

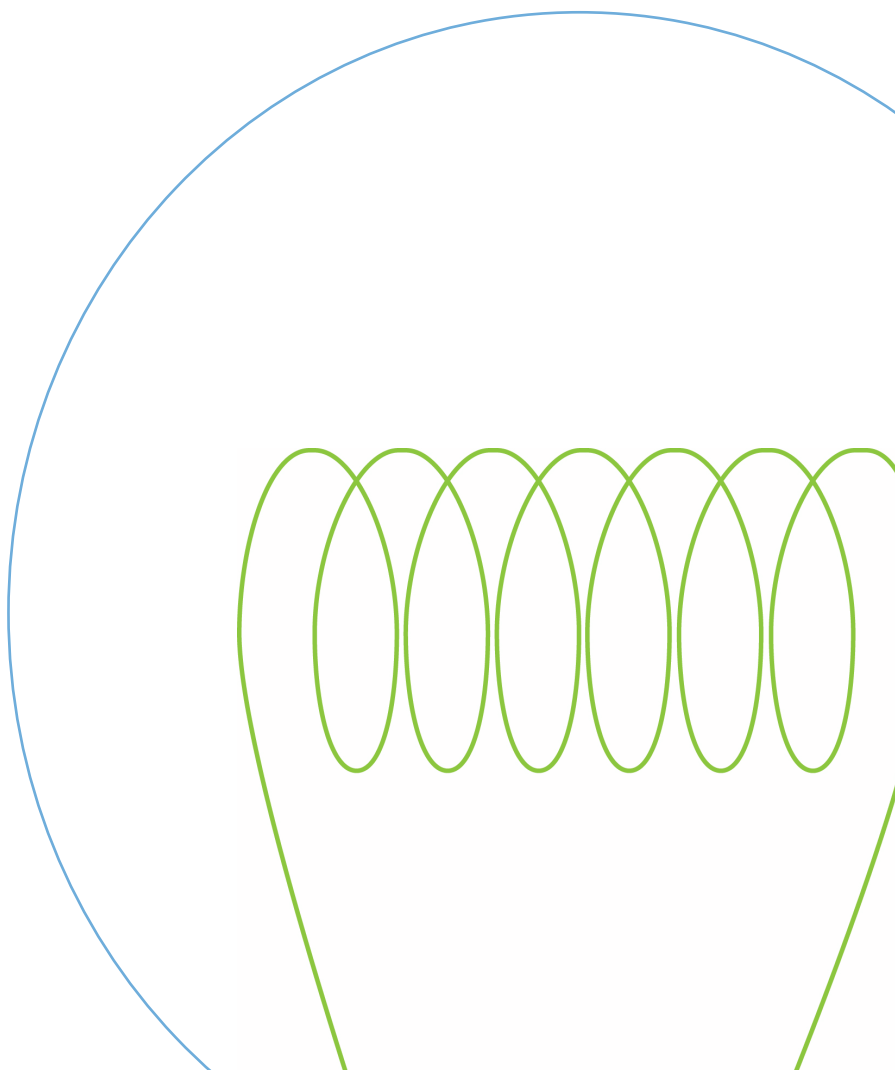


# From Review to Reality: The search for a credible energy policy

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1 Lawson, N., 'Energy Policy', ch. 1 in, *The Market for Energy*, ed. by D. R. Helm, J. Kay, and D. Thompson, (Oxford: Oxford University Press, 1982).

## 1. Introduction – the third Labour review

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When Labour came to power in 1997, energy was not a priority. Indeed, apart from the windfall tax and the need for a political gesture to address the 'fat cats' issue in the privatised utilities, it was widely assumed that energy would remain very much in the background. The privatisations and associated regulatory frameworks had reduced network costs, and fossil-fuel prices were low and falling. A policy of benign neglect, and acceptance of the Conservatives' 'market for energy' approach, first set out by Nigel Lawson in 1982 was adopted.<sup>1</sup>

Subsequent events have demonstrated how complacent that approach has been, and Labour's first two energy White Papers – in 1998 *Energy Sources* and 2003 *Our Energy Future* – failed to provide an enduring energy policy framework. By 2005, performance was moving in the wrong direction for each of the four main policy objectives:

- carbon dioxide (CO<sub>2</sub>) emissions were rising, not falling
- security of supply had so deteriorated that the prospect of actual power cuts was a serious possibility for the coming winter, with price spikes as supply and demand came into tangency affecting both industry and domestic customers
- competitiveness – once the much trumpeted achievement of the excess supply years of the 1990s – was declining
- and fuel poverty – far from being abolished for the most vulnerable as targeted by 2010 – was rising too.

The 2006 *Energy Review* represents a third attempt to create a credible energy policy that provides a framework within which the private sector can deliver these public policy objectives.<sup>2</sup>

The debate surrounding the review process has been very much focused on nuclear power, and the process has played an important part in changing public sentiment. However, the Review provides little by way of concrete policy proposals and it remains unclear as to whether the government's policy is pro-nuclear, or neutral on nuclear – whether it believes nuclear has a role to play, or actively intends to deliver a programme of new stations. The Energy Review proposes a 'statement of need', but leaves the decisions to the market. It recognises that a market approach requires a long-term price of carbon, but does not provide one. But the Energy Review covers much more than nuclear issues – notably, renewables, energy efficiency and gas dependency. In part, this is to provide a balance to the nuclear debate, and in part it reflects the complexity of energy policy. In other areas – such as renewables and energy efficiency – a number of proposals are made, subject to further consultation. As a result, the Energy Review is best seen as a step along a continuing process of developing an energy policy, a statement of intent and preference, rather than a detailed blueprint for delivery.

This paper provides a critique of the Energy Review, focusing on the continuing gaps between the current position as represented by the Review and the requirements of a credible energy policy which would start to close the gap noted above between the objectives and the outcomes. To understand how the gap between objectives and outcomes had continued to grow, and the rationale and challenges that the Energy Review in 2005/06 was designed to address, the first step is to consider the context of the 1998 and 2003 White Papers (chapter 2) and why the latter failed to provide an enduring energy policy framework (chapter 3).

Part of that failure relates to the weaknesses in the underlying analyses, and over-optimism about renewables, energy efficiency and the European Union Emissions Trading Scheme (EU ETS). But part also relates to the developing international context, and the gradual feed-through of the oil price shock which began in 1999/2000 and has been sustained ever since. Gas imports and dependence on Russian gas supplies have exposed the complacency on security of supply which the first two White Papers displayed. Chapter 4 sets out the dimensions

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2 Department of Trade and Industry, *The Energy Challenge*, Energy Review (2006).

of these international concerns, and the reasons why energy policy should be increasingly European and international, rather than British and domestic.

The next step is to examine how the 2005/06 Energy Review tackles the two core challenges it identifies: climate change and security of supply (chapter 5), before turning to the mechanisms the Review relies on to deliver them (chapters 6 and 7) – and in particular the (lack of) a long-term price for carbon and a capacity mechanism. The tortuous attempt, on the one hand, not to be seen to 'pick winners', and, on the other, to 'pick' renewables and energy efficiency and try to fine-tune the technological options, reveals much about the muddle and confusion in the Energy Review's policy framework.

The nuclear question is then buried in the Energy Review as just one way of achieving the objectives. But, of course, politically it is the main issue. Political division has created a compromise – and hence the core ambiguity referred to above of the Energy Review – between the provision of a framework that *might* lead to new build, and an actual *commitment* to new build (chapter 8).

The failure of the Energy Review to provide a firm foundation for energy policy – and within it to anchor the nuclear question – raises more general questions, notably about the institutions (chapter 9). The Energy Review proposes a new Office of Climate Change, grafted onto the mess of other overlapping institutions. The case for an energy agency is in effect well made by the Energy Review – its absence is one explanation for why so little progress has been made. This paper concludes (chapter 10) by looking forward to the White Paper, and probably yet another Energy Review before a proper framework for energy policy is created.

## 2. The first two reviews: Mandelson in 1998 and Hewitt in 2003

Energy policy was not one of Labour's priorities when it came to power in 1997, but that neglect was already coming under pressure within months. The coal contracts so painfully negotiated in 1992/93 (and which nearly brought the career of Michael Heseltine to a halt), expired in March 1998, heralding the prospect of a further sharp contraction of the coal industry, as the dash-for-gas had squeezed the coal market. The coal industry, once employing over one million men, would be reduced to little more than ten thousand. For Labour, this was not only politically unfortunate, given the strong cultural and trade union links with the miners, but posed a rather sharp challenge to its newfound market credentials. Protection of coal would also have dented its green credentials, having in its 1997 election manifesto committed itself to a *domestic* 20% CO<sub>2</sub> reduction from 1990 levels by 2010. The political and economic dilemmas were acute, and finding a solution that would avoid hard trade-offs between conflicting objectives was not an easy task.

The government's response was its first (internal) review of energy policy, completed with the 1998 White Paper *Energy Sources*, presented by Peter Mandelson.<sup>3</sup> After much arm-twisting, led by Geoffrey Robinson at the Treasury, the electricity generators were 'persuaded' to sign new coal contracts.<sup>4</sup> Having been identified as the villains because apparently the decline of coal was claimed to be due to the exercise of their market power, the 'price' of their continued dominance was to contract

5 DTI (1998), p.12, para 2.43.

6 DTI (1998), p.14, para 2.47.

7 DTI (1998), para 2.4.

8 HC Debate, session 1999-2000, paras 678-702, April 17th 2000.

3 DTI, *White Paper Energy Sources*, DTI (1998).

4 Dieter Helm, *Energy, the State, and the Market: British Energy Policy since 1979*, revised edn, (Oxford: Oxford University Press, 2004). p. 295.

for more coal than the market actually dictated, thereby propping up coal output. Coal was further protected in the 1998 White Paper through a moratorium on licence consents for new gas-fired power stations – presumably on the assumption that more gas stations were being built *because* the generators had market power, though the connection was very hard to fathom. Mandelson argued that this intervention was consistent with promoting competition and sustainable development – but just how banning new gas entry and enhancing coal emissions met these broad objectives was difficult to explain. The White Paper tried to paper over the cracks by claiming that: “The policy will be short-term, temporary and aimed specifically at protecting diversity and security of supply while the distortions in the market are removed, so that the final result is a competitive market that can operate more vigorously and effectively.”<sup>5</sup>

The reconciliation with the market approach was therefore confined to a ‘temporary’ intervention. The government argued that it was not failure of the market approach as such, but rather failure to deal with the market power of the generators. Consistency with the environmental objectives was merely asserted rather than demonstrated: “It is important to ensure that these proposals are consistent with sustainable development, which is at the heart of the government's energy policy, and in particular the government's environmental targets on greenhouse gases.”<sup>6</sup>

Interestingly at this stage, the government's role in the energy sector had ‘three main roles’ in the energy sector:

- to ‘set the framework’
- ‘provide for regulation in the consumer interest’
- and ‘monitor the wider public interest’.<sup>7</sup>

It would take two more attempts to give the ‘wider public interest’ more substance, though even at this stage there was already considerable non-market intervention to assist renewables and energy efficiency, carried over from the Conservatives.

The moratorium did not last long, and was lifted by Stephen Byers in 2000.<sup>8</sup> The problems of reconciling all the objectives of energy policy (competition, sustainable development and social concerns) were masked by falling fossil-fuel prices and further coal contraction. But benign neglect contin-

ued to work only as long as energy markets remained in excess supply. At the end of 1999, the two decades of falling fossil-fuel prices came to an abrupt halt. Against expectations, oil prices doubled, and then continued to rise from then onwards to \$60 and, eventually, in 2006 to beyond \$70 a barrel.<sup>9</sup>

It took time for this new context to sink through into policy-making. John Prescott notably announced in 2000 that the government would “seek an end to the problem of fuel poverty” and in particular “an end to the blight of fuel poverty for vulnerable households by 2010.”<sup>10</sup> This confidence rested in part upon the oil companies’ advice to the DTI and others that the increases in winter 1999/2000 were temporary, and likely to be reversed in the spring. The government pushed on with liberalisation and the introduction of the new electricity trading arrangements (NETA) – eventually going live in spring 2001 – which focused on spot markets, short-term trading and inevitably brought volatility. As long as prices were assumed to be low (and winter 1999/2000 a temporary blip), this meant that there would be lower prices for customers, exploiting the *assumed*, continued excess supply. Indeed, the introduction of NETA was justified on precisely these grounds that it would reduce prices “of the order of £1.5 billion per annum.”<sup>11</sup>

But prices did not fall back in 2000 – they carried on their slow but continuous rise. As a result, following the 2001 general election, the government decided that it would be prudent to carry out a review of energy policy. The Californian crisis and the recognition of gas import dependency – notably in the EU Green Paper reinforced nervousness about energy policy.<sup>12</sup> The Performance and Innovation Unit (PIU) – notably not the DTI – was tasked to look again at security of supply. As with the 2006 Energy Review, there appeared to be little confidence in the DTI’s energy policy capability – a point we return to below in chapter 9 in considering institutions.

Though by the time it was published in 2002 events in oil and gas markets should have rung some alarm bells, in his foreword to the PIU report, the Prime Minister could still state that the policy was for ‘cheap energy’ which was also ‘reliable and sustainable’.<sup>13</sup> The PIU quickly convinced itself that there was little immediate threat to security of supply, stating that ‘there appear to be no pressing problems connected with increased

9 *The Economist* speculated in its front page in 1999 that oil prices might fall to \$5 a barrel.

10 DTI, *UK Fuel Poverty Strategy*, (2001).

11 Office of Gas and Electricity Markets and Department of Trade and Industry, ‘*The New Electricity Trading Arrangements: Conclusions*’, (October 1999) For an analysis of the Ofgem estimates of costs and benefits from NETA, see Helm (2004, pp. 318–322).

12 Commission of the European Communities, *Towards a European Strategy for the Security of Energy Supply*, COM(2000)769, June, 2000.

13 Performance and Innovation Unit, *The Energy Review*, (London: Cabinet Office, February 2002)

14 PIU (2002), p. 5.

15 Labour Party, *New Labour Because Britain Deserves Better*, April 1997.

16 Royal Commission on Environmental Pollution, *Energy: The Changing Climate*, 22nd report, Cm 4749, (London: HMSO, 2000) RCEP (2000).

17 Helm (2004), pp. 394–8.

18 PIU (2002), p. 11.

19 PIU (2002), p. 11.

20 DTI *Our Energy Future—Creating a Low Carbon Economy*, White Paper, CM 5761 (London: The Stationery Office, 2003).

dependence on gas, including gas imported from overseas’, and that networks were relatively robust – “recent levels of investment in the energy industries have been healthy.”<sup>14</sup>

The PIU report therefore could turn its attention to the climate change dimension, and here it had two background considerations to take into account. First, the 1997 Labour manifesto committed the government to reduce domestic CO<sub>2</sub> emissions by 20% from their 1990 levels.<sup>15</sup> Second, the Royal Commission on Environmental Pollution had concluded in 2000 that the UK should adopt the target of a 60% reduction in CO<sub>2</sub> by 2050.<sup>16</sup> The latter, being a Royal Commission, required a formal response from government, and whilst ministers immediately and publicly endorsed the RCEP’s findings, it was a more difficult task to explain how the target might be achieved.

The PIU team took this last task seriously, and came up with the broad conclusion that it could be achieved largely by renewables and energy efficiency, based upon some very optimistic analysis of the costs of renewables technology and investments in energy efficiency.<sup>17</sup> Crucially, it concluded that nuclear would not be necessary. It “seems likely to remain more expensive than fossil fuelled generation”. It concluded that “there is no current case for further governmental support.”<sup>18</sup> But whilst nuclear should not be further supported, renewables and energy efficiency should be protected from competition through the adoption of formal targets with the costs being passed through to customers – a position which is in effect carried over to the 2006 Energy Review. Both agreed that “the decision to bring forward proposals for new nuclear build is a matter for the private sector” and neither applied the same logic to renewables or energy efficiency.<sup>19</sup>

The PIU report led in turn to further consultation and work by the DTI and Department for Environment, Food and Rural Affairs, culminating in the 2003 White Paper *Our Energy Future*.<sup>20</sup> Though this stopped short of setting binding targets for renewables and energy efficiency through to 2020 (the word ‘aspiration’ was substituted for ‘target’ late in the message), it confirmed the anti-nuclear position, confining discussion of nuclear to just one paragraph. The key ministers at DTI and Defra then publicly reinforced the anti-nuclear message and

a further White Paper was promised before any new nuclear power stations could be permitted. In effect, the scepticism in the PIU report had hardened into almost hostility.

The 2003 White Paper also downplayed security of supply concerns, and based its analysis on a long-term price of oil at \$25. Russian gas and the possibility of a further steep rise in oil prices received little attention, despite the evidence of growing dependency on Russia and the deteriorating situation in Iraq and Iran, all of which were readily apparent in 2003. The criticisms of NETA were largely rejected, as was any suggestion that a capacity market might need to be introduced. Using almost the same words as the 2006 Energy Review, the 2003 White Paper concludes that: “the case has not been made for such an instrument in the UK market.”<sup>21</sup> Furthermore, the White Paper largely reaffirmed the delegation of network regulation to Ofgem, and signalled that the networks themselves were deemed adequate for the requirements. It went out of its way to avoid any suggestion that intervention might be necessary, explicitly stating: “We will not intervene in the market except in extreme circumstances such as to avert, *as a last resort*, a potentially serious risk to *safety*.”<sup>22</sup> It immediately goes on to discuss terrorist threats, which implies this is the sort of ‘serious risk’ the government had in mind.

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21 DTI (2003), p. 86, para 6.43.

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22 DTI (2003), p. 77, para 6.7, italics added.

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23 DTI (2003), p. 3.

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24 Department of the Environment, Transport and the Regions *Developing an Integrated Transport Policy*, London, 1997.

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25 The Energy Review states that renewables generation eligible under the Renewables Obligation was 4% of total electricity supplied in 2005, and that 1.7GW of wind is connected to the grid. This capacity then needs to be translated into a load factor to take account of variable wind flows, reducing this number to around one-third (ie, around one-half a modern coal station).

### 3. The 2003 White Paper unravels

If the government thought that the 2003 White Paper ‘solved’ the problems of energy policy, and provided a ‘truly sustainable energy policy’ with ‘a strategy for the long term’ and would thereby take energy off the political agenda, it was quickly disabused.<sup>23</sup> From the publication of the 2003 White Paper (and arguably since 2000), the gap between the objectives and performance continued to widen. As already noted in the introduction, on all four core objectives of energy as set out in the White Paper – climate change, security of supply, fuel poverty and competitiveness – performance not only failed to match the objectives, but actually *went in the wrong direction*.

On climate change, CO<sub>2</sub> emissions continued to rise, not fall (indeed they had been rising since 1997). As oil (and therefore gas) prices continued to rise rather than fall back, as predicted, the coal-burn increased relative to forecasts, and with it CO<sub>2</sub> emissions. Prescott’s integrated transport strategy, introduced in 1998 delivered very little, and the substitution from roads to rail failed to materialise.<sup>24</sup> The renewables side proved painfully slow: by 2006 the entire installed wind capacity amounted to about half that of a standard-sized coal power station, with only a trivial impact on CO<sub>2</sub> emissions.<sup>25</sup> Demand for energy did not follow the path projected from the (extremely) optimistic assumptions about the scope for take up of energy efficiency measures and its claimed economic viability.

Despite the recommitment in the Labour manifesto in 2005 to the domestic CO<sub>2</sub> target, by 2006, the much delayed *Climate Change Programme 2006* had de facto demonstrated that the 20% reduction target for 2010 was unattainable – possibly



by a wide margin.<sup>26</sup> Indeed, current trends indicated that even holding CO<sub>2</sub> emissions constant over the period of Labour government since 1997 would be very demanding (the total *increase* since 1997 was of the order of around 5% – the big reductions having occurred before 1997 as a by-product of the closure of the coal industry and the first dash-for-gas). By 2006, the central role given to the EU ETS in the 2003 White Paper<sup>27</sup> had failed to make much noticeable difference to carbon emissions – for reasons we return to in the next chapter. Rather, its costs appear to have been largely passed through to customers. The rhetoric on climate change had far outstripped the extremely modest progress, and the packages of policies in the 2003 White Paper had, at best, had only a marginal impact. Britain had done no better than the much criticised US. Faced with the growing discrepancy between the scale of the global warming problem and the laudable commitment to properly address it, on the one hand, and the impact of existing policies, on the other, climate change objectives signalled the need for a fundamental rethink of energy policy.

On security of supply, the complacency of the 2003 White Paper was quite quickly made apparent. By the winter 2005/06, there was very real concern that there might be *physical* interruptions to electricity supply and perhaps gas supply too. Long before the Ukrainian gas crisis erupted in January 2006, prices had increased sharply in the UK, as a result of the convergence of demand and supply. This was exacerbated by three factors: the lack of infrastructure; the design of the electricity market (NETA); and the absence of long-term contracts for gas. The fact that there was a fire at the Rough storage field (removing the major gas storage facility for several months) simply made a bad situation worse – and the fire served to highlight more generally the lack of storage in the UK (itself the result of the years of North Sea supplies when the gas fields themselves fulfilled this role).

It is important to understand how these three factors played out in winter 2005/06, and the policy responses, since these provided the immediate backdrop to the Energy Review. First, on infrastructure, this depended in large measure on the way Ofgem regulated the networks, and in particular set the capital expenditure (CAPEX) totals that would be financed

26 Labour Party, *Britain: Forward Not Back*, Election Manifesto, April 2005 and Defra *The UK Climate Change Programme*, 28 March 2006.

27 'We will make the new trading scheme a central plank of our future emissions reduction policies' (p. 29, para 2.27).

28 Helm (2004), pp. 339–44.

through the price caps. In the earlier 2001/02 periodic price review of Transco (then owners of the gas network), Ofgem had sharply cut back Transco's proposed investment programme. This investment would have reinforced the network substantially, helping to relieve pressures on the system at the point of stress.<sup>28</sup>

Curiously, the government appeared rather muddled about the extent to which infrastructure played a part in the crisis in 2005/06. It argued that in the 2005/06 winter, the problem was not one of lack of infrastructure – and then went on to argue that subsequent winters would be fine because there would be major new infrastructure available. Presumably the problem in 2005/06 which the DTI perceived was a lack of gas in the Interconnector, but a diversity of sources of pipeline and LNG supplies would have alleviated the impact of the (lack of) Interconnector supplies, itself the consequence in large measure of the absence in Britain of long-term contracts with continental suppliers, to which we return below.

The second factor was the design of the British electricity markets, and specifically NETA (and its gas counterpart). As a spot-based system, without a capacity element, as demand and supply converged, sharp volatility was to be expected. Indeed, this volatility was deemed to be a virtue: high price spikes would, it was argued, attract new investment. The corollary of the reliance on a spot market was that there were few longer-term contracts, unlike in continental Europe. Whereas German companies were protected from the price spikes, British ones were not. Suddenly the much-hyped competitive advantage in Britain (which was in large measure the result of spot pricing in excess supply conditions) turned into the reverse.

This led to one of the most comical aspects of the winter 2005/06 crisis, and demonstrated very clearly how out of touch officials appeared to have become with the trends in energy markets. As prices rose, supplies did not flow down the Interconnector to Britain, for the very good reason that on the continent, long-term contracts protected companies from price spikes. The contracts were designed with this specific situation in mind; they provided customers with the insurance protection against price spikes, as the corollary of protection against low prices for producers – ultimately Gazprom. Obviously, these

contracts had to be honoured.

Thus, higher *spot* prices did not mean that gas would follow that price: gas followed the contracts first. The government however thought otherwise: ‘what is happening to the spot gas price is irrational. It tells me that it is awash with gas at the moment’.<sup>29</sup> Finally, after the winter was over, it was claimed that there had in fact been no crisis because there had not been power cuts – failing completely to appreciate that the crisis was all about the *price* increases, which happened *before* the physical limits of the energy system had been reached. Companies and consumers faced a gas and electricity price shock in the winter 2005/06 as a result of the margin between supply and demand being too tight – neatly illustrating the asymmetry of effects between excess and deficient supply: in excess supply, all bear a slightly higher cost for the insurance of the capacity margin; in excess demand, prices rise sharply and all customers bear the much bigger price effects. Though no system should be designed to avoid any possibility of such volatility, energy policy should provide the incentives necessary to preserve a reasonable margin in normal times. It should be remembered that there was nothing particularly ‘abnormal’ about winter 2005/06.

Not only were the carbon, security of supply and competitiveness objectives damaged, but from 2003 fuel poverty started to go up too, in response to the price increases, making a nonsense of John Prescott’s promise to abolish fuel poverty for vulnerable groups by 2010. The Prime Minister’s policy objective of ‘cheap energy’ had not materialised, not even for the fuel poor.

Thus by the end of 2005, the 2003 White Paper framework was in difficulty: on all objectives, performance was getting worse, creating the basis for a rethink – and there was no reason to believe that the policy measures in the 2003 White Paper were likely to reverse these adverse trends. Energy efficiency and renewables could not, on their own, meet the objectives. Phase I of the EU ETS was but a short-run measure and at best a learning curve and its price collapse in 2006 further undermined its credibility. As events unfolded in winter 2005/06, this conclusion was reinforced by not only the British supply crisis, but international events too.

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29 Malcolm Wicks, House of Commons, Hansard, November 23rd 2005: Column 1515 Volume No. 439 Part No. 71.

## 4. The emerging international context

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The really important development in considering British energy policy in recent years has been the extent to which the problems it is supposed to address have been internationalised. Back in the 1980s and 1990s (and indeed for much of the twentieth century) Britain could largely pursue a domestic energy policy. North Sea oil and gas rendered Britain self-sufficient - indeed, it became a substantial net exporter. In electricity generation, there was general excess capacity and, as late as 1990, this was overwhelmingly coal and nuclear, to be augmented by a home-grown dash-for-gas in the 1990s. Even climate change in policy terms was largely a domestic concern: CO<sub>2</sub> emissions fell sharply in the 1990s on the back of the closure of much of the coal industry (again caused by the domestic factor of the dash-for-gas). To the extent that there were international commitments, notably Kyoto, these too could be met as a by-product of developments in the domestic market. The closure of coal also eased compliance with acid rain policy in Europe.

After the turn of the century, this domestic good fortune reversed. North Sea oil and gas had been run down so fast in the surplus (low price) years that the prospect of net imports began to loom. Depletion policy, to the extent that there was one, focused on depleting, rather than husbanding, North Sea resources, with the result that much of its resources were depleted at a period of historically very low prices. The contrast with the approach in Norway and the Netherlands is marked.

Climate change after 2000 became a much more binding constraint and increasingly international policy began to bite - largely from Europe (Kyoto ended up being a largely European

policy through the EU ETS). With the move towards imports, particularly of gas, international pipelines became important, as did the contracting strategies for gas in continental Europe. Then there was the oil price shock from 2000. Britain had finally joined its internationally exposed rivals in continental Europe, as well as Japan and (after its own oil production contribution declined) the US. Unsurprisingly, after over a century of self-sufficiency, Britain's energy policy was ill equipped to cope. British policy-makers had begun to believe their own rhetoric: liberalised competitive markets would take care of security of supply without further changes to market design, and to the extent that a problem existed, it was because our European partners had failed to follow the British example.

Though it does not follow that international pressures can only be addressed by international policy measures – for example, strengthening domestic infrastructure in transmission and distribution improves resilience to shocks – the internationalisation of energy policy does raise a host of new issues for policy design.

The first and most obvious consequence of internationalisation is that the location of policy shifts to the domain of the public good (security of supply) or public bad (global warming). In the case of security of supply, each dimension has a different domain. For example, gas security is very much located in the European – Russian relationships, and 'solutions' involve European measures, such as increasing mutual support through gas storage, interconnections and mutual support agreements. The Hampton EU Summit Paper<sup>30</sup> and the EU Green Paper in 2006<sup>31</sup> set out some of the necessary responses (building on an earlier 2000 EU Green Paper).<sup>32</sup>

In the climate change context, significant progress can only be made when the major emitters – the US, China and India – are brought within the scope of an international agreement. The marginal impact on climate change of reduced emissions in Britain (even if these could be made) is trivial, and even the full (and unlikely) achievement of the Kyoto targets makes little difference to global warming.

It follows that attempts by Britain to adopt tough domestic climate change reduction targets can only be effective if they act as 'moral persuasion' to bring the big emitters into an inter-

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30 Helm, D.R., *European Energy Policy: Securing supplies and meeting the challenge of climate change* (2005).

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31 CEC, *A European Strategy for Sustainable, Competitive and Secure Energy*, 8 March 2006.

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32 CEC (2000).

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33 Wind turbines and new nuclear both rely overwhelmingly on imported and mature technologies.

national agreement, or provide some 'infant industry' support for non-carbon technologies which will result in competitive advantage for the British economy.<sup>33</sup> In this context, it is worth noting that it is a necessary condition for successful moral persuasion that Britain actually achieves its self-imposed domestic target (which it almost certainly will not) and that other leaders are prepared to be persuaded by this specific British action (again far from obvious). And finally, it is remarkable that the infant industry case for support has been rejected almost everywhere else in the economy on grounds of its economic inefficiency and its vulnerability to capture by vested interests.

A second consequence of internationalisation has been on the supply side. Infrastructure networks have gradually been migrating from the national to the regional level. Gas and electricity networks are increasingly European rather than national, and a similar process is taking place between the states and the federal levels in the US. Since networks provide the vehicle for both portfolio security of supply benefits and through which competition flows, the focus of network regulation (including capital investment) should similarly migrate to the regional – in the British case the European – level.

A third consequence is the internationalisation of energy companies. When the British electricity and gas industries were broken up and privatised, the companies themselves were all British. This is no longer the case. Across Europe, three dominant electricity companies have emerged – E.ON, RWE and EDF – with a cadre of pretenders to this status – ENEL, ENDESA, Suez, Gaz de France and Vattenfall. Many in the latter camp are themselves takeover targets. These three multinationals raise the sorts of problem that oil companies have traditionally tested governments with. Their market power is considerable, their ability to shift capital between markets is immense, and correspondingly the leverage of government over them is very different from the old national champions. These companies have large lobbying resources and pose a serious strategic challenge to any national government that opposes their private interests, which are not necessarily equivalent to the public interest. Perhaps only the European Commission has leverage.

And behind all of these European oligopolists lies a very

large monopolist, Gazprom, potentially one of the world's largest companies, and now with a legal monopoly over gas supplies and transmission in Russia. Whereas the British government may have once 'leaned on' British Gas to auction off its supplies to competitors and open its pipelines to third-party access, Gazprom has refused to react to such pressures, including notably the demand that Russia ratifies and implements the Energy Charter, and its transit protocol. Gazprom is one of the increasingly dominant state-owned natural resource companies, joining the national oil producers (NOPs) that now dominate world oil reserves.<sup>34</sup> In ownership of natural resources, Gazprom is the norm, not the exception.

Britain (and indeed the EU) may wish that Gazprom adopts an open-access regime and indeed breaks itself up, removes the politics from its boardroom and privatises – in other words, follows the British model. But this is not likely to happen in even the medium term. Instead, Gazprom is likely to remain in its present form, and from Britain's and Europe's perspective, it is better to assume that its networks remain closed off to competitors, and that it will continue to insist on long-term contracts to back its upstream sunk costs and as a basis for financing its investment programmes.

Furthermore, it suits Gazprom that Europe fails to develop an EU energy policy. Multiple national interfaces help Gazprom to form bilateral relations, as most notably with Germany and the North Baltic pipeline. Bilateral negotiations help Russian foreign policy too, and have exposed former Soviet bloc eastern European states. The failure of Europe to develop strategic storage is to Gazprom's advantage too, as is a fragmented pipeline network with significant national rather than European controls. An upstream monopolist with a fragmented downstream set of customers is likely to be more profitable than one with a coherent European set of customers surrounded by a common energy policy framework.

For Britain, at the end of the pipeline, these considerations are particularly pertinent, and whilst it makes sense to develop its own bilateral protection through contracts with Norway, the exposure to Gazprom will remain considerable, particularly in terms of price, where Norway is likely to be a price-follower to Gazprom's price leadership.

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<sup>34</sup> Stevens, P. 'Oil Markets', *Oxford Review of Economic Policy*, 2005, 21:1, pp. 14–42.

## 5. The twin challenges – climate change and security of supply

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The Energy Review, like its predecessor, the 2003 White Paper, is very clear about the challenges confronting energy policy. The evolution from the almost unbridled faith in markets solving energy policy problems in the 1990s, as witnessed in the 1998 White Paper discussed above, towards a more balanced approach to market failures is marked. The externality of climate change and the inability to deliver the public good of security of supply are given due emphasis.

The Review is less clear on what these challenges mean in practice, how they translate into hard, measurable objectives. Climate change cannot be avoided. It is a question of degree: how much climate change versus how much adaptation. Similarly, security of supply is not an absolute: the question is how much risk should be taken, and at what cost.

The starting point of a credible energy policy is to be clear about *objectives*. But an extraordinary feature of the Energy Review is that neither of the two challenges is addressed through well-defined targets, and, to the extent that there are even broad aspirations, these have not been subject to cost-benefit analysis. Paradoxically, there are targets for instruments, such as the Renewables Obligation (RO), but not the objectives themselves. There is much discussion as to the consequences of global warming, and a nodding in the direction of physical concentrations of greenhouse gases. As such, the Energy Review fails the most basic test of a coherent energy policy; namely, to specify what precisely the objectives are.

This lack of clarity on either of the two objectives inextricably leaves the policy prescriptions lacking credibility. For example, if the government really intended to achieve the 2010 target of a 20% reduction in CO<sub>2</sub> from the 1990 levels, the returns on low-carbon investments in the next four years should be very great. But no serious investor believes this. The 2010 domestic target is simply not credible. Beyond 2012, when the Kyoto targets run out and the current EU ETS regime ends, there is no clarity at all at either the international or the domestic level. The 2050 target of a 60% reduction in CO<sub>2</sub> has even less credibility. In consequence, the answer to the question, ‘what is the government’s objective in respect of climate change?’ is to try generally to reduce emissions. This uncertainty is not, of course, all of the government’s doing, and there is a serious question as to whether a domestic target makes any sense at all. Trying to gain an international agreement makes more sense, but here the ‘moral persuasion’ argument, discussed above, comes into play.

Turning to security of supply, again the Energy Review lists a host of challenges, yet the substance is weak. Security of supply is a system property – a public good. It cannot be simply decomposed into a question about the generation capacity margin. Yet an analysis of the probability of an interruption in supply of electricity or gas is very hard to find in the Energy Review. The further step of setting out what would be an acceptable probability is missing too: there is no specification of what the government’s preferred security of supply constraint is likely to be.

The Energy Review effectively sidesteps the defining of a security of supply objective. It does this in several linked ways. As we shall see below, the main argument is that the problem does not arise until about 2015, because officials have convinced themselves that there will be a sufficient margin until then. As a result, it is argued that there is no need for a capacity mechanism, and therefore since a capacity mechanism is based on quantities, there is no need to set clear targets. After 2015, the Energy Review is ambiguous. It identifies a ‘capacity gap’, and at least implicitly it wants nuclear and renewables to fill it, but again it is assumed that the NETA market will deliver. And because the Energy Review assumes that there is not a problem for at least a decade, it avoids addressing the question: who is

responsible for security of supply? On the networks, Ofgem is again (as in the 2003 White Paper) deemed to have this aspect under control.

Policy credibility is an important dimension of an efficient energy policy: if the private sector can rely upon a government’s commitment to a target, it can invest accordingly. But where there is uncertainty – and that uncertainty comprises political and regulatory risk – then the cost of capital rises. This is a deadweight welfare loss: it raises the costs, and because the effective discount rate for new investments is higher, it therefore makes investment decisions more short-term. Where there are competing investments with different time horizons, this distorts the choice of technique. Thus, an artificially higher cost of capital caused by uncertainty about climate change targets will disadvantage most low-carbon technologies, such as renewables and nuclear, against combined-cycle gas-fired turbine (CCGT) plants. As we will see below, the lack of credibility carries through to the design of the delivery mechanisms and the institutional structure.

## 6. Delivering on climate change

In the absence of a credible target on climate change – either internationally or domestically – the Energy Review nevertheless recognises that there needs to be a longer-term carbon price. It states that the government is committed to there being such a price, and puts the EU ETS at the heart of that price: “A key role for government is to put in place a framework which, by placing a value on carbon, provides a financial incentive for business and households to incorporate the climate change impact of their activities.”<sup>35</sup> It goes on to note: “The government is fully committed to the EU ETS – it is the best long-term mechanism for securing least-cost emissions reductions across the EU. It will remain the central element of the UK’s emissions reductions policy framework.”<sup>36</sup>

Such faith in the EU ETS as a mechanism for setting carbon prices has quite a history. Britain pioneered its own national ETS following on from the Marshall Task Force Report in 1998. Subsidies were paid to energy-intensive users to adopt more demanding targets, on the grounds that this would enable the City of London to gain a competitive advantage in carbon trading – a sort of ‘infant industry’ argument. In the 2003 White Paper, the EU ETS is placed alongside energy efficiency and renewables as one of the three main mechanisms for achieving the climate change objectives. Since the EU ETS runs until 2012, it approximates the 2010 domestic 10% target timetable, and hence the 2003 White Paper roughly lines up with this instrument.

The contribution of the EU ETS in Phase I (2005-08) has been intentionally a limited one. It is an initial trial period, with

<sup>35</sup> DTI Energy Review: *The Energy Challenge*, 11 July 2006 p. 27.

<sup>36</sup> DTI (2006), p. 30, para. 1.10.

weak caps. Its time horizon cannot affect investment decisions, and the pass-through of its costs (with ‘grandfathering’ and an element of market power) further blunts any incentives that the scheme might create. Recent price volatility reinforces this weakness.

Phase II (2008–12) is currently under consideration, with national allocation plans (NAPs) being considered by the European Commission. Across Europe, these are relatively weak too. They will make little impact on climate change. Indeed, if Europe is to meet its Kyoto targets, it will probably require the buying in of cheap Clean Development Mechanism (CDM) permits from outside, at prices significantly below those witnessed so far in the EU ETS.

Reaction to experience so far has not only blunted enthusiasm amongst some EU members, but has also shaped their views about what happens after 2012. Whilst the Energy Review takes an optimistic view, at present, there is no agreement about the next round of Kyoto targets (if any). There are therefore no post-2012 European targets for CO<sub>2</sub> reductions, and, hence, no quotas for permits beyond 2012. Thus, there is no post-2012 price of carbon.

Amongst EU Member States there are a variety of views about post-2012. Some, predominantly in the east, regard the EU ETS as a constraint on competitiveness, which is not matched by the US, China and India. As a minimum condition for accepting a post-2012 scheme, some form of cap on permit prices is proposed. Others question whether the dominant European energy companies have exploited market power to profit from the scheme. There have been calls for windfall taxes.

The absence of targets, the lack of agreement about the EU ETS in principle, and the expectation that not much will be agreed until at best 2011 sit in stark contrast to the Energy Review’s central faith in the EU ETS. The Energy Review recognises, on the one hand, that long-term investment requires a long-term price of carbon, and identifies an ‘energy gap’ after 2015; on the other hand, the EU ETS is unlikely to provide a price signal until at least 2011, which is too late for at least some, perhaps most, of the investment decisions – especially for nuclear power.

In effect, the Energy Review proposes the *possibility* of a

floor price to the scheme, without suggesting what conditions would lead to the implementation of the floor, how it might be designed, and how it would be compatible with a future EU ETS Phase III. This ambiguity creates its own problems. If the government would introduce a long-term carbon price floor if there were insufficient investment in low-carbon technologies (including nuclear), why would anyone invest in these technologies now since, if they did, there would not be a long-term price put in place?

More generally, there is scant recognition of what an EU ETS post-2012 might look like, if it does indeed continue. Faith is placed in the existing scheme, but there is no analysis of the effects of possible design changes. At the high level, these include the setting of quantity targets in the absence of an international post-Kyoto set of targets if China, India and the US remain outside quantity caps. Then there is the question of the functioning of the EU ETS with both a ceiling and a floor, with the incentives that would result. There is the setting of the NAPs, information provision, monitoring and penalties for the carbon market, as well as the contributions of CDM and Joint Implementation (JI).

Having recognised the need for (but not delivered) a long-term price, the Energy Review then introduces a host of other measures to address climate change. They are needed because there is no long-term price of carbon and because the supported areas would be unlikely to survive at their current levels if they faced a level playing field – even after the oil price has risen from the 2003 White Paper assumption of \$25 to over \$70 a barrel.

These other measures are claimed not to ‘pick winners’, an approach the Energy Review explicitly rejects. Yet that is precisely what the Energy Review then does. Amongst the technologies picked out for special treatment are nuclear, renewables and energy efficiency, and the hint of special measures for carbon capture and clean coal. We deal with nuclear below in chapter 8. On renewables, it is recognised that the policy so far has been largely focused on wind, and therefore, for practical purposes, the RO is a ‘wind obligation’. The Energy Review recognises that this has been an expensive policy – with limited success. The costs are not only the RO itself, but also £800m

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37 DTI (2006), p. 98, para 5.2.

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38 DTI (2006), p. 99, para 5.24.

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39 DTI (2006), p.44, para 2.28.

of public funding.<sup>37</sup> Offshore wind is currently proving more expensive than anticipated.<sup>38</sup> The results have been disappointing too: not much capacity has been delivered.

This recognition could lead policy development in one of two directions. The first would be to gradually phase out the RO (having honoured existing commitments), and to replace it with a *general economic instrument* along the lines of the long-term price of carbon. Renewables could then be placed on the same basis as nuclear, and other low-carbon technologies, and indeed the sharp distinction between low and zero emissions would be removed, thereby reducing the costs of meeting the carbon targets. (There is no equivalent nuclear obligation.) The second possibility is to further refine the RO. This is the preferred route for the Energy Review, which proposes extending the RO to 20% for 2020, amending its operation to deal with the incentive problem of potential oversupply, but also to cap the buy-out price in nominal terms for the extension period. Finally, banding is introduced. Since each band will need to be defined (and policed), the inevitable result will be for officials to rank technologies and thereby ‘pick winners’ on the basis of the government’s (not the market’s) *ex ante* assumptions about costs. It will, no doubt, provide a rich harvest for lobbyists, and it fails to learn the principal lesson from the history of energy policy that governments are very poor at predicting costs and returns from specific technologies. It was, after all, this lesson which ushered in the ‘market for energy’ approach in the 1980s and was endorsed in 1997 by the incoming Labour government and thereafter.

The final part of the carbon policy is energy efficiency. This is an area of policy which has promised much, and delivered less. The 2003 White Paper was based upon the premise that there were a very large number of projects that already had a positive net present value. In the PIU report, this claim had been made to support a binding 2020 target for energy efficiency achievements. Following the 2003 White Paper, it rapidly became apparent that such improvements were not forthcoming on the scale envisaged, and there was pressure for further fiscal measures, including Treasury funding.<sup>39</sup> But, given the claims about the positive net present values, the Treasury instead encouraged a further review of energy efficiency, the *Energy*

*Efficiency Review 2005*.<sup>40</sup> In the Energy Review, the optimism about energy efficiency is repeated, and the ambitions remain high.<sup>41</sup> The Energy Review contemplated that “an absolute reduction in energy demand in the longer term may even be possible”.<sup>42</sup> Energy supply companies are to be encouraged to become energy service companies, but there is little by way of guidance as to how this is to come about. As with the long-term price of carbon, the gap between these ambitions and the delivery of outcomes is very large.

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40 HM Treasury, *Energy Efficiency Innovation Review – Summary report*, published in association with The Carbon Trust, Defra, and the Energy Saving Trust, December 2005.

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41 DTI (2006) ‘Many energy efficiency measures can be cost-effective’, para 2.5, p. 37.

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42 DTI (2006), p. 36.

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43 DTI (2006), p. 92.

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44 DTI (2006), p. 94.

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45 DTI (2006), p. 94.

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46 DTI (2006), p. 94.

## 7. Delivering on security of supply

The Energy Review is somewhat schizophrenic on security of supply. Prior to 2015, and despite the shock of last winter’s tight supply/demand balance, and the experience of the Ukrainian episode, the Review remains confident in terms of the ability of existing measures and markets to deliver greater security of supply. After 2015, it switches tack, and is less sanguine: “In total, the UK is likely to need around 25GW of new electricity generation capacity by 2025, equivalent to more than 30% of today’s existing capacity.”<sup>43</sup>

Indeed, the Energy Review states quite categorically that: “we are unlikely to face such risks before the middle of the next decade”, claiming that the current market design provides appropriate incentives to invest, and that there is no capacity problem until at least 2015.<sup>44</sup> Between now and 2015, “there is plenty of time for the market to respond to these developments with new investment”, and additional capacity is assumed to be incentivised by NETA.<sup>45</sup> The Review categorically states that: “the modelling also indicates that in most scenarios, the risk of having unserved electricity demand is unlikely to become substantively higher than today until around 2015. Even then, the amounts of ‘shortfall’ between demand and supply would likely be small and could therefore potentially be resolved by some companies voluntarily shifting their use from peak to off-peak times in response to price signals.”<sup>46</sup> There is no need for a capacity mechanism, nor for strategic storage of gas, although these are to be kept under review. Network investments are similarly not a problem going forward, despite the obvious network constraints last winter, as discussed above. Ofgem,



through the transmission reviews, will address the appropriate levels of capital investment, and by implication the Energy Review rejects the claim that past Ofgem reviews have placed too little emphasis on security of supply considerations, and too much on sweating the assets.

The Energy Review thus makes the remarkable statement that: “We judge that, whilst recognising the risks associated with our existing market framework, the case for intervention on grounds of security of supply has not been made. This is especially true given our understanding that *the system appears very robust to fluctuations in supply and demand under most scenarios at least until 2015.*”<sup>47</sup>

In particular, a capacity mechanism “would impose significant costs and some risks on the systems and, ultimately, the final customer.” Such mechanisms “can have unintended and often undesirable side-effects.”<sup>48</sup>

If all is well with NETA, which is the default position if there is no intervention, and all is well until 2015, the question then arises: why is there suddenly a problem after 2015? It cannot be the scale of the investment required, since NETA provides the marginal incentive. It cannot be the timing of the investment, because there is no need for a capacity mechanism. And it cannot be the long-term price of carbon, because “we will keep open the option of further measures to reinforce the operation of the EU ETS in the UK if this should be necessary to provide greater certainty to investors.”<sup>49</sup>

So one is left with the logical conclusion: security of supply will look after itself. It may be that security of supply is one of the two main challenges the Energy Review identifies, but it is a challenge which can be left to the current market design to deliver. The ‘energy gap’ after 2015 – the 25GW – is merely another challenge for the market to deliver.

This complacency is politically naive, and also lacks a coherent logic. It is politically naive because it exposes politicians, in the event that this Panglossian world turns out to be rather less attractive, to culpability. Indeed, the fact that the DTI was unable to foresee even the short-term crisis of the last winter should have given pause for thought. (None of last winter’s difficulties were anticipated in the 2003 White Paper. Indeed, on the contrary, expectation was reflected in its treat-

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47 DTI (2006), p.95, para 5.5, italics added.

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48 DTI (2006), p.95, para 5.1.

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49 DTI (2006), p.96, para 5.12.

ment of security of supply.)

But in economic terms, there are the obvious questions which it might be expected that the Energy Review would at least have addressed, such as: why the NETA market design should lead profit-maximising investors to provide excess supply (which is necessary for security of supply)? And why the market should produce an appropriate level of diversity? To these might be added questions about the incentives to buy into long-term contracts. A simple analysis of an oligopoly with market power, operating under NETA, might suggest that a ‘tight’ market without a capacity market would maximise the returns to existing assets.

The analysis of the capacity mechanism is correspondingly weak. On this, there is a considerable literature and a lot of experience. The conclusions (but not the analysis) are reported in the Energy Review. It is claimed that not only is such a mechanism unnecessary, but it might also lead to unintended, bad consequences. It is hard to identify what exactly the unintended consequences might be (in part because they are unintended) and no reason is given for assuming that they will necessarily be bad.

## 8. The nuclear question: a level playing field or a pro-nuclear policy?

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Much of the Energy Review is, of course, about nuclear power, and as noted above one interpretation of the Review is as a political process to gain greater acceptance for nuclear power generally in the public, media and political domains, before proceeding to the replacement of the existing nuclear capacity. As such, it can be argued that the Energy Review is really all about changing the climate of opinion rather than a statement of policy.

There is merit in this explanation – there has undoubtedly been a more substantive debate about nuclear power, and as a result a greater acceptance of new build, over the last six months of the Energy Review process. Opinion polling data confirms this. Nevertheless, the Energy Review purports to provide the basis for the private sector to invest in nuclear power, by addressing the four main planks to this ‘level playing field’: the long-term price of carbon, planning, licensing, and waste.

The first point to make is that this list is broadly correct: it includes the main issues and does not leave anything substantial out (except making explicit the terms of access for competitors to the existing nuclear sites), as long as the government’s overall policy is that nuclear new build is a matter for the market to decide, not the government. (We return below to whether this assumption is a correct description of the government’s policy and its implications).

### The long-term price of carbon

We noted above that the position is incoherent: yes, the government believes there should be a long-term price of carbon to inform decisions now about nuclear new build; and, no, it does not provide a long-term price of carbon, nor explain how the EU ETS Phase III is likely to be agreed ‘urgently’, or indeed at all.

The implication is far from a level carbon playing field. The other non-carbon technologies have much less uncertainty, they have the RO, subsidies and the special treatment under the Climate Change Levy. There is, in contrast, no Nuclear Obligation – precisely because the nuclear policy is to leave decisions on new build to the market; whereas, for renewables, under the RO the quantity and buy-out price are fixed by the government.

### Planning

On planning, it is hard to see what the Energy Review adds. The central ‘problem’ for planning decisions in nuclear, as witnessed at the Sizewell and Hinkley Point inquiries in the 1980s, and subsequently for BAA’s Terminal 5, is that the judgement of ‘need’ is not made centrally, and therefore has to be justified on a case-by-case basis at each inquiry. The result is greater inquiry costs and delays. The costs are however small relative to the project size and total budget; in the case of delay, the problem arises only if there is ‘urgency’. However, the government cannot be ‘urgent’ about nuclear new build if it intends to leave the decision to the market - unless it believes that planning delays are binding constraints. Again, however, from the private sector’s perspective (but not the government’s security of supply and CO<sub>2</sub> perspectives), just why delays and therefore a later start are problematic is not explained. Furthermore, it is not explained why these problems are so grave for nuclear projects but not for gas CCGTs and other technologies. Planning seems to be a special problem for wind farms, nuclear power stations and large transport projects – and this is not surprising: they all raise substantial public interest issues, are controversial and have core political elements.

The private sector investors do not have the constraints of government. Indeed, the tighter the security of supply con-

straint, the higher the price of electricity and therefore the greater the net present value of existing plants and new investments. Similarly, the greater the CO<sub>2</sub> problem, the higher the price of carbon, and the greater the net present value of new investments. Paradoxically, nuclear economics, on this basis, actually improves over time, offsetting some or all of the costs of delay.

Turning to the precise proposals to tackle planning constraints in the Energy Review, the central idea is to issue a ‘statement of need’ (which is drafted in the annex A):

*“Nuclear power is a source of low carbon generation which contributes to the diversity of our energy supplies. Under likely scenarios for gas and carbon prices, new nuclear power stations would yield economic benefits in terms of carbon reduction and security of supply. The government believes that nuclear has a role to play in the future UK generating mix alongside other low carbon generating options. Evidence gathered during the Energy Review consultation supports this view.”*<sup>50</sup>

The statement itself is rather baffling. For example, how do “likely scenarios for gas and carbon prices” (italics added) yield ‘economic benefits’? And if there is a causal connection, what happens if carbon prices fall to the world CDM price, or gas prices fall sharply? To have a statement of *need* on the *contingency* of market prices is open to obvious challenge.

The statement of need is apparently to take the form of a further White Paper. Just how a White Paper ‘solves’ the planning problem is very hard to gauge. In the 1980s, there was a parliamentary statement on the need for the PWR programme, but this did not constrain Sir Frank Layfield at Sizewell. There have been innumerable White Papers on transport, infrastructure and indeed energy without solving the planning question.

This in turn naturally raises the question of legislation – of reducing the general powers which date back to the Town and Country Planning Acts in the early post-Second World War period. With two other Treasury-led planning policy reviews under way (the Barker Review, Phase 2 due shortly and the Eddington review on long-term transport), there is a broader political head of steam behind ‘doing something about planning’. But previous parliamentary attempts have failed, and on

50 DTI (2006), p. 113.

51 Siedentop L, *Democracy in Europe*, (London: Penguin Books, 2001), p. 108.

52 Siedentop L (2001), p. 107.

53 Committee on Radioactive Waste Management, *Managing our Radioactive Waste Safely: CORWM’s recommendations to Government*, July 2006.

at least two bases. First, in a geographical constituency system, MPs faced with major projects in their constituencies are reluctant to reduce the local powers to oppose. Second, there is a constitutional question about the powers of central government in what is already a highly centralised state. The House of Lords has traditionally reflected this concern. Changing the powers in respect of planning is not merely a technical exercise to make nuclear power easier to deliver; it raises substantive constitutional issues of profound democratic importance. Siedentop makes this point when he illustrates how the design of the French state and, in particular, its highly centralised and bureaucratic form, allowed executive power to move ahead with its nuclear power programme in the 1970s: “the contrast with the serious obstacles placed by constitutional arrangements, courts’ decisions, public protests and interest group manoeuvring in countries such as Britain or the United States could hardly be greater.”<sup>51</sup> Moving towards “a more powerful administrative machine at the disposal of the French elite” is not necessarily the kind of democratic accountability Britain might wish to emulate, and indeed it is a form, which is widely resisted in respect of the EU by the British.<sup>52</sup> Clearing away obstacles to planning has much wider, often unintended consequences for democracy.

To these two obstacles to a nationally directed nuclear programme, a third can be added – public acceptability. Not only is there a strong argument for subjecting new nuclear power stations to a rigorous local scrutiny (especially given the special nature of the risks to local communities and the long life of the waste), but there is also the curious conflict between the desire to fast-track new build, on the one hand, and on the other hand, the need to get local buy-in to the location of waste depositories set out in the Committee on Radioactive Waste Management report (see below).<sup>53</sup>

### Licensing

Following on from the long-term carbon price and planning, the Energy Review turns to licensing. Here the practical suggestion is made that there should be an element of generic technology pre-licensing. This is not a novel idea however, and indeed it fails to draw out the lessons from the history of nuclear power in Britain. Looking back, Sizewell B was the first PWR.

Hinkley C, which followed, was based on the same PWR technology, and was consequently altogether more straightforward. Before Sizewell B, almost every AGR was sufficiently different from its predecessor as to require a ‘first-of-a-kind’ approach for each one. Just what constitutes a ‘generic’ technology and what modifications to designs constitute sufficient innovation to merit re-licensing are far from obvious. All nuclear programmes evolve designs as they learn from experience and gain from new research.

What the Energy Review is implicitly assuming on the licensing front is that there will be a series of near identical reactors built in Britain (unless, of course, it is imagined that a whole set of different technologies could be simultaneously licensed). This would mean that the Health & Safety Executive/Nuclear Installations Inspectorate could license the first (taking, on their estimates, perhaps three years) and then subsequent licensing would be much simpler. But for this to be true, they have to be similar, and there is an obvious tension here with the Treasury’s desire for competition in reactor design and build. From the licensing perspective, unfortunately nothing in the Energy Review implies that the multiple design and type approach of the past will not be repeated. The French solved this difficulty historically because they had a centrally planned programme, with close vertical links between reactor designers, builders and operators, and a state-owned EDF monopoly to deliver and pass through the costs. The British market approach, whatever its merits, militates against this, and hence there can be no guarantee that the Energy Review proposals will really solve the licensing problem.

### **Waste**

Finally, there is the problem of waste. The government has relied upon the CORWM to solve this, accepting that there can be no new build without a solution to the long-term waste problem. The CORWM report does not however solve this in any but the most general of ways. It agrees with the internationally preferred approach – a deep depository – but then provides little guidance of how to get from here to there, leaving this instead to a proposed new body. The waste ‘solution’ for new material from new nuclear will be interim storage too, since the

deep depository is decades away. All we have really learnt from the CORWM report is that, on present knowledge, the deep depository should be sealed. Whether this finding will hold in the decades of designing and planning ahead remains to be seen. And where it will be, how it will be constructed, what its timeframe is – all these questions are left open. And crucially, who should pay is left open too. Would new nuclear pay some of the capital costs of digging the hole, or, since the hole has to be dug anyway for old waste, would it just pay marginal cost?

As a result it is hard to conclude that the CORWM takes the waste issue much further forward. Its main achievement, like the Energy Review itself, has been to encourage a public debate and get the public, media and politicians more comfortable with the idea of eventually taking a decision about what appears to be the only serious option, burying the waste in the ground.

These four steps are therefore at best very tentative, and it is probably better to conclude that the Energy Review has served to highlight the issues rather than provide answers. The political question for the government is whether they are sufficient for the private sector to bring forward a project and apply for a licence. In one sense, this appears relatively straightforward – compared with the costs of building a new station, and indeed a series in due course – the process of getting a licence is a low-cost activity with little risk attached. For the three large European utilities which dominate the British market, it is not particularly significant. But in another sense, this is a game of poker. If no projects now come forward, what will the government do? For example, will it then have to deliver a long-term price of carbon, as discussed above in chapter 6? If projects are proposed in the absence of a credible carbon price, the government might conclude it does not need to do any more on carbon pricing. Then there are possible concessions on the other three issues:

- on planning (the government could undertake to bear some of the costs)
- on licensing (again the government could subsidise these)
- and on waste (where the government could persuade the Nuclear Decommissioning Authority to charge on a more marginal cost basis).

Having signalled it wants a new nuclear programme – that there is a ‘need’, the cards are very much in the investors’ hands.

These considerations bring us to the crux of the Energy Review, and its central dilemma. The key question is: does the government just want to level the playing field for nuclear; or is it committed to nuclear new build? A careful reading of the Energy Review’s analysis leads to the conclusion that lurking in the background is a desire to make the case for nuclear. Whilst, on the one hand, it is for markets to decide, on the other ‘the government believes nuclear has a role to play.’ The capacity gap, the international security of supply risks and, most of all, the carbon constraint lead the government to the conclusion that there is no real alternative to including at least replacement new nuclear in the energy mix. This is reinforced by the tortuous attempt to show that it is ‘economic’ on the basis of current oil and gas prices, but then not actually say that officials are picking it as a ‘winner’. On the one hand, “the government does not take a view on the future relative costs of different generating technologies,” whilst on the other providing cost estimates which purport to show that it is likely to be economic.<sup>54</sup>

The corollary of this interpretation of the Energy Review is to set alongside the analysis a scenario whereby no nuclear is built. The government would, on its own analysis, then face serious climate change and security of supply difficulties, and could not achieve even the vague targets set out in the Energy Review. If instead of replacing the retired nuclear plants with nuclear, gas or even coal were built, the CO<sub>2</sub> increases would be likely to undermine any credibility on climate change policy. It is hard therefore to conclude that the government could now stand by and allow a scenario with no new nuclear build to emerge, even if, elsewhere, it is happy to rely on the NETA market to achieve security of supply.

The Prime Minister’s foreword to the Energy Review makes this clear: “Neither renewable energy nor greater energy efficiency can provide the complete solution to the shortfall we face. This will depend on securing energy supplies from abroad, in new nuclear power stations to replace those becoming obsolete and replacing older coal-fired stations with cleaner, more efficient technology.”<sup>55</sup> Alistair Darling’s Preface adds further that: “If we do nothing, the reality is we will have to

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54 DTI (2006), p113, para 5.96.

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55 DTI (2006), p. 5.

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56 DTI (2006), p. 8.

rely increasingly on gas. The government believes nuclear has a role to play in the UK not only in reducing emissions but also to maintain the diversity of our electricity generation mix.”<sup>56</sup> Presumably diversity matters because it has an impact on security of supply, and presumably NETA does not provide this.

The government therefore will need to build on the Energy Review and give further incentives to ensure that the programme is delivered, unless of course it just happens to get lucky and the private sector does it anyway. But the private sector can understand this logic too, negotiating further concessions is analogous to shooting at a relatively open goal.

The most extreme form of the ‘open goal’ is a nuclear obligation (which might be given the unfortunate acronym NO), with cost pass-through to final customers. This could be achieved explicitly along the lines of the RO, with perhaps a buy-out price or implicitly by encouraging an implicit collusion, whereby all main suppliers sign up to proportionate long-term contracts with nuclear suppliers. The NO approach has merits; it delivers the programme, it lowers the cost of capital, and it puts nuclear on a level playing field with renewables. But it has demerits too, like the RO, in its lack of efficiency incentives and the picking of winners.

Were there to be a NO, the electricity market would have lost another element of the competitive and liberalised markets approach which the Energy Review claims as a merit. Already there are lots of interventions on technology choice. If nuclear is added to the RO, considerably more investment is technologically determined. If clean coal is supported too then what is left for the market – and NETA – is effectively gas. Analogous to an onion, each technology ring is fixed, and the public ‘spin’ of ‘competitive markets’ is replaced by the gradual picking of winners. In effect, the ‘market’ is confined to CCGTs operating under a residual NETA market. If all nuclear is replaced, and 20% renewables is added too, then marginal investment incentives are constrained by the government-driven capacity overhang. The determinant marginal investment decisions are made by government, whilst maintaining the fiction (and spin) of a competitive market-driven approach. It is a process of the gradual encroachment of planning and picking winners, without any decisive decision to do so.

## 9. Institutions

The Energy Review as a political process is understandable, but as a detailed policy design it adds very little. The reasons for this are numerous, but one stands out – the lack of an effective energy policy institutional framework and the expertise that goes with it. The DTI tries to combine policy formation with delivery, but in a highly constrained context, and in two ways.

First, the Treasury towers over it, intervening in almost all aspects of the policy formation. Indeed, this process of Treasury domination of energy policy has gone so far as for the Treasury to have issued a consultation paper on clean coal technology.<sup>57</sup> The Treasury controls the planning policy issues, and it controls the Climate Change Levy. (Defra is not immune to this process either, it has had the Treasury reviewing energy efficiency too). Indeed, the Treasury's hand in particular, in the lack of a long-term carbon price mechanism and the insistence that there should be no public money for nuclear (but more for renewables and energy efficiency) is all over the Energy Review. The implication is that the DTI is not permitted to carry out its core function, the formulation of policy. There is no single focus in government and the result of diffuse policy formation is that the level of expertise being brought to bear on the actual decisions is limited. The Treasury, being a general department, is unable to build up this expertise, but unwilling to allow the departments with the expertise to decide. In this context, it is notable that neither the PIU nor the Energy Review were given to the DTI to lead.

Second, to the extent that it does try to formulate policy, the DTI is vulnerable to lobbying. This takes the usual form from the private sector, but it is also exposed to the lobbying of all the organisations and public bodies that have been created by

58 Helm, D. R., Hepburn, C., and Mash, R. 'Credible Carbon Policy', *Oxford Review of Economic Policy* 2003, 19:3, pp. 438–50., and Helm, D. R. *A New British Energy Policy*, (London: Social Market Foundation, 18 October 2005).

57 HM Treasury, *Carbon capture and storage: a consultation on barriers to deployment*, March 2006.

successive governments. Thus the Energy Saving Trust lobbies for greater energy efficiency targets and more public spending. The Carbon Trust similarly pursues its interests in technology and in hypothecating revenues. Ofgem weighs in with its own corporate ambitions. Energy research bodies add pressures too. As a result, it is hardly surprising that the DTI (and Defra) have been captured in the policy process, and this is reflected in the way in which evidence is incorporated in the results. Appraisal optimism about energy efficiency and the costs of renewables is in the interests of the Energy Saving Trust and the Carbon Trust, and the new industries which look to these intermediary bodies to give them grants and special treatment. Rejection of capacity mechanisms is in the interests of incumbent generators which make more money from a tight market and would be vulnerable to excess supply. Similar reasons apply to the upstream oil and gas companies' opposition to strategic gas storage. Indeed, a comparison of the main outcomes of the Energy Review with the interests of the different organisations is instructive in showing how the politics of energy policy works. The political success of the Energy Review can be measured in what I have elsewhere called the 'smarties for everyone' approach – making sure that each interest group gets a 'pay-off' so that the broadest tent of support is created. Economic success is a rather different matter.

The obvious solution to this perplexing array of frequently overlapping bodies is to bring them together in a single delivery body – an energy agency – so that the conflicting claims are forced into a single board for resolution. Other sectors manage these issues much more effectively, notably in aviation with the Civil Aviation Authority.

The case for an energy agency has been made elsewhere.<sup>58</sup> But the point of relevance to the Energy Review is that, despite so much left for subsequent development and delivery, from the long-term price of carbon, the EU ETS Phase III, the international negotiations on security of supply, planning, licensing, waste, and renewables banding to name but a few, there is no effective delivery body. Instead the Energy Review proposes an *additional* body – an Office of Climate Change.

## 10. Completing the review process: towards a sustainable and credible energy policy

A credible energy policy is one that has clear credible objectives, which are easily understood, and which are addressed through well-targeted policy instruments. The credibility comes not from repeated assertions about general aspirations, like doing something about climate change and making sure the lights do not go out, but rather from objectives which can be measured and for which there is a mechanism for ensuring that the instruments are adjusted as and when there is any serious deviation.

The Energy Review makes some progress towards credibility, but not much. Its main advantages are that it admits at least implicitly that the 2003 White Paper is not well designed and that it is unlikely to achieve any of the four main objectives on CO<sub>2</sub>, security of supply, fuel poverty and competitiveness. Not much progress can be made until the scale of that failure is recognised – that all four are not just missing their targets, but actually going in the wrong direction.

In raising the questions, it is perhaps too much to expect that the Energy Review would provide the answers, particularly when so much of the review process was taken up with a highly charged debate about one technology – nuclear. The areas where the answers are most obviously missing are not, however, those on which subsequent debate has focused. These are the definition of objectives and the provision of an institutional framework to ensure they are achieved. The job of the DTI is to formulate policy – and on this it has been hamstrung by the Treasury on the one hand, and lobbying by the myriad bodies

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59 CEC (2006).

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60 Helm (2005).

and organisations which have been created, on the other. That policy starts with defining what the government's objectives are for climate change and security of supply. On both there are no credible answers: on climate change, there is no post-2012 framework, and the 2010 domestic 20% target is non-credible. On security of supply, the DTI claims there is not really a problem until 2015, and in any event there is no need for capacity mechanisms or other substantial measures, so presumably the market will continue to deliver thereafter. It is practically silent on networks and whether they are fit for the low-carbon purposes or the international dependency. There is no discussion of who is responsible for security of supply. Since the Review sees no real problem, it does not therefore consider it needs a policy.

It is important to recognise that both these objectives are European and international in dimension. Climate change is a global problem, and there are no credible global objectives. Kyoto does not provide this, and indeed achieving its (largely European) targets would not amount to much in any event. On security of supply, most of the critical elements – gas supplies and pipelines, interconnections, strategic storage and mutual support – are all European. Thus, for both main objectives of policy, energy policy is largely an international affair. In this context, the European Green Paper,<sup>59</sup> building on the Hampton Court Paper,<sup>60</sup> deserve centre stage in the Energy Review, which it does not get.

Without credible objectives, it is hard to make sense of the policy instruments in the Energy Review. The great merit of the Review is that it claims to recognise two core principles: that it is the (long-term) price of carbon that matters; and that the government should be technology-neutral. But then it very clearly fails to provide the former, and in respect of the latter it is very technology-biased. It is right about both. The obvious improvement to be made is to deal with these: to provide a long-term price of carbon and to get away from technology bias. In the former case, the options are well known- carbon contracts or carbon taxes – and the EU ETS Phase III is far too far in the future to suffice. In the latter case, the playing field is so obviously not level between nuclear and renewables, the one without an obligation and the other with the RO and the proposal to 'band' renewables is wide open to lobbying and 'pick-

ing winners?

In the nuclear domain, the Energy Review is neither a market-based approach which genuinely creates a level playing field, nor an intervention to deliver a new nuclear programme. As we have seen, the statement of need reflects this ambiguity. Here there is a clear policy choice: to go down the market route properly (which requires addressing the RO and the CCL treatments so that all low-carbon technologies compete fairly, and to generate a long-term carbon price); or to impose nuclear and give it an obligation. The former is the most efficient route; the latter at least minimises the cost of capital. The current policy is a muddle, creating regulatory and political risk and hence raising the cost of capital, to which nuclear solutions are particularly sensitive.

These considerations provide a clear agenda for the forthcoming White Paper, and a credible policy framework. The main components are:

- to define the objectives
- to create market-based instruments (including, preferably, longer-term carbon contracts, and capacity mechanisms and strategic storage)
- and to create a single energy agency.

Such a credible policy framework has at its core a European and international component, and implementation of the EU Green Paper proposals would provide an umbrella within which British energy policy could be nested.

The alternative is to repeat the muddles in the 2003 White Paper and in this Energy Review: no clear objectives; no long-term price of carbon; no capacity markets; no strategic storage; and ambiguity on the need for nuclear. The choice is between a market-based approach, a planned approach, and a mix of the two. Of these, the first is much superior (for many of the reasons set out in the 2003 White Paper and the Energy Review); the second risks cost inefficiencies, and capture. But the third is the worst option. It remains to be seen which route the White Paper takes. As the constraints on CO<sub>2</sub> and security of supply get ever tighter, the price of creating a political energy policy with 'smarties for all' becomes economically ever greater.





