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Return of the P-word: the Government's Electricity White Paper

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Introduction

The P-word is back – the Government's latest White Paper on electricity market reform (published on 12 July) is entitled *Planning our electric future*. For many decades, planning seemed to have been dropped from the electricity policy maker's tool kit, indeed to have become something of a dirty word, but it has now returned, and apparently without shame. In a way, this is not a surprise – successive OIES publications, Comment pieces and presentations over the past few years have described the previous Government's attempts to reconcile its belief in competitive markets with its commitment to environmental targets. These attempts were never convincing – an earlier Comment piece concluded that the 2006 Energy Review “fails to address the fundamental question of how energy policy objectives can be implemented in a liberalised market” and in 2009 a presentation warned that “the end is nigh” for electricity market liberalisation. So the fact that the Government now regards itself as responsible for planning our future electricity system may just be the inevitable conclusion of a painful journey.

The Government is facing two big problems in this area; the first is decarbonising electricity. It has accepted the advice of the Climate Change Committee that the system must be low carbon by the 2030s (with some wiggle room around whether this means emissions of less than 100 or less than 50g/kWh and whether the target has to be achieved by 2030 or at some stage during the following decade). But it also faces a potential security issue – a large number of current plants are due to retire from the middle of this decade either because of environmental regulation (as will be the case with many coal plants, under the Large Combustion Plants and Industrial Emissions Directives) or because they will reach the end of their permitted lives (most nuclear plants). This will lead to the closure of around one third (according to most commentators) or one quarter (according to the Government) of our generating plant over the next decade. The two problems coalesce in the challenge of providing incentives for the necessary new investment, the scale of which is enormous –

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around £110 billion. The Government has concluded, along with most commentators, that “current electricity market arrangements are not likely to deliver the required scale or pace of investment” and that reform is therefore required.

The Proposals

The market reform proposals on which the Government has been consulting since last December have four main elements:

- **Long term contracts** for investors in low carbon electricity generation
- A **Carbon Price Floor** to improve incentives for such generation.
- An **Emissions Performance Standard** to regulate the performance of new fossil plant.
- A **Capacity Mechanism** to remunerate providers of generating capacity and ensure system adequacy.

The dominant theme underlying these measures is the need to reduce investment risks, especially for low carbon investment; it is hoped that this will both help ensure the necessary investment is brought forward and reduce the costs of meeting the Government’s environmental targets by lowering the cost of capital.

Long term contracts These are usually described as Feed-in Tariffs, by analogy with the form of support for renewable energy used in many European countries, but the White Paper makes it clear that they will be contracts between generators and a “contract counterparty” whose precise nature and mode of operation is yet to be determined. The Government’s preferred form of contract is described as a Feed-in Tariff with a Contract for Difference (FiT CfD). This would remove market price risk by paying generators revenue based on a contractual “strike price”. The generator would still sell into the market. However, when the market price was below the strike price, the counterparty would top up the difference. In principle the same would happen in reverse; if the market price was above the strike price the generator would pay the difference to the counterparty. The price guarantee should reduce risk for low carbon generators, and therefore encourage more investment. In addition, since nearly all forms of low carbon generation are highly capital intensive, the guaranteed revenue should reduce their cost of capital, and thus the cost of moving to a low carbon system. (Interestingly, at least on the Government’s figures, the benefit is greatest for nuclear generators.) The Government is proposing two different forms of FiT CfDs – for intermittent and baseload generators (mainly wind and nuclear respectively) but many details, in particular on the institutional structure, remain to be sorted out.

Government Ministers have sold the CfD approach as a benefit to consumers, as well as to generators, on the basis that they will be shielded from the impacts of fossil fuel price volatility, but the White Paper’s small print points out, rather more fairly, that “A FiT CfD ... effectively commits consumers to decarbonisation by establishing an implicit contract with generators whereby consumers, in order to meet these targets, forsake the opportunity of



low bills in the future if gas prices were low”. This may or may not be “welfare neutral” as the White Paper’s Impact Assessment suggests, but it certainly implies that decisions about consumers’ welfare will be made by the Government, not the consumer, contrary to the original goals of liberalisation.

Carbon Floor Price The White Paper suggests, rather unconvincingly, that its proposed Carbon Floor Price “builds on” the EU’s Emissions Trading Scheme, but in fact it represents a judgement that the carbon price under that Scheme is too low and too unpredictable to provide incentives for low carbon generation and must therefore be supplemented. The Price Floor will top up the ETS price to a predetermined level, rising to £30/CO₂ in 2020, then to £70 in 2030. The aim is to provide “an early and credible long-term signal to investors that the Government is serious about encouraging investment in low-carbon electricity generation”. Whether or not it will do so is uncertain. Long term commitments on taxation rarely last; the erratic history of the fuel duty escalator and the 50% income tax rate introduced last year being but two examples of policy changes in response to changed circumstances. Furthermore, the floor price appears to have no particular economic logic – it is not designed to incorporate the externality cost of carbon emissions but to incentivise the sort of investment the Government would like; there must be a suspicion that it is designed partly to raise revenue and partly to push up the electricity market price, so reducing the amounts payable under the CfDs described earlier (thus making support for nuclear less visible and controversial). The small print is again revealing about whether these will indeed be credible long term signals – the calculations performed by the Government’s advisers incorporate a degree of investor myopia; investors are assumed to show foresight of only five year in relation to the carbon price. So the question remains of why exactly the Floor Price is needed to support investment, given that the FiT CfDs already perform that function.

In addition, there are a number of disadvantages to this approach:

- It gives **windfall profits** to existing low carbon generators (including imports from France) by pushing up the market price for electricity.
- It directly undermines the **ETS** aim of providing a single carbon price signal across the EU and by implication condemns the ETS as not a credible instrument.
- It also undermines the **ETS** indirectly; by reducing carbon emissions in the UK beyond the ETS targets it will have some effect in lowering ETS prices across Europe.

Emissions Performance Standard This would be a specific performance limit on new fossil generation which the Government proposes to set at a level “equivalent to 450g/kWh at baseload”, which appears to mean that it will operate on an annual, rather than hourly, basis. Given that this will permit efficient gas-fired plant, and that there is already a requirement that no new coal-fired stations are built without Carbon Capture and Storage, the rationale for the measure is again a little unclear. The White Paper uses terms like “regulatory back stop” and “reinforce[ment]” of existing requirements but elsewhere the aim is set out somewhat

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elliptically as to “give a clear regulatory signal” for the long term. This seems to point to possible future uses such as, for example, “to require full CCS on some or all new fossil fuel plant”. Furthermore, while not aiming to make the EPS retrospective, the White Paper proposes that it be time-limited. This approach could well be designed to enable the Government to encourage the early building of new gas-fired plant to overcome the tight supply situation expected later this decade, but subsequently to require retrofitting of CCS on that plant, once it had operated for long enough to have covered its investment costs (or force it to operate for peaking purposes only). That makes sense in terms of both security and the environment but may well be less attractive to investors (and consumers, who will pay the price).

Capacity Mechanism This is the least developed part of the proposals; the Government presents two very different options and will not make a decision until the turn of the year. These options are a targeted mechanism under which strategic reserve capacity is procured centrally and used only in emergencies; and a market-wide mechanism, on the same general lines as the capacity payments which form part of many electricity markets. Once again the rationale is a little odd. The Government draws attention to various market failures (such as the fact that reliability is a public good and that prices may not send the right signals). But these are not new problems – they have been debated ever since the first days of electricity liberalisation and there is no consensus as to whether they lead to the need for capacity payments. Again, suspicions about the true motives arise; it may well be that the Government is simply getting very nervous about the impending security issues. The combination of the imminent closure of much old plant and the uncertainties in electricity markets created, not least, by the Government’s own reform proposals makes it unclear whether adequate amounts of new plant will be forthcoming. The Government probably feels it needs the ability to do something about the problem before it results in the symbolic (or even actual) political disaster of “the lights going out”.

The Package as a Whole

Perhaps the dominant feature of the package is its **complexity**. One of the main themes in the consultation stage was to question whether individual elements of the package were all needed, beyond the FiTs which form their core. The Government’s response is essentially to reassert that in its view they are indeed necessary; it is safer to have both belt and braces (and suspenders). However, this approach entails some drawbacks:

- It adds to overall uncertainty - which it is the aim of the White Paper to reduce. The lack of clarity about the Government’s motives for the individual elements means that it is difficult to know how exactly they will be used in future. More generally, the package underlines the Government’s lack of faith in markets; it wants to have regulatory tools to make up for any failure of markets to deliver the desired outcomes. This raises the risk that the current market reform is not a final settlement and that the White Paper is just part of a process that has gone on for the past decade of introducing new forms of intervention and, if they fail to produce the required



results, changing the rules again. This is not a good background for investment and may lead to unnecessarily high transition costs. The risk of future changes to the package will undermine confidence and reduce the possibility of entering a virtuous cycle under which a sustained programme of low carbon investment leads to economies of scale, learning effects and international first mover advantages.

- Complexity is itself a problem in electricity markets. The White Paper makes a valiant effort to consider the interactions between the various measures, but experience shows that measures which work in theory can in practice have unintended consequences and create opportunities for gaming the system; the more complex the structure, the greater these risks.

Unfortunately this may be a set of risks to which the Government has long since committed itself. The Coalition Agreement (a more complex document than many people realize) already included most of these elements – feed-in tariffs, a floor price for carbon and an emissions performance standard (as well as a convoluted compromise on nuclear). So these elements may be regarded as unavoidable, with the capacity mechanism thrown in for good measure because of the uncertainty about the impact of the other proposals.

Timing could also be a serious problem. The White Paper is already somewhat late – it was due in late spring and even on Government reckoning that does not normally embrace mid-July. Many fundamental aspects remain to be settled – the nature of the capacity mechanism and the counterparty for the FiTs. Legislation will not reach the statute book until spring 2013 at the earliest. The first FiTs under that legislation are likely to take some time to negotiate because neither side will want to set adverse precedents, so even on optimistic estimates construction on new projects will not start until 2014 or, more likely, 2015. The period of steadily tightening capacity margins and higher security risk would by then already be under way so it is not clear whether the new construction would be in time to lessen the security risk. Furthermore, the very fact of the reforms, and the uncertainty about how they will eventually turn out, is likely to discourage investment in the interim period, so we could be facing a tricky time in relation to the adequacy of electricity supply from the second half of this decade.

Costs are of course difficult to forecast with any accuracy but the Government's presentation seems designed to confuse rather than enlighten.

- In its Impact Statement the Government calculates the cost of the reforms in a very narrow sense, not as the cost of meeting its climate objectives but as the cost of the reforms in isolation. The baseline against which the calculation is made therefore includes various other policies including, oddly, the Carbon Price Floor, which is elsewhere regarded as part of electricity market reform. Against that background the reforms are argued to have welfare benefits, primarily because



FiTs are said to be more cost-effective than the current Renewables Obligation (contrary to what previous Governments have argued).

- In its presentation of the effect on consumers' pockets, by contrast, the Government includes all its other measures, including the promotion of energy efficiency. This enables it to concentrate on bills rather than electricity prices; bills are shown as rising by about one third for domestic consumers (and more for industrial users, with consequences for UK competitiveness). But of course not all consumers will get the benefit of the energy efficiency measures. Furthermore, history suggests that energy efficiency measures may restrain the growth in demand but rarely lead to actual reductions, so there is a considerable degree of optimism in the Government's assumptions. They also seem to have adopted the "nanny state" approach that what consumers ought to be interested in is their bills so that is what the Government will talk about - when in practice many consumers would probably prefer to know, rather more straightforwardly, what is likely to happen to electricity prices.
- More generally, the Government's presentation of the risks focuses on the avoidance of volatility in fossil fuel costs, and it shows a range of sensitivities in this respect. But, of course, the cost of low carbon generation may itself be higher than expected – the nuclear programme has a long history of cost overruns and delays, while wind power availability in practice often turns out to be lower than assumed, pushing up the unit costs. Until the first FiTs are agreed we really have very little idea how much the low carbon generation will actually cost and what the risks are of committing ourselves to this course.

So the Government says bills may go up by one third by 2030; by comparison, in its recent paper on *Operating the Electricity Transmission Networks in 2020* the National Grid says it expects power prices to double by 2020. The two views are not necessarily incompatible, (though it takes some effort to reconcile them). Given the convoluted way in which the Government presents its calculations, consumers are justified in fearing that the costs to them might well turn out to be much higher than the Government is suggesting.

Most fundamentally, perhaps, the package raises the question of what will be the role of **electricity markets** in future. The Government at some points seems to believe that they will continue to operate freely and robustly (eg in basing the FiTs on market prices). But it is difficult to gauge how this residual market will work, given that most new investment will be driven, and remunerated, by non market means. Indeed, the proliferation of measures and the language used suggest that any real idea of electricity as a market has gone; the role of the electricity system is now seen essentially as the delivery of the Government's policy objectives. This is directly contrary to the original aims of liberalisation – the Government then aimed to set only the framework, leaving it to markets, under the pressure of competition, to deliver the most effective results, whatever they might be. Now the Government wants to prescribe the specific outcomes. This is quite explicit at points. For



instance, in relation to the new counterparty for FiTs, the Government describes its own role as to set policy objectives and translate them into a “delivery plan” – the new counterparty will simply be responsible for implementing that plan. Similarly the Government now views Ofgem’s role as primarily to “support delivery of the policy outcomes defined by Government”. While in some ways the form of liberalisation in the UK electricity market remains intact, the spirit and the fundamental rationale have gone; what remains is a mere policy delivery vehicle. In effect, as presaged, we are seeing the end of the two decade long experiment in UK electricity liberalisation.