Energy perspectives 17

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Energy review tantalises but will it deliver?

A week may be a long time in politics, but three years is a relatively short time in the energy sector. In 2003, an energy white paper all but ruled out any new build in nuclear power for the foreseeable future and asserted the primacy of gas markets. But on Tuesday 11 July, trade secretary Alistair Darling said government was to "address potential barriers to new nuclear build" and previewed a raft of further energy initiatives. Possibly because of the intense speculation of previous weeks, there were few surprises.

At this stage, of course, the review report is a green paper–policy proposals for consultation, not a blueprint for implementation and action. Yet the document provides a coherent synthesis of government thinking on a range of past decisions, current initiatives and planned and proposed actions.

This *Energy perspective* sets out the issues we discern within the energy review report. It focuses on a key theme—the importance of investment and the role of the market in delivering it. We also highlight three areas of the proposals—transforming suppliers incentives, valuing carbon and the case for nuclear—progress against which will ultimately determine the impact of the review.

No surprises

After months of speculation about a shift towards centralisation and a return to "dirigiste" planning, the language of the review suggests the market is still very much alive and kicking. There is no mention of capacity payments or capacity requirements, no new obligations in support of strategic gas storage (at least not yet) and the investment planning framework is left largely untouched. The importance of a market-derived carbon price comes across loud and clear, though carbon obligations and carbon contracts don't get a look in, which may surprise many. And even the proposed reworking of existing obligations such as the renewables obligation (RO) and the energy efficiency commitment (EEC) look limited in intent.

Too important to be left to the market alone?

So energy market prices will continue to be the mechanism for bringing investment forward. Commenting on this, Morgan Stanley noted: "The UK government wants to promote open and efficient wholesale markets. The energy review signals that the wholesale power and gas markets will not be interfered with."

But reading between the lines of the review and despite the market-friendly language, in a longer-term context the framework set out seems to embody further radical change to the open market vision that has driven energy policy for the last two decades. The market seems to come third in a three horse race, as policy initiatives and regulatory incentives look set to proliferate.

Again this is a point that should not raise eyebrows. The 2003 white paper already set a clear direction, placing the low carbon agenda and security of supply on at least a par with competition objectives. After all, setting an energy policy based on the twin aims of a challenging emissions target 44 years into the future–a carryover from 2003–and avoiding the generation mix unconstrained competition would deliver–is about as far from the pure market philosophy as one can get. The review's web preamble says as much: "We remain committed to the UK's competitive energy market as the best way to deliver secure energy supplies and competitive prices. Our aim is to set

Review headlines

- White paper later this year on 30 to 40-year plan.
- Confirmation of 60% reduction of carbon emissions goal by 2050.
- Consultation launched on a policy framework and a statement of need for new nuclear power.
- Health and Safety Executive developing guidance for new build nuclear stations.
- Government to be carbon neutral by 2012.
- Strengthening EU ETS from 2012, including incorporation of transport.
- Incentives for suppliers to help make homes more energy efficient.
- Renewable transport fuel obligation to be extended beyond 2010.
- RO to be increased from 15 to up to 20%, and consultation on banding it.
- Aggressive implementation of micro-generation strategy and increased measures for distributed generation.
- Encouragement for clean coal-fired generation, including removal of barriers to CCS and new coal forum.
- Maximisation of North Sea reserves.
- "Current planning regime needs fundamental reform" to secure energy investments.

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Reactions—hawks

Widely trailed in the media, politicians and pressure groups had weeks to think up their responses. Here are some examples:

"a disaster"

Tony Juniper
Friends of the Earth director

a "grave and perilous let down ... no real policies, no real action, no real decisions - no real energy review …It is content free, not carbon free."

Alan Duncan
Shadow trade and industry minister

the review "destroys" the possibility of cross-party consensus on environmental issues by "caving in to the nuclear industry lobby."

Edward Davey, Liberal Democrats trade and industry spokesman,

"failed to deliver the bold decisions that we have been waiting for"

Sir David Wallace, the Royal Society

"The energy review is a damp squib, full of rehashed and recycled policies. The government's continued dalliance with new nuclear power is a massive distraction from delivering a truly sustainable energy future."

Keith Allott,
head of climate change WWF-UK

Tony Blair is "fixated with getting new nuclear power stations built … anything substantial in this review that supports clean green energy will be fatally undermined as long as Blair remains Prime Minister."

Greenpeace

"fails to deliver any real content on reducing carbon emissions"

Professor Stuart Haseldine,
UK Energy Research Centre

"failed to introduce a clear direction"

Dieter Helm

the right regulatory framework *to enable the market to move in the right direction* to meet the long-term challenges." Why? Because, to quote the first sentence in the review, from the Prime Minister no less, "A clean, secure and sufficient supply of energy is simply essential for the future of our country." After the politicians have decided what we need, it is to be left to markets, but specifically-designed markets hemmed in by political and regulatory incentives, to facilitate the desired outcomes.

This emphasis on reworking the market framework to enable investment runs through the document, and we think is probably its key theme. It squares with a dominating issue in submissions made especially by the industry during the consultation, namely the need to minimise regulatory risk as the means of building confidence in new investment.

A number of measures are proposed to improve the market framework for investment, including:

- a strong commitment to carbon pricing in the UK through improving the operation of the EU ETS and possibly reinforcing it with an upgraded UK scheme;
- providing a proposed outline statement of need on the position on new nuclear build;
- strengthening the RO, but specifying possible future changes well in advance, less than a year after a major review had seemed to rule further early changes to renewables support arrangements;
- concentrating on proposals for the planning reforms for electricity projects; and
- developing new arrangements for providing to the market improved information about future trends in energy supply.

A maturing framework

This evolution over the 2003 white paper is manifest in other ways. The development of a number of new measures is contemplated such as:

- making the government estate carbon neutral by 2012. The government will also take energy efficiency "even more seriously in the buildings and operations it is responsible for";
- transforming energy suppliers into "champions of emissions reduction", primarily through

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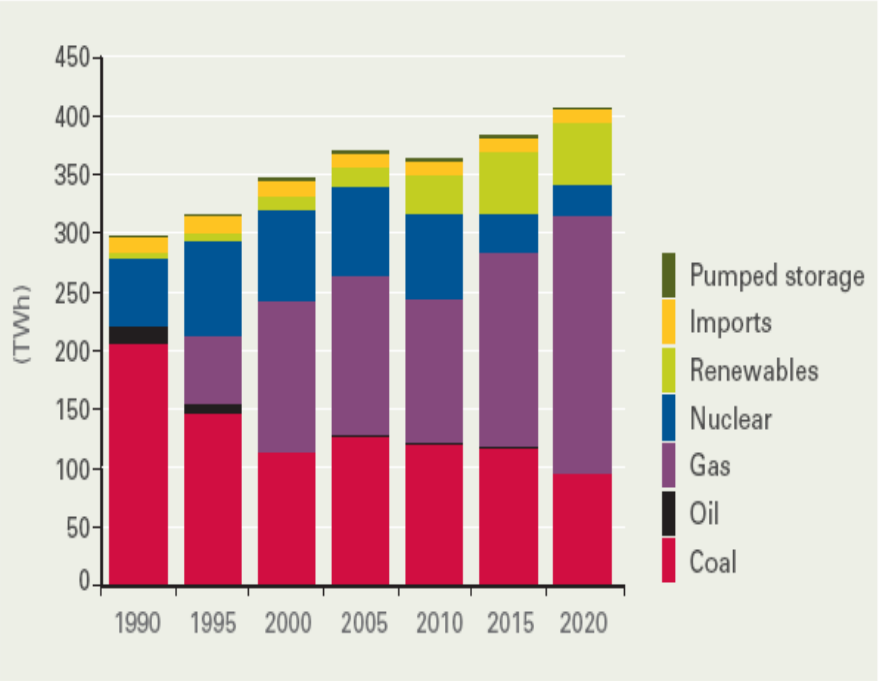
CHART 15. ELECTRICITY GENERATION MIX – PROJECTIONS TO 2020



Source: DTI, 2006

Transforming energy suppliers

The challenge of improving how we use energy at home receives much more focus than before, and is likely to lead to important changes for suppliers. It is an issue well worth addressing for the government as it yields immediate benefits for consumers through lower bills, thus helping restrain fuel poverty, as well as contributing towards lower emissions. There are encouraging signs of 'joined up' actions on their way, not least because government calculates that some 6-9MtC could be saved from efficiency related measures by 2020 beyond existing targets (see chart below), some 4-6% of 2005 emissions, through:

- improved billing and information to consumers on their energy use;
- using smart metering and 'Home information packs' for new buyers and tenants;
- phasing out the least energy efficient products; and
- incentivising suppliers to work with customers on efficiency.

An important measure in this context has already been put in place. Labour MP Mark Lazarowicz sponsored the Climate Change and Sustainable Energy Act as a private member's bill. It is intended to broaden the existing EEC from a measure targeted at directly reducing energy consumption to one that allows suppliers to offer more options for the delivery of carbon savings, with a larger range of measures, more scope for innovation and competition amongst suppliers to encourage consumers to reduce energy demand.

The government will be consulting this summer on whether to extend the range of measures allowed under the third phase of EEC from 2008. The bill also requires energy suppliers to offer to acquire exported electricity from micro-generators. There is also a very significant workstream in the development of smart metering for household consumers, which is being led by Ofgem. As well as providing better information for billing, smart meters may provide households with real time information about their consumption. The government is also practicing what it preaches by pledging to make its estate carbon neutral by 2012. More generally we will see new regulation used to increase building energy efficiency and also remove energy inefficient appliances from the market.

All in all these measures imply a significantly enhanced programme to address domestic energy efficiency. They also mean more complexity–and therefore cost–for energy suppliers. Their delivery through ring-fenced mechanisms will help ensure visibility of performance but the incentives to get suppliers on board remain to be detailed.

TABLE 8.1: CARBON IMPACT OF GOVERNMENT MEASURES ANNOUNCED SINCE THE 2006 CLIMATE CHANGE PROGRAMME REVIEW (EXCEPT WHERE DENOTED†)

	MtC abated in 2020
Better Billing	0 – 0.1
Changes to the Renewables Obligation[1]	0.7 – 1.5
EU Emissions Trading Scheme[2]	8
More energy efficient products[3]	2
Nuclear new build[4]	0 – 1.1
Renewable Transport Fuel Obligation	0.3 – 1.1
New measure for achieving carbon savings from large non-energy intensive organisations	1.2
Successor to EU voluntary agreements on new car fuel efficiency[5]	1.8 – 2.1
Continued commitment on energy suppliers to 2020[6]	3.0 – 4.0
†Continuation of building regulations 2005[7]	2.5 – 3.0
Carbon neutral government[8]	0 – 0.8
Carbon neutral developments[9]	0 – 0.4
Total	*19.5 – 25.3*

Reactions—doves

"If we are to address global warming, both nuclear and renewable technology are required, and, what is more, they need to work together."

Professor Robin Grimes, Imperial College London

"put[s] the UK on track towards a sustainable future through committing to an extension to the RO."

British Wind Energy Association

The review contains a "strong endorsement of more widespread use of renewables", but "stable policy incentives to bring in the investment needed to move the UK out of the bottom division of renewable energy delivery" are needed.

Philip Wolfe, chief executive, Renewable Energy Association

"It is vitally important that we move on as soon as possible from the froth of public debate to a meaningful framework for investment."

David Porter, chief executive Association of Electricity Producers

"The document recognises the need, but fails to say how the long-term investment will be secured over the decades ahead."

Nick Goodall, chief executive Energy Networks Association

"the paper is more interesting for the things it rules out, e.g. no strategic gas storage, no capacity payments for electricity generators, no 'nuclear ROC' scheme."

Citigroup Investment analysts

"A step in the right direction."

Paul Golby, E.ON

"The support for nuclear is not surprising as this form of power is a vital part of the overall energy mix needed to enable the UK to protect and maintain its power supply."

John Garstang, ADAS (environmental policy advisors)

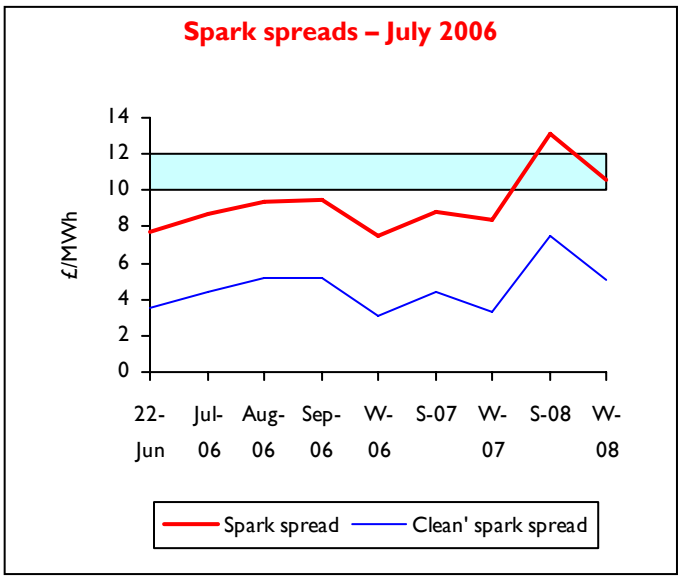
Valuing Carbon

Setting a price for carbon imposes an extra cost on burning fossil fuels. The higher the carbon cost and the greater the emissions, the higher the cost burden will be on the generator. Therefore, power producers will be incentivised to switch to lower emission technologies. In practice this is supposed to mean a move away from coal to gas, renewables and now nuclear. In the current market before accounting for carbon, with dark spreads–the margin on coal generation–at £25/MWh and spark spreads–the margin on gas generation–around £10/MWh, coal is commercially much the most attractive proposition. The £10-£12/MWh range is thought of as the net return required to support commercial new build of CCGT power stations. With oil and gas prices expected to remain high into the medium term, this dynamic is one of the key factors behind the cleaner coal projects being considered by three of the Big Six. Incentivising these companies, and other potential investors, to make desirable generation investments is a key policy driver and has been recognised as such by the supply industry in its many, collective calls for a long term, stable policy framework that includes a means of establishing a stable value for carbon.

The review report reaffirms strong commitment to the EU emissions trading scheme (ETS) and sets out several initiatives for the post 2012 regime which is currently under development, including:

- providing greater clarity on when and how caps/limits on emissions will be decided;
- simplifying and harmonising the mechanism, particularly the way that allowances are distributed, so that there are clear and strong incentives to invest in low carbon technology;
- considering whether more sectors – and more greenhouse gases – should be included in order to maximise opportunities for significant, cost-effective carbon savings; and
- thinking globally to develop a more liquid and efficient market.

Furthermore, the report reaffirms commitment to there being a continuing carbon price signal beyond 2012. Whilst the EU ETS is expected to be the means for providing this signal, the implication here is that government would consider taking unilateral action, possibly development of the climate change levy or a domestic trading scheme, if for whatever reason the EU ETS does not fit the bill. This mechanism is important simply because of the scale of new investment – anywhere between 20 and 35GW depending on your viewpoint – thought to be required. This is a strong sign both that the government largely accepts the industry's arguments on the scale of the 'generation gap' and is also prepared to take long term measures to stimulate investment to come forward. But the detail at this stage is largely absent.



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changes yet to be consulted on and detailed through EEC3;

- "aggressively" implementing a micro-generation strategy and increasing measures for distributed generation;
- constraining new generation choices to low carbon objectives through, for example, making new coal developments contingent on the use of carbon capture and storage (which did not get a look in in 2003), and with the government to determine by the time of the pre-budget speech whether a commercial demonstration will proceed; and
- last but certainly not least, official encouragement for the construction of nuclear generation.

This represents a major programme of further reform, whatever the report's many detractors might say. And the additional potential medium-term carbon gains even without nuclear are significant, as shown on page 3. But by flagging these and other changes in some cases well in advance, we see practical evidence of the review's avowed commitments to providing the long-term investment framework by reducing policy and regulatory uncertainty.

The emphasis on energy efficiency also marks a departure. "The starting point for reducing carbon emissions is to save energy", comments the report even before any mention of supply-side options. In all some 6-9MtC of additional savings have been identified *on top of* the 12MtC already identified in the 2006 Climate Change Programme by 2010. A portfolio of new measures is contemplated, including the phase out of the least efficient light bulbs, removing inefficient white goods from the mar-

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Stating the need for new nuclear

The government believes that nuclear has to play a role in the future UK generating mix because of its contribution to increased diversity of energy supplies and its role as a source of low carbon generation. The government believes that the evidence gathered during the energy review and the associated public consultation supports such a view.

Proposed statement of need, consultation on the Policy Framework for New Nuclear Build, DTI, July 2006

Economic case "established"

Provided that carbon prices can sustain €20/EUA and the international oil market remains over $40/bl, investment in new nuclear generating capacity would be economic. So concludes the energy review report, which sets out the core view that output from such capacity would cost around £38/MWh, with a range of £30-44/MWh. Put another way, nuclear energy is once again seen as the preferred hedge against high enduring oil prices.

Whilst there seems to be confidence that private investors would be willing to invest, taking construction, operation and price risk, government concludes it helps address the main perceived barrier, the planning process. The process is already underway. A Statement of Need for nuclear will feature in the white paper at the turn of the year, and the consultation process for this has already begun. Accompanying the report is a consultation on defining the policy framework—from which the chart opposite is abstracted—which makes clear how far its principles are developed already. The government sees its role as, having stated the need, ensuring that investors are not to be unduly hindered in taking schemes forward. Directly under its control are clarifying international obligations and determining site availability. It will also act to establish a technology licensing and approval process, meaning that planning inquiries will have a much tighter, localised remit. The multi-year planning sagas for Sizewell B and the never-constructed Hinkley Point C PWRs are not to be repeated.

The Government sets the strategic context for new nuclear build	Regulators assure safety, security and radiological impacts of design proposals	Planning process considers suitability of specific proposal and mitigation of potential negative local impacts
Setting the Strategic Context for New Nuclear Build	Consultation on a policy framework, including a "Statement of Need" for the planning system on nuclear power leading to a national policy statement through a White Paper	
	Justification (under EURATOM Treaty) of a new "nuclear practice" to provide a balance of the benefits of the new practice against the potential health detriments	
	Strategic Siting Assessment to set out criteria for deciding on potential sites (and indicate how potential sites meet these criteria) where the Government would accept new nuclear build	
Roles and Responsibilities of the Regulators	Health and Safety Executive ensures safety of a specific power station design (with a reference to pre-licensing)	
	Office for Civil Nuclear Security ensures security of a specific power station design	
	Environment Agency / Scottish Environment Protection Agency ensures radiological and other environmental impacts of a specific power station design are managed	
Planning Inquiry to focus on suitability of proposal and mitigation of potential negative impacts	Local issues, e.g. visual impact, environmental impacts	
	Other relevant issues as inquiry inspector considers necessary	
	Final decision to grant permission taken by Secretary of State for Trade and Industry/Scottish Ministers	

Source: Energy review Annex A Consultation on the Policy Framework for New Nuclear Build

Long-term needs, short-term steps

If we envisage multiple developers coming forward with proposals to build nuclear stations, these reforms will be particularly necessary, but there will also need to be clearly defined criteria to compare rival offerings, especially if there is competition for potential sites. The government says its intends to work with potential developers over the coming year to make an assessment of the possible designs, implying that this will be an area of significant activity in the short term. Its consequence will be the establishment of a justification process, an initial regulatory step, which rather than a formal approval offers a high level assessment of a particular design of reactor on safety, security and other grounds to confirm whether it would offer a net benefit. Securing this status would mean that questions on its general appropriateness of its design would not form part of the local planning process. A similar approach is proposed for the selection of sites. Nationally defined criteria will identify the most suitable sites for nuclear power stations, and indicate how potential sites meet these criteria. The government intends to begin the strategic siting assessment in early 2007 and the process will feature public consultation. It will involve a full assessment of the strategic and high level environmental impacts of nuclear build and will identify the criteria for locations where government would support proposals for new plant. It will also indicate how potential sites meet these criteria. As the public will have been fully engaged in this process, these considerations should not then be re-assessed at a later site-specific public inquiry.

Key decisions of principle taken, now process must be delivered

Whilst the energy review itself has been criticised by some for lack of definition, there can be no doubt that there is considerable clarity of thinking on policies necessary for private investors to deliver new nuclear. The lessons of the past appear to have been taken on board, together with a recognition that this time round new nuclear build can be left to the market, albeit a market characterised by institutional reform.

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ket and limiting the amount of standby energy used in consumer electronics. These commendable measures are to be combined with increased information on energy use and labelling in a concerted attempt to inform and influence behaviour. While some environmental groups have been cynical that the emphasis from ministers on energy efficiency is a placebo to distract from a predetermined primary objective to impose nuclear, the government is right to highlight and set out to tackle for the first time the demand-side behavioural issues.

Not a nuclear magic wand–yet

Of course, the review report is more "amber and changing" rather than "green for go" at this stage. But the change of heart since 2003 is clear: "We have concluded that new nuclear power stations would make a significant contribution to meeting our energy policy goals… For illustrative purposes, if existing capacity were replaced, then by 2030 our carbon emissions would be around 8MtC lower – equivalent to total emissions from twenty-two 500MW gas-fired power stations – than otherwise, and our gas consumption some 13% lower." A white paper is to follow around the turn of the year. And the Health and Safety Executive is due to deliver guidance for potential promoters of new nuclear power stations, aimed at explaining how they may obtain assessment of possible reactor designs before committing significant investments to planning. The final report of the committee on radioactive waste management later this month should provide the basis for a decision on the long-term management of waste. While there are other things that have to be done before the prospects of investment become realistic, especially establishment of a stable carbon price, the government has set out a framework for resolution of the complex issues.

Paying the price

As noted, a crucial part of that framework is the means to provide a long-term value for carbon, and this is also seen as the key to unlocking investment in other more expensive technologies. And this leads to what for us is another significant learning point. This is the very pressing need, acknowledged in the review, for robust, decision-making based on quality medium- and long-term forecasts. In a competitive market, players would keep their future plans as secret from one another as possible to maximise their commercial advantage. But with its extra, politically-driven costs for carbon and renewables, regulated asset value methodology for networks and supply diversity agenda, we think there is need for an overhaul, and the government seems to be heading in this direction.

The necessity arises because consumers are now mandated to pay very significant sums to support non-market objectives. A carbon value of €15/EUA represents a transfer of at least £1bn/year from electricity consumers to producers given the current generating mix, and the RO will cost them the best part of a further £800mn this year. The need to develop a considered alternative view is likely to be an important responsibility of the new Climate Change Office to be formed out of Defra. Getting it wrong by over-providing capacity may not be as politically disastrous as the lights going out, but it could still prove expensive to customers and wider economic competitiveness.

So far, so good

Our overriding sense of the energy review report is that it sets a clear direction, and action–in many important respects, not yet defined–is likely to follow on numerous initiatives. But this view does not do it full justice, and there is already flesh on the bones in some areas, and the fundamental philosophical debate about the style of market needed to deliver policy goals has been decisively concluded. An incremental, additive approach has been adopted, building on market mechanisms, albeit within a more articulated and developed institutional framework. The position taken on the nuclear issue–while emotional to many–is not a fundamental shift, and almost represents a parallel process within a much broader work-stream. The nuclear piece is one–albeit an important–piece of a jigsaw that has many component parts.

The key themes of the review based on the green paper are investment, regulatory certainty and carbon. They have been fully exposed and the indications are that government is asking all the right questions. Further consultation will now help provide the missing detail over the next six months.

More information

About the energy review

Click "Our energy challenge" to access the full energy review documentation. Some sample reactions can be seen at Times, BWEA, REA, Conservatives, Green Party, Hansard and Ofgem.

About Cornwall Energy

Cornwall Energy Associates are independent and dynamic experts on energy markets specialising in the interpretation of policy and regulatory issues. Click Cornwall Energy for more about us.

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