decision-making delays. On the former, the Government wants to see a Statement of Need for renewables, and another for additional gas supply infrastructure. More renewable projects need to be promoted. The statements of need form a material consideration in planning decisions, so have to be taken into account during the process. Regional spatial strategies and local development frameworks reflect the national need for new energy infrastructure, being considered within the decision-making process.

Clearer guidance is also needed regarding general energy policy and the mix. Planning inquiries under the Electricity Act will occur, being brought in line with the Town and Country Planning Act. Other suggested measures include appointing high-powered judges as senior planning inspectors, and making greater use of pre-inquiry hearings and written procedures during inquiries.

The Energy Review does not address offshore issues significantly, although the Marine Bill proposes a new consenting regime for gas storage, LNG unloading and CCS.

The Energy Review's proposed changes to the consenting regimes are perhaps premature. Much of the proposed legislation will be produced 'when time permits', offering little certainty. There is great debate about whether planning inquiries will produce more or less opposition to projects; it may be that people spend less time in inquiries but more time in court. National planning authorities and local residents are yet to be convinced of the national benefits of proposed energy projects. Only a small proportion of proposed projects are subject to public inquiry, and the proposals will not affect applications outside public inquiries.

More staff, training and money have to be directed towards decision makers in Central Government and planning authorities. The planning gains supplement effectively is a development land tax, proving very unpopular and likely to effect adversely proposed energy projects. The planning system is not broken but it needs the political will and resources to make it work properly.

## Trends and Opportunities in the Environmental Market

### **Bruce Jenkyn-Jones, Investments Director, Impax Asset Management**

The clean energy sector currently is quite well supported. Impax invests significantly in renewables, which is a major growth area for the future. However, there are only around 400 companies worldwide to invest in on the quoted markets, with a total market capitalisation slightly less than BP. However, there is great growth potential in renewables.

There is a great deal of change and new opportunities are being created. There are renewables and energy efficiency; in water there is desalination and recycling; and there is value to be extracted from waste. Market liberalisation and privatisation create opportunities for new entrants, and as environmental policy tightens the companies operating more cleanly will benefit. There are very strong drivers for investing in new energy technologies, and it is estimated that £240 billion could be spent on capital equipment, with potential fuels investment being far greater.

Over the past 18 months, Impax has quadrupled its funds under management. The energy sector has substantially outperformed stock markets as a whole over the past three years. The Impax investment fund has outperformed the energy sector.

Regarding particularly hot investments, the share prices of Solarworld, an integrated German solar producer, has risen from €2 to €80, and the solar market has grown by 30% per year in recent years, supported by huge subsidies. Solar is heavily subsidised in Spain, California and Germany, thereby bringing payback periods down to five to six years. EBIT margins in solar are currently mid-20%, although silicone shortages have squeezed margins slightly. Prices have risen in Germany, placing pressure on demand. \$5.6 billion was raised in equity markets during 2005/06, which will produce higher supply in imminent years. Top-line growth might continue but margins might be squeezed, so solar is not quite such a good investment area.

Gamesa, a Spanish wind company, benefits from clear, long-term policies to encourage renewables, thereby producing higher margins and a larger market. There are 25 wind markets worldwide, all with supportive structures, and costs have fallen amidst strong growth. Wind turbines are sold out until 2008 and margins are increasing, so the wind sector is a good investment area, with premiums being paid

on assets. However, China and India are increasing the competition, and the value chain has to be well understood.

Biofuels will really take off in 2007, with strong growth potential in the US. There are legislative drivers in the UK and the United States; anyone with the funds to build a bioethanol plant can do so. Visibility on prices and resources is low, but there will be huge growth in 2007 for the right companies, and top-line growth will be strong.

Energy efficiency is more stable and less dependent on regulation. Kingspan, an Irish insulation company, has seen its rating rise from five times to 20 times earnings, and its share price has risen by nine times over the past four years.

Going forward, Impax is looking at advanced and automated meter reading, and the power and electronics insulation markets. The principal 'blue sky' areas not yet profitable include fuel cells, wave and tidal. Billions of dollars have been spent to make fuel cells more economically viable, and fuel cells represent a very exciting area for the future. The level of investment has reduced costs in this area and, looking to 2007, companies such as Wal-Mart will start to use fuel cells in their vehicles, catalysing the market.

There has been great investment in clean technologies in 2006, but continuing government support is so important. The single most significant boost the environmentally-friendly energy sector could receive would be some form of US support for climate change policies.

## Discussion

### Investment returns

The companies in Impax's portfolio are expected to grow earnings at 20-25% per annum in 2006/07. The fund has returned 20% per year for the past three years and the same is hoped for going forward.

### Market forces

High oil prices have strongly supported renewables markets, which in turn have contributed to silicone prices rising from \$15 to \$75 per tonne. Sadly, countries which really need renewables, such as India, cannot benefit fully from some renewable technologies due to silicone shortages. Wind generation costs have risen as steel prices have increased; wind-power economies have largely been realised already.

## Panel and Plenary: Fallout from the Energy Review and Delivery Expectations of UK Policy

### David Goodman, National Head, Planning and Consents, Hammonds

The delivery of the UK's energy infrastructure will depend heavily on the planning and consents framework. Some provisions are in place and need to be exploited. Central Government and industry have important responsibilities in developing policy, facilitating public debate and ensuring the planning system works. The

Renewable and the Gas Infrastructure statements of need provided strong signals, but there is a disconnect between public expectations and definite plans. The last planning inquiry for Yorkshire's electricity proposals was in 1995 and a Government decision was made only in 1998. That situation cannot be repeated.

Local authorities need to be accountable for their decisions, in delivering national policy. The national grid gas pipeline has had two pressure-reduction applications refused and some local members have explicitly placed local welfare ahead of national benefit. Long delays are inherent in the system.

Public involvement in planning should be embraced, and the Public Participation Directive to be introduced in the UK addresses that need. The planning process needs to be streamlined. Industry cannot expect all proposed schemes to be given new planning permission, but should not automatically expect public opposition to proposals. There is a huge onus on Government and industry to develop the market.

### **Jeremy Nicholson, Director, Energy Intensive Users Group**

Gas security is a priority: last winter a supply crisis was prevented merely 24 hours prior to the market breaking down. Users groups have made proposals including reducing the non-market barriers to investment in all types of renewables. The initiatives on planning and licenses are welcome. Action was also called for on gas storage, and Government could improve incentives through the framework for international gas supplies. There should be explicit support for nuclear, which is needed in conjunction with other low-carbon technologies.

The subsidies available under the Renewables Obligation have been criticised, with the National Audit Office reporting that they will cost consumers £1 billion per year by 2010. The Government should not be picking winners. There is a case for public support on research and development, but sustainable industries do not need subsidies to continue operating. That £1 billion per year spent on energy efficiency would fund clean infrastructure and energy efficiency, delivering significant savings for consumers.

When will the Energy Review deliver? Government knows it is urgent. Will the Opposition support it? That is a crucial issue for 10-15-year investment plans. Charles Hendry's comments on that were welcome. Third, carbon pricing is not sufficiently clear at present. It is vital to get this right. 100,000 manufacturing jobs have been lost in the last decade and, for consumers, action on the energy white paper initiatives cannot come soon enough.

### **Prof. Martin Fry, Vice President, Energy Institute**

A key message is that a balance is needed. The first priority is to conserve if energy not required, and to supply where possible through renewables. New nuclear plants should be built as little as possible, and fossil fuels are the last resort. There is enormous potential for energy efficiency; businesses need to be given the incentives to view energy efficiency as a priority. The public at large is not sufficiently engaged, and existing technologies could be more widely used with no negative impact. It is

extraordinary that lifecycle costing is not conducted; 60-watt light bulbs simply would not sell if consumers were aware of such calculations.

The EU Buildings Directive has impacted building regulations significantly from this year, but the turnover of buildings is so low that the benefits will not be seen for many years. Many buildings do not perform as they should, for various reasons. Every building should be required to have a performance rating; the public sector is coming under focus and its buildings will have to display performance ratings. The Energy Services Directive being introduced in 2008 aims to deliver major savings across all sectors.

The utilities have to make many changes to better support the public and micro-generation, which is currently incredibly complicated to manage. There are huge opportunities for meter manufacturers and energy systems companies to supply more effective meters.

Fuel cells will come to fruition but they, alongside clean coal, should not be assumed to be fully successful by 2020; a great deal of work is needed to make them efficient. It is a similar story with hydrogen, but there are great opportunities and change is absolutely necessary.

### **Political Leadership**

Although Malcolm Wicks has done a good job, there is a growing consensus that a leadership deficit with energy exists at Cabinet level. The Energy Minister formerly had a far broader remit and energy has been restructured, but not to a significant enough degree.

Defra has a great responsibility on energy, but it is unclear who pulls the strings on energy policy within Government. There may not be justification for a Secretary of State position, but if it remains within the DTI it needs a greater emphasis and more authority. The Cabinet Office strategic assessments team has recently tasked a team member to assess Britain's energy security. This is a low priority for the Ministry of Defence, and the Foreign and Commonwealth Office's matrix remains hidden. As such, the four units responsible for energy are not pulling together. The DTI is so keen to consult on energy issues because it does not have the historical knowledge of how to implement the framework. However, talented people are involved, but more collaborative efforts are needed.

It is concerning that, contrary to the approach taken by many other countries, Britain does not have an energy plan. Government says it wants the market to develop a solution, but unless the Government clearly states its policies on energy technologies it will act as a disincentive to the required investment. Government leadership is required and there must be a single point of accountability within Government, because it is currently missing opportunities.

Japan is far ahead of the rest of the world on installed solar capacity. The framework within which the market operates is entirely the Government's responsibility. Downing Street became involved in energy issues last winter, when it became clear that the DTI was not in control of supply; the situation was not sufficiently transparent.