AN ENERGY POLICY FOR BRITAIN: CONSERVATIVE THINKING

Charles Hendry MP
Shadow Minister for Energy

The current liberalised market was the brainchild of Nigel Lawson who, in 1982, gave a speech in which he said: "energy is a traded good…the job of government is to remove distortions in the market place". The competitive market ensured diverse and sustainable supplies at competitive prices for decades.

But what was good for 1982 certainly no longer applies today.

For much of the last 25 years the UK has been awash with its own oil and gas supplies. It is easy to have a hands-off policy when you know the lights will stay on, but when you have to appeal to corporate boards in France and Germany, persuading them that Britain is the right place to invest, it can't just be left to the market.

In addition, it is clear the current framework has been assiduous at sweating assets and developing CCGT plants. We are now in a position where, in the words of Wulf Bernotat of E.On: "You have old nuclear plants, old coal, expensive gas, a need to invest in renewables to reach unrealistic targets, and a slow [planning] process. Doesn't that sound like a problem to you?"

And now, to the twin old challenges of affordable and secure supplies, we must add the need for low carbon and renewable energy, as tackling climate change moves to centre stage. The challenge for Government now is to ensure diversity of supply, a reduction in carbon emissions and affordability for customers.

The current market structure will not deliver all of these aims. It is for this reason that there must now be greater Government engagement in energy policy to remove all barriers to investment and achieve our goals – a theme which will be developed in more detail in a Conservative energy policy paper to be published in the autumn.

An important aspect of retaining diversity of supply and reducing carbon emissions is to develop carbon capture and storage. We have already said there should be no new coal without CCS attached. To this end we have proposed at least three large-scale demonstration projects, each of the order of 600MW, using either pre-combustion, post-combustion or oxy-fuel combustion technology to be built using the receipts from EU ETS certificates. Government will be required to invest significant amounts in the infrastructure and so all of the additional costs associated with the carbon capture and storage technology will be covered by the Government in these demo projects. There is also a natural role for Government in installing oversized pipelines from plants in clusters and then having generators pay for access to that grid.

We welcome the degree to which the Government has moved to accept our policies which give a new life to coal as part of the UK's energy mix. We were disappointed however that the Government did not take this opportunity to match our pledge for an Emissions Performance Standard of around 500g of CO_2 per kwh to begin with and then gradually decreasing over time.

In order to ensure that funding is available for this project and others, the carbon price must remain predictable and relatively strong. The Climate Change Levy as it currently stands is a straight tax on business. We have proposed reforming it so as to make it a genuine tax on carbon which we envisage will become the floor price for carbon. This must be implemented carefully and at the right level so as not to adversely affect the competitiveness of British business.

Despite demand destruction resulting from the recession, it is clear that we are facing an energy gap. The Large Combustion Plant Directive means that 8GW of coal-fired plant must come offline by the end of 2015. In reality these power stations are running down their 20,000 remaining hours at a rate which means they could start to come offline as early as 2013. This in turn means that they are now making decisions about whether to replace parts and undertaking selective maintenance so that they do not waste money on plant which will be coming out of service in a few years' time. It is clear to us too that the Directive will have a particular impact on the UK, because we have an ageing coal-fleet which would cost more to 'opt in'.

Without energy security we won't have affordable energy or meet our climate change

objectives. Energy security is therefore a priority and one of our major concerns is our growing reliance on gas. Under the current market structure the UK is moving towards 60-70% of its electricity being generated from gas, as old coal and nuclear plants come offline and are replaced by gas plants only. Around 80% of this gas will need to be imported as our indigenous supplies on the UK continental shelf dwindle.

Most countries which rely on imported gas have invested in gas storage facilities to prevent any shock ruptures to supply or price spikes. Indeed, in the recent difficulties between Russia and Ukraine, Germany was able to meet its needs and export to neighbouring countries experiencing difficulties because of the investment it has made in gas storage. But whereas France and Germany have around 100 days' worth of storage capacity, the UK has just 14. Labour's failure to secure investment in new storage has put our energy security sorely at risk.

The barriers to development are huge and many of the projects currently planned are simply aspirational or have already been rejected by the Secretary of State. In order to push on with gas storage we need a body which will look at the obstacles and remove them, in much the same way the Office for Nuclear Development has done in nuclear. The OND has been very effective in pushing away the barriers and now the UK looks to be the most exciting place in the world for new nuclear.

The gas inter-connectors are also key to energy security. In January, Britain imported 26mcm of gas per day through one pipeline, but at the same time, the Bacton inter-connector was pumping out 25mcm per day. Whilst this is a shining example of how well the market is working, it is clearly less good for our energy security. The UK's gas storage had decreased to just a few days' worth in January during the Ukraine-Russia dispute. As another example of where a greater level of engagement in the market is needed, it has been suggested that those burning the gas could be required to keep a minimum level of gas during the winter months or whether there should be a trigger point at which we cease to export any gas through the pipelines.

The issue of planning is clearly of enormous importance to the huge infrastructure projects we have to undertake in the energy sector in the coming years. Whilst we agree with the Government that applications need to be processed more swiftly, we believe that they have gone too far away from the democratic legitimacy brought by the final decision being made by an elected representative. To this end we have proposed that the Infrastructure Planning Commission be abolished and its back-office capacity be subsumed by the Planning Inspectorate. The Planning Inspectorate will then make their recommendations to the Secretary of State rather than have a final decision made by a quango with no recourse to public opinion. One of the concerns often made is that recommendations are often left on the Minister's desk for several months and we are seized of the need to keep that period short. There does not need to be a distinction between democratic accountability and prompt decisions.

The uncertainty which arises from a new procedure will also be unwelcome in the industry and so our commitment is to put in place transitional arrangements which cause no delays or uncertainties. And there will be no return to the current section 36 approval process once we are in the process of abolishing the IPC.

To ensure our security of supply we will require energy from a diversity of sources. Nuclear will be part of that mix so long as it is economically viable and does not require subsidy. We recognise that this stability of public policy is crucial to investor confidence and we will do nothing to upset it. Adequate resources for the Nuclear Installations Inspectorate must be maintained to keep the roadmap spelt out by the Office for Nuclear Development on track for completion in 2018.

There is scope for extending the life of some of our non-Magnox nuclear plants but this should be seen as a bonus rather than relied upon to provide our energy security: if a fault develops, it could cause a shut-down of all of the plants leaving us potentially short of supply at a critical moment.

On renewables, it is clear that the targets set for 2020 are extremely ambitious, all the more so because of the Government's lack of a roadmap. If we are to achieve 15% of our energy from renewables, it is patently in our interest that we have a roadmap with dates setting out exactly what we need to achieve and by when. Without a plan, a target means little.

The Government has clearly focused on wind to the detriment of all other renewables because it sees it as the only technology which can help it to achieve its arbitrary targets. We should avoid picking technologies which will help us to achieve a political solution when better and more effective technologies might provide a better technical solution.

The UK has 11,000 miles of coastline and already the world's first tidal power turbine in Strangford Lough in County Down. We have a Marine Renewables Deployment Fund worth £50m of which only a portion of the £8m set aside for environmental work has been used and none of the £42m in the deployment of marine technologies. If the terms of the fund aren't working, they need to be changed. Likewise the £50m fund for British renewables companies set aside by the Export Credit Guarantee Fund to underwrite the debt during export which remains unused because it is unable to give terms more favourable than a commercial bank. We should be removing obstacles to marine development and the long anticipated but still unseen Office for Renewable Energy Development should be hurried along.

In January David Cameron launched the *Low Carbon Economy* paper in which we set out proposals for a set of Marine Energy Parks similar to the European Marine Energy Centre in Orkney. It is anticipated that local authorities, businesses and educational institutions clustered by the coast will come together to build Marine Energy Parks to develop technologies here in this country. It is perverse that British companies such as Pelamis have found the support structure in the UK so unhelpful that they have instead taken their technology to Portugal where the regime is more benign.

We want to make Britain the most exciting place to do business in the energy world and with these policies we hope to do so.

CCS – MAKING IT WORK

Dr Andy Read
Clean Coal Business Development Manager, E.ON UK

GAME OVER WITHOUT CCS

The question I was given as the basis of my presentation to the Committee was "CCS – will it work?" I would argue that it is not a question of whether carbon capture and storage (CCS) will work – I am in no doubt about the technology – instead we need to focus on *how* we make it work, because when it comes to tackling climate change, no CCS means it's game over.

It is important to recognise that the UK produces only about 2% of global emissions – China and the USA are the world's largest emitters and China alone is building 70GW of coal-generated power per year. That is the equivalent of the UK's entire capacity. The Royal Society, Sir Nicholas Stern and the Climate Change Committee have all said that CCS is essential on a global basis because coal will continue to be burned.

In the UK we face our own set of challenges – one third of our current generation capacity is set to close by 2020, the Climate Change Committee sees electricity being largely decarbonised by 2030 and the EU has committed to producing 20% of its energy from renewable sources by 2020.

However, there is no silver bullet. We have to ensure we have a diverse energy supply that delivers reliable, low-carbon power. Wind is a key source of renewable energy but studies suggest that as much as 90% back-up generation capacity will be required for when the wind doesn't blow. Nuclear is low-carbon and secure but inflexible. This means we also need fossil plant to provide flexible, back-up base load power – this means gas and coal and it has to mean CCS.

The Secretary of State, Ed Miliband, has said there is "no alternative to CCS if we are serious about fighting climate change and retaining a diverse mix of energy sources for our economy" and the Conservative Party has also recognised the importance of CCS. What we now need to do is take the technology forward on a larger scale.

THE TECHNOLOGY IS PROVEN

The capture technology is already working on a smaller scale. In Japan there are industrial CCS plants operating commercially on a fifth of the scale proposed for the first UK demonstration. The only reason it hasn't been scaled up is because there is currently no commercial driver. Pipelines are already being used for the transportation of carbon, most notably in the United States. It is a myth to say the technology isn't proven.

There are also several myths around how secure the store is – it is sometimes claimed that the CO_2 might leak significantly. In fact the CO_2 captured will be sequestered (locked away) permanently. The storage sites identified will be geologically sound and many will have held gas or oil for millions of years. Over time, the CO_2 will dissolve in water already trapped in the rocks. This makes it heavier than water without CO_2, so unlike natural gas and oil, the buoyancy that drives leakage will gradually disappear. CO_2 also slowly reacts with some rocks to create a carbonate (solid). Where this happens, leakage would become impossible. We have identified a number of suitable North Sea CO_2 sinks for storage including the Hewett gas field, where we are already working with the current owners

E.ON AND CCS

It is a common misconception that we are seeking to expand coal in the UK as we are in fact closing two of our three coal-fired power stations, and only seek to build one new plant. The existing coal-fired power station at Kingsnorth in Kent is due to close by the end of 2015 and, as a replacement, we have proposed a new power station that would be 20% more efficient and would meet all the modern standards on emissions.

If the new Kingsnorth power station was built it would enable CCS in the UK, either as demonstration or as commercial roll-out. It's important to be clear – E.ON would expect to fit full CCS to a new power station at Kingsnorth within the first decade of its operation.

. . . Pipelines are already being used for the transportation of carbon, most notably in the United States. . .

OUR VISION FOR A THAMES CCS CLUSTER

Our vision for the Kingsnorth project is for it to act as a gateway to CCS development in the UK, enabling the development of a 'CCS Cluster' for the south east of England. We believe the south east is the right location for the first such cluster in the UK. London and the south east have the highest level of energy demand in the UK – London and the Thames demand equals that of Yorkshire and Humber and Scotland combined. We expect this to continue, particularly as we look to the electrification of transport. It would also make a significant contribution to the economic development of the area.

BARRIERS TO INVESTMENT REMAIN

However, barriers to investment remain and we will not build Kingsnorth unless we have a business case. Utilities need secure funding in order to develop large scale CCS. The carbon price is too low and too uncertain at the moment to support investment without further support – particularly as the early large-scale CCS demonstrations will have higher costs. In turn we believe mandating CCS on coal without financial support would simply drive a switch to gas – there would be no incentive to invest in this new technology.

The need for incentives has been recognised by the Government, the Conservatives and the European Union. The UK Government is running a CCS demonstration competition and is proposing further demonstrations before 2020, which we welcome. Our Kingsnorth project is entered into the existing competition for a 300MW post-combustion demonstration. The main benefit of post-combustion technology is that it can be retrofitted to existing power stations. Although the capture element is likely to be more expensive for post-combustion, the base power station is cheaper so it is comparable economically to pre-combustion technology such as integrated gasification combined cycle (IGCC) plants.

The EU will launch its 'flagship' demonstration programme next year and an €180M grant as part of the European Economic Recovery Programme is available to one UK project, to be allocated at the end of this year. We have also entered this competition and have submitted plans to procure an oversized pipeline for the transportation of CO_2 which we believe is the right long term solution. It would promote the development of a Thames Cluster, effectively 'future proofing' a CCS transportation system around the Thames and Medway estuaries (ie it avoids the need to fit new pipelines for future projects). At 36 inches (diameter) the pipeline would have the capacity to transport 24m tonnes of captured CO_2 to storage sites under the North Sea, equivalent to all the carbon captured from 3GW of coal and 4GW of gas-fired plant. It would mean the development of infrastructure that would be highly attractive to other industries and would also have a significant impact on carbon emissions, as well as potentially acting as an example for the rest of the world on low carbon energy.

The Conservative Party is also committed to supporting CCS projects in the UK and we welcome the broad agreement on this between the main political parties.

WE NEED A BUSINESS CASE BEFORE WE CAN INVEST

However, utilities still need a business case for new coal with CCS. Too much risk will deter investment. This concern around investment is not aided by the other uncertainties in the energy market. Market reform may be needed but uncertainty around the future structure may also delay investment.

The UK has a great opportunity to lead the way on CCS. If it went ahead we believe a new power station at Kingsnorth with CCS would be a fantastic project. It would provide global leadership on CCS, with demonstration and later full CCS roll-out on a commercial, modern coal plant. It would help to support security of supply and fuel diversity for the UK and would promote the development of a Thames CCS Cluster to enable the de-carbonisation of power in the South East of England.

DURING DISCUSSION THE FOLLOWING POINTS WERE RAISED:

Carbon price is not the only driver to the delivery of Carbon Capture and Storage (CCS) as the application of different technologies will vary in cost although a basic cost of £30/tonne for carbon may be about right. In the case of retrofitting, this will not always apply and in some cases will not act as an effective driver. Direct Government support is more important than the actual price since in the UK the coal burning power generation facilities are much older than in the rest of the EU where retrofitting may be more applicable, as those facilities will have a much longer overall lifespan than those in the UK. Prototype CCS demonstration power plants are also more expensive to build than subsequent copies

Powerfuel plc owns and operates the Hatfield Colliery in South Yorkshire through its subsidiary, Powerfuel Mining Ltd. The Hatfield colliery has access to approximately 100 million tonnes of British coal. Powerfuel is probably best known, however, for its plans to build and operate the first commercial, large scale, coal fired power station with Carbon Capture and Storage (CCS) in Europe through another subsidiary, Powerfuel Power Limited. The Hatfield IGCC (Integrated Gasification Combined Cycle) project will be situated adjacent to the colliery, will have a gross output of 900MW and will capture around 90% of the carbon produced. The Hatfield IGCC project, which uses an innovative 21st century "pre-combustion" technology for carbon capture, was however excluded from the UK Government competition to build a demonstration CCS plant, which was launched in November 2007. The competition, which was designed to demonstrate internationally the UK lead in this technology was very poorly specified as it was restricted exclusively to "post-combustion" 20thC technology.

However, on 20th March 2009 the EU Presidency approved €1.05 billion of financing for certain specified CCS projects as part of the European Economic Recovery Plan. It is the intention of the EU to make this financing available in 2009 and 2010 and the financing will be executed following the order of the projects' maturity. The €1.05 billion includes €180 million for four named UK based projects; the three remaining projects in the UK's CCS demonstration competition and the Hatfield IGCC project.

Other countries considered potential beneficiaries of UK technological development, such as China, for example (who sent a high level delegation to the UK which was hosted by the P&SC to investigate the application of CCS in the UK) have recently overtaken the UK Government in the development of CCS technology. Both pre-combustion and post-combustion technologies may operate effectively if there is a funding stream available to support them, without which nothing can happen. The urgent priority now is much closer to home to ensure the necessary work is undertaken as soon as possible to provide energy security in the short term due to the imminent closure of much of the UKs existing and outdated coal burning and nuclear power generation facilities, unless it is the Government's intention to become increasingly dependent on Russia for essential power supplies in the short term.