

# The Foundation for Science and Technology

Talk Transcript

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## Energy policy: selecting the right options for future electricity supply

John Hayes MP for South Holland and The Deepings,  
Minister of State for Energy, Department of Energy and Climate Change

Well thank you so much, Mr Chairman. I am delighted to be speaking at this event – it is an important opportunity. The Foundation for Science and Technology has, at its very core, an objective that is fundamental to our society – the aim of stimulating discussion and debate, building new thinking, exchanging and generating fresh ideas. The great Conservative philosopher Michael Oakeshott wrote: “As civilised human beings, we are the inheritors, neither of an inquiry about ourselves and the world, nor of an accumulating body of information, but of a conversation, begun in the primeval forests and extended and made more articulate in the course of centuries.” (Michael Joseph Oakeshott, *Rationalism in Politics and Other Essays*)

I trust we will have plenty of opportunity this evening, on that basis, to converse.

To facilitate this conversation I want to say a few words about the Government’s objective in the energy sector. You have kindly heralded that by your reference, Chairman, to the pivotal character of the Energy Bill and the Government’s desire to develop a new paradigm, a new strategy which is aimed at developing the right energy mix to match supply with demand. That necessitates building a new generation of power plants, the infrastructure necessary to provide the heat and light we need.

Because the future mix of electricity generation must be determined by the objectives we seek to achieve – and these aims are, in turn, defined by the challenges the market faces – I intend to, in this brief speech, outline those challenges, define the objectives of energy policy and then to turn to the question of what electricity mix will best deliver these objectives.

First among the challenges, around 20GW or a fifth of our existing plants is set to close over the coming decade. At the same time demand for electricity is set to rise as major sectors such as transport and heat are electrified. One scenario suggests that demand may double by 2050, but these things are immensely difficult to predict – the character of technology, the changing patterns of demand make such modelling by its nature imperfect. What is clear is that there could be a real risk of tight capacity margins in the future compared to the relatively ample supply of recent times. So our first objective is to ensure security of supply – making sure that the reliable provision of electricity which the public and businesses take for granted continues. It is fundamental to our objectives, in terms of encouraging confidence by developing policy clarity, that we should bring about a circumstance where investors are sure what they are investing in is right for the future.

Secondly, and of equal importance, we must do so at the lowest cost, achieving value for money for the taxpayer and for the consumer. Energy prices are as salient as ever – particularly highlighted, I would say, by the economic circumstance we are in where energy costs are a threat to fragile growth and where

households are watching their bills with an increased vigilance due to the circumstance in which they find themselves.

Our final challenge and objective is to do so in a way that builds a cleaner energy future of Britain and the world – and indeed we have set quite a target to cut emissions, as you know. This includes a statutory target to reduce greenhouse gas emissions by at least 80 per cent by 2050.

Diversity of supply is fundamental in delivering that secure, affordable, low-carbon energy sector which those objectives mean. Diversity delivers security, reducing our reliance on any one technology, lessening our exposure to international fuel prices. It helps keep bills down as generators compete against one another on price. It will reduce emissions as low-carbon technology is playing an increasing role in the mix.

As the newly re-elected President Obama – and you can tell this speech has all the currency that that suggests – recently said, if you asked me to choose between gas, renewables and nuclear power the answer is simple, ‘we need all of the above’. The reforms which we will shortly be introducing in the Energy Bill do not support one specific technology, rather they are designed to encourage innovation and competition, and reward those generators that can provide clean, affordable, secure energy for consumers at the lowest price. For absolute clarity, let me say this, given the uncertainties that I mentioned a short while ago; given the difficulty of modelling over many decades, by far the best public policy option is for us to build a system which is sustainable by not being over-reliant on any single technology. It is of the greatest importance that we maintain our options to take account of that trend. The system that we envisage is as responsive to change as possible.

Let me set out the key aspects of our reformed electricity market which will bring about that diverse energy mix and the main generation technologies we expect to see as part of it. The essence of our approach is to deliver, as I said, more clarity, more certainty and more confidence, all of which, in turn are necessary to bring about investment. Long term contracts will provide clear, stable and predictable revenue streams for investors in low carbon electricity generation and we intend to legislate to introduce a capacity market to provide insurance against future blackouts – for example, when the wind doesn’t blow – with the aim of ensuring that consumers continue to benefit from reliable electricity supplies at an affordable cost. And a robust, transparent and credible institutional framework is crucial to the success of electricity market reform: it is important to provide investors with the confidence they need.

My Department published the Bill’s provisions, as the Chairman mentioned, in draft on the 22 May 2012, provided Parliament and industry with an opportunity to consider the details. Many of you will be familiar with this as indeed there has been a great deal of debate about that draft Bill with, in particular, the House’s Select Committee commenting on it in some detail. We published the Bill in draft form precisely because we recognised the importance of getting this right. We welcome this scrutiny and I very much welcome the Energy and Climate Change Select Committee’s remarks: indeed I was able to give evidence to them just a day or two ago.

I also emphasise that it is very significant that we build a cross-party consensus about long term plans about energy strategy. Inevitably governments in democratic politics change from time to time – even Ministers lives in any particular role are not indefinite – and to that end it is very important that investors recognise there will not be radical policy lurches. This is a bill for the future, not a bill for this Parliament.

My Department will be publishing a considered response to the Committee’s report, by the way, alongside the Bill very shortly. It is clear that all who have commented recognise that the UK needs a strong, diverse energy sector. The certainty which Energy Market Reform will provide will enable new developments in

energy development and Carbon Capture & Storage (CCS) to reach their potential. It is, I think, fair to say without being partisan (which on an occasion like this would be rather vulgar), that we might have taken these decisions rather earlier, but in the light of what I said about governments changing and Parliaments being unwilling to bind their successors, these are not easy decisions to take. Nevertheless, they must be taken in the national interest on the basis I've outlined.

### Renewable energy

Let me speak now about some of the kinds of generation that that energy mix will be comprised of. First, renewable energy. It has an important role to play in helping us to reach our initial reduction goals in achieving energy security. Last summer's Renewable Energy Roadmap put us on a path to meeting our targets while driving down the costs of renewables over time. We saw at least £12.7 billion in investment and 20,000 jobs announced in renewables in the UK between April 2011 and July 2012. Renewable energy will, of course, as it matures become cheaper. All new technologies in their early stages are costly, but we should expect, as scale grows, costs to fall.

### Nuclear energy

Now to nuclear: that also, of course, has a key role. Nuclear is central to our emissions ambitions, indeed to our emissions targets. There are currently nine nuclear power stations across the UK providing around 16 per cent of our electricity, but on the basis of current plans all but one will close by 2023. You will be familiar with the fact that most of our nuclear stock was built a considerable time ago, with only one power station being built in recent times, in 1985. New nuclear is cost competitive with other technologies and in the future is expected to be the lowest cost, large scale, low carbon source of electricity – so it can help keep bills down while, as I say, meeting our targets.

The industry has set out its plan to develop up to 16 GW of new nuclear power in the UK by 2025. Two consortia are currently taking forward plans to build new capacity, EDF and Centrica, and NuGen – made up as you know of GDF Suez and Iberdrola.

A third, Horizon, was sold to Hitachi last week and they have confirmed they intend to progress with plans to build two or three nuclear power plants at Wylfa on Anglesey and the same at Oldbury in Gloucestershire. This is a very exciting development. The successful sale of Horizon has, I think, been a significant shot in the arm for our plans – it is recognition of the fact that this consortium sees the prospects of developing nuclear power in the UK as real and attractive. Each new 3.2 GW twin reactor has the potential to provide reliable, baseload electricity to over 5.7 million homes per annum. We have taken steps to make the UK one of the most attractive places in Europe for new nuclear build and we remain firmly committed to ensuring things are right for investment in new nuclear plant.

I want nuclear power to be central to our ambitions. I believe that it can be and we will ensure, through the reforms we introduce, that the conditions are as attractive as possible for new nuclear investors.

### Carbon Capture & Storage

Carbon Capture & Storage, mentioned by the Chairman, is again an important part of our plans. The Government is firmly committed to the development and deployment of Carbon Capture & Storage technology. We are looking to achieve a new world-leading CCS industry, an industry that can compete with other low carbon sources to ensure security and diversity of our electricity supply. It can make our energy-intensive industries cleaner, bringing jobs and creating wealth for the UK – it is a field, as you know, where Britain has taken, will take and continues to take a significant lead. The CCS commercialisation programme – our new competition with £1 billion in capital funding, was open to a full range of projects – four bids have now gone forward to a short, intensive phase of negotiations. Decisions on which projects will get further

support will be taken early next year. We are also providing £125 million to support Research & Development. And contracts through our Electricity Market Reform provide the stable returns needed to drive investment and commercial scale CCS in the 2020s.

## Gas

But you will be no doubt wondering whether I also believe that gas is bound to play an important part in this mix and I am, by the way, unapologetic about that. I see gas as vital and flexible and an important source of generation. In the era where intermittent renewable and inflexible baseload nuclear generation will play the crucial roles I have described, we will need the flexibility of gas generation to ensure the supplier is able to meet demand.

Modern gas power stations are efficient and much cleaner than the stations that will go offline in the coming years. I was fortunate enough to be present at the new facility at Pembrokeshire which makes that point very clearly. Efficiency means that more power is produced from less fuel with less CO<sub>2</sub> emissions. Gas produces the lowest level of local pollutants and carbon emissions of any fossil fuel. Gas-fired generating plant is not only less polluting than other fossil fuel plant, it is also much less expensive to build and much more efficient in operation.

Gas currently provides a significant proportion of electricity generation – around 40 per cent in 2011. The Government sees unabated gas playing a significant role in electricity generation throughout the 2020s and increasingly as back-up or with CCS through the 2030s and 40s. In that context it is clear that shale gas offers a very exciting new potential but its exploitation must be on the basis of a regulatory framework sufficient to guarantee safety and assuage public fears. Further exploration is necessary – properly regulated to the highest standards.

The Government will further set out its views on the role of gas in the electricity market in the Gas Generation Strategy due to be published shortly. This strategy aims to attract investment in gas generation, ensure security of supply and make best use of our natural resources. It is vital that we do all we can to maximise economic recovery of our indigenous hydrocarbon reserves. UK policies, including licensing, have ensured that the exploitation of the UK Continental Shelf has been enormous success story – some 41 billion barrels of oil and gas produced so far, but up to 20 billion still remain.

As I was able to say when announcing a record number of licences a couple of weeks ago, the North Sea will remain important for decades to come. UK-produced oil and gas provide around half of the UK's primary energy needs and we need to maintain momentum to make sure that we continue to make the most of these assets. The industry is also a strong contributor to the economy, supporting around 350,000 jobs directly and indirectly, plus 100,000 more in the export of goods and services.

The North Sea still attracts global investment – we continue to maximise on new exploration and development. As I described, we launched a new offshore round this year, in May, and received the highest number of applications – 244 – since licensing began in 1964. I announced the first tranche of awards for 167 licences, confirming that this is one of the most successful rounds ever. We have in place a fiscal regime that encouraged investment and innovation whilst ensuring a fair return for UK taxpayers. The successful exploitation of the UK Continental Shelf demonstrates what can happen when Government gets the regulatory and support framework right.

I want to achieve no less a result through our Electricity Market Reforms – a new paradigm, one that does not support one specific technology, rather one that rewards the desire to encourage innovation, competition and rewards the delivery of secure, affordable and clean energy. One making the most of the abilities to boost

economic growth, making the most of the skills and jobs that will come from private sector investments – a paradigm to deliver a better energy mix for a brighter future.

Thank you so much.