

UKs Energy Future: letting sparks fly

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Summary

- The UK has ambitious targets to increase the share of its electricity from renewables and to reduce carbon emissions. Many of its coal-fired and nuclear plants either face regulatory restrictions on their use or are coming to the end of their working lives.
- The latest iteration of a policy framework to achieve those goals is set out in the UK Electricity Market Reform Bill which has been described as the biggest shakeup of energy generation in the UK since its privatisation twenty years ago. The bill's key reform is the proposed introduction of contracts for difference intended to guarantee the price of energy generated by low carbon technologies over a fixed period, along with the introduction of a carbon price floor to better capture the carbon "cost" of fossil fuel power generation.
- The new policy framework reflects a cross-party consensus in support of renewables and tackling climate change that is now fraying as concern about high energy prices has risen, the salience of climate change as an issue has ebbed and protests against new onshore wind turbines have increased. There is also a growing and articulate lobby in support of greater use of gas as an energy source which is more cost effective than renewables and less carbon intensive than coal.
- There is a clear assumption in the Electricity Market Reform debate of the role for state intervention. It is striking how little commentary this has received, given that it constitutes a rolling back of the liberalisation that defined UK energy policy for many years.
- There is now a growing risk that the complexity of the bill, and an evolving political scepticism about renewables, means that the hope of creating a durable policy framework will not be realised. Meanwhile, the UK's need for new generating capacity in the second half of this decade remains.

On Monday the UK Parliament's Energy and Climate Change Committee released its report on the UK Electricity Market Reform (EMR) draft bill. Their report was a good deal less than a ringing endorsement. The bill will now undergo an intense period of parliamentary debate and review before it is intended to receive royal assent and pass into law in 2013. The draft bill forms the backbone of an ambitious push to reform the UK energy policy. The UK government has committed to hitting targets to reduce carbon emissions from 1990

levels by at least 34% by 2020 and by 80% by 2050. At the heart of the efforts to reach these targets is decarbonisation of the electricity market. The UK government estimates that in order to reach these targets Britain needs more than £100bn in new capacity, transmission and distribution investment between now and 2020, and potentially more as the UK's vehicle fleet and heating system is increasingly electrified. New capacity is also needed to replace the estimated quarter of the UK's current gigawatt capacity which is due to be retired in the next decade. In

total, investment levels need to be double the current rate of investment.

The bill is routinely described as the biggest shake-up of energy generation in the UK since its privatisation twenty years ago. There has though been relatively little commentary about the scale and significance of the proposed “interventions” in the market. The bill marks a significant rolling back of what has been one of the most liberalised energy markets in Europe and the world.

The scale of the bill’s ambition poses a range of complex issues and its pressing deadline and internal divisions within the UK government is stretching the capacity of the government to deliver the new policy framework. Many key details are yet to be resolved. This Global Counsel Insight asks what the EMR’s formulation and the reaction to it tells us about the wider direction of UK energy policy.

Contracts for difference

UK energy policy has been characterised by a tension between a desire to preserve what was one of Europe’s most liberal energy markets, and the need to achieve carbon emission reductions (including decarbonisation of the electricity market). This tension now appears to have been resolved in favour of the latter. Policymakers have been convinced of the need for radical change by the scale of the UK’s renewable and carbon reduction targets, the approaching retirement by 2023 of all but one of the current generation of UK nuclear power stations and the enforced retirement of much of the UK coal generation under the EU’s Large Combustion Plant Directive.

The central innovation in the bill is the introduction of long-term contracts for difference (CfDs) for different forms of low carbon energy generation. These will replace the current Renewables Obligations Certificates (ROCs) after 2017, although until then, new generators will be able to choose between ROCs and CfDs. The ROC system will be sustained for existing developers and operators who do not choose to move to the CfD system between now and 2017.

The CfDs will fix a strike price at which suppliers will buy electricity from generators, probably set for 15 years. What this means in practice is that if the reference wholesale price of electricity falls below the strike price, the generator will be refunded the difference, ultimately extracted from consumers. If the reference wholesale price rises above the strike price, the generator must pay back the surplus. The strike price will be set for each low carbon technology by the Secretary of State after a period of consultation with industry, the Committee on Climate Change, electricity regulator Ofgem, and the National Grid. Strike prices would be set by government until 2017, beyond that the aspiration is to establish a competitive auction process. The terms of CfDs for new nuclear power stations, at least at first, will be negotiated individually by the government and the developer.

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| Contracts for difference | Long term contracts which guarantee to pay generators a fixed ‘strike price’ for low carbon electricity. If the reference wholesale electricity price falls below the strike price, the difference will be made up, ultimately by the consumers. If the reference electricity price rises above the strike price the generator will have to pay back the difference. |
| Capacity mechanism | The government will run auctions to incentivise the provision of spare capacity at times of peak electricity demand. This spare capacity will be held outside the electricity market for utilisation only in extreme circumstances. This is a response to the rising share of intermittent wind and solar energy in the UK’s energy mix. |
| Carbon price floor | The government will levy a tax on UK carbon permits to raise their price to £16/tCO ₂ in 2013. This will rise incrementally to £70/tCO ₂ by 2030. |
| Emissions performance standard | A limit on the emissions intensity of new fossil fuel power stations, set at 450g/kWh, a limit which will be reviewed every three years. |
| Investment Instruments | Bespoke CfDs contracted directly between a developer and the UK Secretary of State ahead of the implementation of the CfD system for projects at risk of failure without it. Targeted chiefly at nuclear new build. |

Table 1: Five key elements of the EMR

Source: EMR draft bill 2012

Much about the CfD concept still remains unclear. Exactly how strike prices will be set, how often contracts will be reviewed and how the contracts will be implemented all remain to be determined.

Key to its functioning, however, is its interaction with the setting of a carbon price floor.

The initial floor at which UK carbon permits will be sold will be set at around £16/tCO₂ in 2013 before rising incrementally to £30/tCO₂ by 2020 and £70/tCO₂ by 2030. This will make fossil fuel power generation steadily more expensive and close some of the gap between carbon and non-carbon power generation. The remaining gap between the reference wholesale electricity price and the “strike price” for low carbon CfDs will be met by a levy on all electricity consumers.

The amount of that CfD subsidy will be controlled by the government’s existing ‘levy cap’, which caps the amount payable by taxpayers in direct or indirect subsidies for energy generation annually, including through consumer energy bills. This will act as an upper limit on the supply of CfDs and thus ensure that the government is not agreeing to unlimited consumer subsidies for low carbon generation. Critics argue that this could be a significant source of uncertainty for developers of new generation schemes, result in government allocating CfDs to favoured projects, or CfDs simply not being available because of the exhaustion of the levy cap.

The government has told the Energy and Climate Change Select Committee that this will not happen. Under current proposals it seems nevertheless impossible to rule out. The large scale nature of nuclear power generation means that any project given the go-ahead could take up a significant percentage of the available levy charge in any given period. As a result, independent renewables generators have expressed fears of being squeezed out.

Perhaps even more fundamentally, it is still unclear who exactly CfDs would be contracted with. The government now argues that the suggestion that it would take the role of counterparty was a misunderstanding. Instead the government is proposing either setting up a single government agency as the counterparty, or making electricity suppliers a multiparty counterparty. The legal enforceability of the latter is likely to be

an obvious question for investors, with predictable implications for the cost of capital.

Other measures in the bill (Table 1) include a Capacity Mechanism for payments to generators to offer capacity at times of peak demand and respond to the intermittency of renewable energy availability. Currently, however, the bill provides scant details on how this will work. Finally, an Emissions Performance Standard (EPS) which mandates that all new electricity generation must not exceed 450g/kWh - a level that rules out only the most carbon intense generation.

All hands on DECC

The problems in the bill are to some extent a product of the UK Department of Energy and Climate Change (DECC) working at full stretch under a tight deadline. The desire to avoid an investment ‘gap’ has led the UK government to target March 2013 for the completion of the bill and the end of 2013 for its passing into law. For a bill of this complexity and importance this is a tall order, especially for one of the smallest departments in Whitehall. The impression that DECC is an embattled department was reinforced by last week’s unexpected announcement of the departure of DECC permanent secretary Moira Wallace who has led the department since its creation in 2008.

This struggle to deliver the bill has been exacerbated by a split which has started to emerge within the UK bureaucracy. The Treasury has taken an increasingly sceptical line on renewables subsidies, especially in the debate over changes to the current ROC subsidies system for wind power. Whilst DECC has proposed that the subsidy to onshore wind power embedded in the current ROC system should be reduced by 10%, the Treasury has been publically pushing for deeper cuts of up to 25%. The refusal of Treasury officials to appear before the Energy and Climate Change Committee to discuss the EMR bill suggests a department being pulled into green industrial policy against its will.

Renewables policy has also become an issue of political contention within the UK Coalition. Conservative backbenchers are generally sceptical of the green agenda and the Conservative Chancellor George Osborne appears tacitly to share at least some of this scepticism. He has explicitly questioned the role of green subsidies at a time of economic downturn, a statement which was provocative to the Liberal Democrats for whom renewables are an article of faith. Furthermore in the Coalition Agreement the Liberal Democrats had to compromise their long-standing and strongly felt opposition to nuclear power, although they did succeed in inserting a commitment that there would be no public subsidy for nuclear new build.

CfDs are to be available to the builders of new nuclear power stations. Ed Davey, the Liberal Democrat Secretary of State for Energy and Climate Change, argues that this does not constitute a subsidy, but is rather a way of levelling the playing field for generators by imposing the 'real' costs of carbon. This argument is likely to be tested at the European level, where the measures will have to be cleared and where subsidies for nuclear energy are prohibited under State Aid rules. The reason the UK Treasury may have stepped back so assiduously from any suggestion that the government might be the counterparty for the CfDs is in part to avoid the perception in Brussels of state involvement.

The prospects for new nuclear build actually happening are a further source of stress for UK energy policy. Safety measures following the Fukushima accident have raised the cost of new plants and the French European Pressurised Reactor design, that EDF proposes to build, continues to have problems at the two plants being built in Europe, although progress in China seems better.

The pullout of RWE and Eon from their Horizon nuclear build consortium in March 2012 has been a set back and leaves the potentially difficult prospect of EDF being the only potential builder in the UK. The hope remains that this situation will be avoided by a combination of Chinese energy

company investment in consortium with French or Japanese nuclear plant manufacturers. It remains to be seen how well founded that hope proves to be.

Seeing red over green

If the problem the EMR is trying to solve is a lack of long-term certainty for investors in low carbon energy in the UK, how does it rate as a solution? Any system that tries to inject certainty into a world in which the three years of the EMR's gestation has seen the Fukushima nuclear accident, the dramatic emergence of shale gas capability in the US and the first signs of sharply falling module costs in solar energy faces a tough task. Despite the bill's rational approach of addressing price volatility, the answer is not reassuring at this point. The Committee on Energy and Climate Change report went so far as to pronounce the bill as unworkable in its current state.

What is missing from the EMR debate tells us as much about UK energy policy as what is actually on the table. In this case: a lack of debate about the role for intervention. The electricity market which the EMR proposes is one in which government intervention is pervasive: technology specific strike prices for CfDs allow the government to dictate how much of each energy generation source they wish to have; the carbon price floor moves the market against coal; the capacity mechanism sees the government intervening in the gas market.

It is striking how little commentary this has received, given that it constitutes a rolling back of the liberalisation that defined UK energy policy for many years. It is a demonstration that UK public policy debate has become a good deal less ideological and more pragmatic about the role of markets. Nevertheless, the direction of energy policy is increasingly being contested. There is a growing political constituency which is increasingly sceptical about the role of renewables in the UK's energy future.

First, within the Conservative party and in the public in England, there is strong antipathy to further onshore construction, and such wind turbines have become a symbol for critics of all that they perceive to be wrong with renewable electricity sources.

Second, the issue of cost has loomed larger as austerity has come to dominate the UK's political and economic agenda. The hike in the price of gas in recent years has seen energy bills rising sharply in the UK, adding significantly to the squeeze on household incomes and business costs. Attention to cost will play a larger part in energy policy discussion. This will pose questions about the public's willingness to pay for expensive offshore wind and marine renewables unless they can significantly reduce their cost, and is a big challenge to new nuclear build.

Third, the debate over action on climate change has begun to focus on outcome more than process. As shale gas takes off in the US, there is a growing lobby which believes that a second 'dash for gas' to replace coal, and possibly in conjunction with carbon capture and storage technology (although the UK remains a long way from even having a demonstration project), is the most efficient way to achieve the UK renewable targets. In this respect, the dispute between DECC and the Treasury over the ROC banding for onshore wind is actually more representative of the debate than disputes over the EMR.

How does this augur for low carbon investors in the UK? Once the UK Parliament returns in September, the bill will enter a period of intense debate and likely revision. The EMR was launched in a political environment in which expanding the UK's renewable stock in order to achieve its carbon reduction targets was largely unquestioned as a political aim. That consensus is now fraying. For investors in renewables hoping for a clear signal of the UK's commitment to a transformative shift to renewables the future still looks uncertain. For the UK the search for a stable, durable policy framework that secures the new investment it needs is proving difficult.

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