The Energy and Climate Change Committee

The Energy and Climate Change Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Department of Energy and Climate Change and associated public bodies.

Current membership

Mr Tim Yeo MP (Conservative, South Suffolk) (Chair)
Dan Byles MP (Conservative, North Warwickshire)
Barry Gardiner MP (Labour, Brent North)
Ian Lavery MP (Labour, Wansbeck)
Dr Phillip Lee MP (Conservative, Bracknell)
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Laura Sandys MP (Conservative, South Thanet)
Sir Robert Smith MP (Liberal Democrat, West Aberdeenshire and Kincardine)
Dr Alan Whitehead MP (Labour, Southampton Test)

The following members were also members of the committee during the parliament:

Gemma Doyle MP (Labour/Co-operative, West Dunbartonshire)
Tom Greatrex MP (Labour, Rutherglen and Hamilton West)

Powers

The Committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152. These are available on the Internet via www.parliament.uk.

Publication

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the internet at www.parliament.uk/parliament.uk/ecc. A list of Reports of the Committee in the present Parliament is at the back of this volume.

The Report of the Committee, the formal minutes relating to that report, oral evidence taken and some or all written evidence are available in a printed volume. Additional written evidence may be published on the internet only.

Committee staff

The current staff of the Committee are Sarah Hartwell-Naguib (Clerk), Jenny Bird (Senior Committee Specialist), Dr Stephen Allen (Committee Specialist), Luanne Middleton (Inquiry Manager), Áine Ni Bhreasail (Committee Specialist), Dr Patsy Richards (Committee Specialist), Katie Phelan (Senior Committee Assistant), Jonathan Olivier Wright (Committee Assistant), Danielle Nash (Administrative Assistant), and Nick Davies (Media Officer).

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Written evidence

Written evidence submitted by the Campaign to Protect Rural England (CPRE)

Introduction and Summary

1. We welcome the opportunity to submit evidence to the Energy and Climate Change Committee on pre-legislative scrutiny of the draft Energy Bill. As a leading environmental charity, the Campaign to Protect Rural England (CPRE) has worked to promote and protect the beauty, tranquillity and diversity of rural England since our formation in 1926. Climate change poses a major threat to the countryside which is why we support the Government’s commitment to largely decarbonise the power sector by 2030 and reduce its greenhouse gas emissions by 80% by 2050. Low-cost and low environmental impact options for achieving these targets should be prioritised including reducing energy demand, increasing energy efficiency and improving interconnection between the UK and mainland Europe.1 We recognise that these measures alone will not go far enough which is why we support the sensitive development of renewable and low-carbon energy with low environmental impacts.

2. CPRE recognises that unlocking low-carbon investment will require changing market conditions to allow new technologies to compete alongside fossil fuels. These changes will not only affect the economics of renewable technologies but also the quantity, mix and broad location of new infrastructure. We are concerned to ensure, therefore, that the draft Energy Bill enables the Government to achieve its ambition of providing secure and affordable low-carbon energy while minimising impact to the wider environment by focusing not only on the quantity, but the quality, of development. Our comments are focused primarily on those parts of the Bill which cause greatest concern in this regard. We are particularly concerned that there is a lack of attention given to:

— wider environmental issues;
— demand reduction measures; and
— reducing the need for grid infrastructure.

3. In order to maintain and enhance the beauty, tranquillity and diversity of England’s land, coast and sea, we believe that mechanisms enshrined within the draft Energy Bill should aim to minimise the environmental impact of the development of renewable and low-carbon energy and associated infrastructure.

Wider Environmental Issues

4. Electricity market reform (EMR) mechanisms outlined in the draft Energy Bill will not only change market conditions for sustainable energy sources they will also determine the quantity, mix and broad location of a great deal of the large infrastructure required to achieve decarbonisation of our energy supply. Current proposals for the Feed-in Tariff Contracts-for-Difference (FIT CfD), for example, pose risks insofar as they may incentivise oversupply of energy infrastructure which might increase pressure to site energy generation infrastructure in inappropriate locations. We believe that it is imperative, therefore, that the draft Energy Bill incorporates wider environmental sustainability criteria, as well as greenhouse gas emissions reductions, into the outcomes it delivers. If FIT CfDs, for example, are able to specify plant location and the location of supply,2 we want the Government to ensure that the criteria for siting new generation is guided by strict environmental standards, including those enshrined within the planning system, with the aim of minimising the impact on the landscape, seascape and wildlife.

Demand Reduction Measures

5. In our initial submission to the EMR consultation in 2011 we urged the Government to place demand-side measures—including short term demand response to assist with short term balancing, long term managed energy reduction to reduce total energy consumption, and distributed generation (D3)—at the heart of EMR. At that time it was clear that EMR proposals were heavily biased in favour of supply-side measures. This was a concern for CPRE because failing to reduce consumption dramatically would mean much more infrastructure would be required to decarbonise,3 increasing pressure on the extent, beauty and tranquillity of the natural environment. Moreover, there is a growing body of evidence to suggest that the Government is unlikely to reach its climate change targets if it focuses solely on supply-side and dismisses demand-side measures. Deployment rates for supply-side measures are often exaggerated because in reality there are multiple factors which slow down expected delivery rates. Demand-side measures by contrast can offer a quicker and cheaper

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1 European Climate Foundation’s report, “Roadmap 2050: a practical guide to a prosperous, low-carbon Europe” accessible from their website (http://www.roadmap2050.eu/).
solution to reducing emissions. This would require greater coordination across Government departments because energy saving measures cut across several sectors.\(^4\)

6. It is clear that the draft Energy Bill’s focus is still heavily biased in favour of supply-side measures. In the four stages of EMR set out in the Bill the Government sees demand-side responses, additional storage and interconnection playing a role in managing supply and demand during the 2020s. We believe that these demand-side measures need greater focus now so that they can make a significant contribution sooner. In order to do this we urge the Government to:

- actively support newer D3 technologies through direct support (eg FITs) and more established D3 technologies by pricing the carbon and energy system-service benefits they create into the market to put D3 technologies on a level playing field with generation technologies. The development of D3 technologies has the potential to save significant amounts of energy at less cost than new generation.\(^5\)
- ensure the proposed Capacity Market gives equal treatment to demand-side responses and storage alongside supply-side alternatives. This will help balance the grid on both short- and long-term timescales. It will encourage demand reduction in the long-term and allow the government to target those sectors which the Green Deal will not reach.

REDUCING THE NEED FOR NEW GRID INFRASTRUCTURE

7. CPRE is concerned about the potential impact which could arise from the system operator acting as the delivery body EMR. At present the regulated income of system operators through the transmission price control review is a function of the value of their asset base. This incentivises them to grow their asset base by building as much transmission capacity as they can justify, rather then actively looking for alternatives.\(^6\) With National Grid acting as the delivery body for EMR, demand-side measures might not be pursued. To avoid this conflict of interest we want the system operator to pursue, proactively and equally, demand as well as supply-side opportunities—both reduction and responses—on a long-term “best value” basis. This should be based on DECC’s diversification and cost-reduction strategies for new and low-carbon technologies and should happen in a way which is transparent both in process and outcome.

8. CPRE is concerned about the Government’s intention to introduce a “generator build model”. This will see additional flexibility in the regulatory regime for offshore electricity transmission by enabling offshore wind farm developers to build their own transmission infrastructure back to shore. CPRE is part of an alliance of countryside campaigners which has been calling for the development of a “smart grid” which argues for taking the development of the on- and offshore grid forward in an environmentally sensitive way which protects the character and beauty of landscapes and seascapes. Taking a system-wide perspective, and developing a strategically planned approach, to grid development will result in several benefits including reducing long-term costs of the grid, environmental impact and planning uncertainty. Existing infrastructure more effectively and reducing the need for new substations and associated overhead power cables will reduce conflict over public acceptability and could therefore reduce the chance of delays and associated costs. The generator build model, however, has the potential to weaken incentives for a coordinated grid because it does not promote a network which reduces the need for infrastructure. The desire for generation owners to connect their offshore developments to the grid as quickly as possible will potentially create more intrusive onshore infrastructure and result in a system which makes less efficient use of both cables and substations compared to a system-wide design.

CONCLUSION

9. While the Energy Bill will make important market interventions to incentivise low-carbon and renewable energy, CPRE believes that it should not come at the expense of the beauty, tranquillity and diversity of the countryside. We believe that the draft Energy Bill should focus not just on the quantity, but also the quality, of low-carbon and renewable energy and associated infrastructure. To do this the Bill would take greater account of wider environmental impacts, increase focus on demand reduction measures and minimise impact on landscapes and seascapes of the offshore grid as it develops.

June 2012

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Written evidence submitted by Alex Henney

“Most schemes of political improvement are laughable”

Dr. Johnson

SUMMARY

1. The purpose of this paper is to show that over the last quarter of a century or so the government and regulator have made a series of major policy errors regarding the electric industry. The examples are:

   — A privatisation flawed by nuclear unreality.
   — The government and Ofgem mess up of the wholesale electricity market.
   — The waste and failure of mass market retailing.
   — Smart metering provided unsmarply.
   — The flawed renewables obligation system.

2. The purpose in citing my own views is most definitely not to say “told you so”. Rather it is to show that if one assembled the relevant information the mistakes were avoidable if decision making had been both knowledgeable and evidence based rather than ill informed and politically driven. Also I propose that we should learn the lessons of the past to apply to the present. My book “The British Electric Industry 1990–10: the rise and demise of competition” provides the detailed evidence for the contentions made here. It also concluded that “Perhaps fundamentally a competitive electric industry is just too complicated for political and bureaucratic processes.” The conclusion I now draw is that the Electric Market Reform is too complex and DECC is out of its depth. We have messed up the market, and should now abandon the pretence of a market. We should move to regulated generation which will be much simpler and also more appropriate to energy policy objectives.

A PRIVATISATION FLAWED BY NUCLEAR UNREALITY

3. In March 1987 the Centre for Policy Studies published “Privatise Power” in which (with help from an American, Miles Bidwell) I advocated a competitive restructuring of the electric industry in England & Wales including a pool to which in June 1987 we added a LOLP x VOLL capacity payment; and retail competition for medium to large customers. After the election of June 1987 this approach found favour with Cecil Parkinson and civil servants, and in October I wrote a paper titled “The Operation of a power market” which showed that a competitive market would not (as claimed by the Central Electricity Generating Board, CEGB) lose the merit order, and helped to encourage the break-up of the CEGB. I thus hope my market credentials are beyond challenge.

4. The eventual restructuring and privatisation of the electricity industry in England & Wales was a tour de force, and shows what the government can do. But it operated under special circumstances—it was forced to face reality by the combination of a tight timescale and the requirement to produce a flotation prospectus that was a legal document for which it could be sued if it indulged in the economizing with the truth that is unfortunately too typical of its pronouncements. Also a large squad of very bright people were involved from bankers, City lawyers, consultants, accountants and the electric industry.

5. The Sizewell B inquiry was flawed from start to finish. At the beginning the inspector was told the answer that was required; a civil servant was secretary; the chief economist did not take the trouble to go to Washington DC to check out data about the costs of pressurised water reactors. Following the decision to go ahead with it, on 23 February 1987 I published “Sizewell B losing investment” in The Times which was based on representations which had been made to the Sizewell Inquiry by the Electricity Consumers’ Council and others, and on reports produced by the US Department of Energy. On 7 July 1987 I advised the Chairman and Chief Executive of the Central Electricity Generating Board that the Magnox reactors were not saleable, and subsequently concluded that none of the nuclear plant could be sold in the way the government hoped (I proposed a leasing solution). And so it came to pass, but the failed attempt to privatise nuclear power resulted in creating a duopoly of price setting generators (National Power and PowerGen) that disfigured the market for a decade.

THE GOVERNMENT AND OFGEM MESS UP THE WHOLESALE ELECTRICITY MARKET

6. The consequences of the high prices set by the duopoly led Labour politicians to wrongly believe that the design of the Pool was biased against coal and facilitated the exercise of market power. Then a group of regulatory officials and civil servants, who had strong simplistic convictions about auction designs that were
based neither on theoretical analysis nor empirical evidence and who were ignorant of foreign electric market experience, got to work and came up with the New Electricity Trading Arrangements (NETA). This (for a cost of about £1 billion) it was claimed would reduce wholesale prices by 13%.

7. Professor David Newbery of Cambridge University, Professor Derek Bunn and John Bowers of the London Business School who had undertaken an elaborate simulation of NETA, and I argued that NETA would not reduce prices. And so it proved: indeed NETA achieved few of its stated objectives. But ironically it went live just after the Pool price collapsed due to the fragmentation of the generation industry following forced divestment of the duopoly together with various companies building surplus merchant generation in the belief that the duopoly would always be there and would keep prices high. Subsequently, following a flimsy and flawed Impact Assessment, NETA was extended to Scotland for more cost but no perceptible benefit. NETA was a factor inducing both vertical integration and consolidation; reducing liquidity in the contract market; virtually eliminating small suppliers and generators; and adversely affecting combined heat and power schemes and windmills. So we end up now with an oligopoly and a few large generators.

8. Over a decade Ofgem has fiddled and fiddled with the cash-out prices to little avail, and is going to have another go. And it has fiddled with requiring the Big 6 to auction off some of their power.

THE WASTE AND FAILURE OF MASS MARKET RETAILING

9. In December 1995 I published “The proposals for liberalizing the electricity market in England and Wales in 1998—A poll tax on wires” which argued that retail competition would be a wasteful endeavour because residential consumption in Britain (at less than a quarter of the consumption in Norway) is so low as not to make it worthwhile. The regulator, Professor Stephen Littlechild, made no attempt to analyse the implementation costs (which tripled) or the benefits. He created an ersatz form of “competition” by setting high regulated prices to provide “headroom” to give “competing” suppliers scope to undercut the prices of the incumbent suppliers. A detailed study by Dominic Maclaine, editor of New Power, showed that customers in general would have been better off with effectively regulated prices.

10. Subsequently there has been a succession of problems of mis-billing and mis-selling and fines; the exercise of market power over incumbent customers; and the gross margin of retailing has doubled in real terms. For years Ofgem sat on its hands playing Pooh sticks, and on 16 January 2008, following a meeting with Alistair Darling, Messrs. Mogg and Buchanan published a press release “The market is sound—Ofgem Assures Chancellor”. Then the Select Committee on Business and Enterprise got on the case, which stimulated Ofgem to begin its so-called Market Probe. It discovered the reality of the market and this has resulted in the application of elastoplast after elastoplast until eventually supply has been virtually re-regulated with a requirement on suppliers to advise customers annually of the lowest tariff available.

SMART METERING PROVIDED UNSMARTLY

11. The government has made a pig’s ear of residential smart metering. First it dilly dallyed; eventually it sponsored some relatively ill designed trials. Then, before it got the results from the trials (2011), it announced in October 2009 that it would mandate a roll-out. Although all other jurisdictions in Europe and North America that have mandated a roll-out have looked to the DNOs to install the meters and backhaul the data, the government went into an elaborate and complex procedure of “market model” options to develop the most complex way of proceeding, including looking to suppliers to roll-out the meters and devising a centralised Data Communications Company (DCC) which it would design—this is another government IT disaster in the making. Based on a study of 11 jurisdictions Britain has taken longer and produced more paperwork to devise a more complex system than anywhere else.

12. The Impact Assessment for a roll-out was politicised by green dreamers. The 2007 analysis by Mott MacDonald came to a net disbenefit of £4½ billion; by August 2011 it was a positive net benefit of £4.9 billion, which stretches credibility. The Impact Assessment had basic information missing, the risks were not realistically appraised, particular for IT; comms are not mentioned, nor the logistics of installation. And
there were various methodological flaws. Also there are many examples of unclear drafting which make the document very difficult to understand. The result of these fudges is that the British assessment of the benefits is by far the most optimistic of the 10 other cost-benefit analyses analysed. I do not believe the British figures because they are not believable.

13. The roll-out for the electric only part of the project appears very expensive (2009 prices):

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<th>ENEL (Italy)</th>
<th>ACEA (Rome)</th>
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<tr>
<td>All in cost per meter (£)</td>
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<td>75</td>
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<tr>
<td>Programme cost for 30 million electric meters (£billion)</td>
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Part of the high cost is the proposal to provide in-house display units at some £20 each—at least half (perhaps more) will not be used but thrown away. No other jurisdiction is giving any out.

14. In 2000 ENEL prepared a business case for smart meters and then designed and tested a prototype. Between 2002 and 2008 it rolled out 31 million, an overall period of nine years. In 2008 the British government initiated the Energy Demand Research Project and in 2009 announced a roll-out; the earliest beginning of a roll-out (to be spread, in theory, over five years) is 2014, a period of six years involving a great deal of faffing around to start.

15. Following a paper that Professor Ross Anderson of Cambridge University and I prepared, the Cabinet Office is now trying to at least stop the DCC become another public sector IT disaster like the NHS database. Also hopefully it will try to cut the costs of this mismanaged project.

**The Flawed Renewables Obligation System**

16. To promote the development of renewable sources of energy—especially wind—the government introduced the Renewables Obligation scheme for subsidising renewables. The scheme required licensed suppliers to procure an annually increasing proportion of their electricity supplies from certificated renewable energy sources. The Renewables Obligation Certificates (ROCs) could be purchased separately or the obligation could be bought out at a fixed price. The buy-out fund was returned to the renewable generators pro-rata to their output.

17. This was an ill-conceived scheme based on a naïve belief in markets. For no useful economic purpose it required renewables generators to sell their power and implicitly assume the risks of the Balancing Mechanism for which they had to pay 10% or so of their electricity price income in order to sell their power to a party that would assume the risk. It also exposed renewables developers to the risks of gas driven prices in the wholesale electricity market; to the politically driven price risk of the EU Emissions Trading Scheme; and finally to the future indeterminate value of the buy-out fund for ROCs. Risk was piled on risk was piled on risk, and consequently the cost of capital—and hence the cost of renewable energy—was unnecessarily high. And if all that were not enough, as the Pöyry analysis for banding pointed out in its sensitivity analyses, the amount of renewables built depends in part on the price of electricity.

18. The British scheme was about a fifth more expensive than the simple German feed-in tariffs (FIT) and failed to deliver much because there was a perverse incentive to under-deliver in order to push up the value of the buy-out fund. Initially the scheme was technology neutral, but in order to make offshore wind development (and some other technologies) attractive, “banding” was introduced that varied the number of ROCs associated with the output from different renewable technologies, thus introducing further regulatory risk. Over the years the government fiddled and then fiddled again with the scheme, making it very complex and effectively turning it into a premium FIT.

**The Pretence of Market Reform**

19. Following reports by Ofgem and then the New Labour government, the Coalition government announced that it was going to undertake the “Electricity Market Reform” (EMR). The intention was to replace the ROCs for windmills with a feed-in tariff; to develop contracts for nuclear power plants; to support carbon capture and storage with contracts; and to devise a capacity payment mechanism to financially support the gas plant for windmills with a feed-in tariff; to develop contracts for nuclear power plants; to support carbon capture and storage with contracts; and to devise a capacity payment mechanism to financially support the gas plant.
necessary to back up the windmills and to ensure security of supply because about a fifth of the existing portfolio of plant may be retired by 2020. The project is misnamed—it is not about reforming a market but about replacing the investment function of a market with central planning (indeed in the case of renewables, micro central planning)\(^{20}\) and with what are in effect regulated price contracts designed to de-risk investment. The conventional investment role of a normal market has been eliminated and the “spot” market price will be depressed and distorted by the must-run subsidised renewables.

20. Two years later all we have is Bill of framework legislation which provides the government with great latitude to devise secondary legislation and regulations but does not tell us about money. No indicative prices have been tabled for nuclear, nor outline proposals for risk sharing and incentives. The only clue to cost has been that DECC estimates the minimum return of investment to be 11.2%.\(^{21}\) DECC has seemingly rejected the financing approach adopted for the only nuclear power plant being developed in the US of building against the regulated asset base (which has a post-tax cost of capital of 7.8%) because it clings to naïve delusions that this development is in unexplained ways “market” related. The difference in the cost of capital between 11.2% and 7.8% results in a production cost of about £80/MWh versus £56/MWh, and represents a saving of billions of pounds for customers.\(^{22}\) DECC appears to be proposing to repeat the mistake of the Renewables Obligation Scheme at the expense of customers.

21. At least up to the end of 2011 the development of a capacity market has been a naïve mess. First, DECC proposed an approach adopted in Sweden of a so called “strategic reserve”. While this was appropriate for the potential problem the Swedes wished to address of having a few thousand MW available to meet a possible water shortage, it was not appropriate for providing and keeping on-line the many thousands of MW required to back-up windmills. Next, although I advised DECC in September 2010 that reliability options (ROs) had been implemented in the New England market following advocacy and work by Miles Bidwell,\(^{23}\) DECC’s EMR green paper of December 2010 referred to ROs as “academically interesting but not applied in practice”. In early January 2011 I corrected this misapprehension and provided an article by Bidwell describing the New England ROs. In its next consultation paper of July 2011 DECC had many pages on the RO concept but got it wrong, describing it as a financial option when in fact it is an option on electricity production. Eventually a Spaniard put DECC officials to rights both on the Swedish issue and the RO, but not before DECC had wasted more than a year and the time of people in electric companies.

22. Further shortcomings of the EMR are:

- The lack of provision of information to industry participants. As Nigel Cornwall observed\(^{24}\) “The proposals as they stand do not give sufficient clarity and confidence for investors to proceed”.
- There has been no indication as to where DECC has got with trying to resolve the very difficult issue of striking a balance between 1) revenues and profits to investors and 2) the interests of customers (which it failed to do with the ROCs).
- The seeming failure to look at the impact of the CFDs on the rest of the market, notably the impact on small generators and suppliers.
- Stating the capacity market will not be introduced until it is shown there is a need for it will encourage developers to delay investment until it becomes necessary to implement it.
- The failure to sort out NETA properly\(^{25}\) but merely have Ofgem undertake yet another cash-out review, and not to address the issues raised by the EU’s “target model” in market splitting between Scotland and England and the related issue of using locational incentives to minimise costs.

23. The legacy of the EMR may be that we mess up the market even more. We make changes on the assumption that there will be significant wind, but this may not be realised. Thus instead of improving the market to rectify the shortcomings of NETA, we create new problems and complexities.

**The Patchy Experience of Bringing Officialdom to Account**

24. Some of the failures of competence that I have identified have resulted in severe criticism by Select Committees:

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\(^{20}\) The Pöyry report for DECC on banding (op. cit.) makes this very obvious with a set of figures showing modeled levels of renewables generation for 11 types of generation for 4 options of banding.

\(^{21}\) P55, The nuclear energy landscape in Great Britain, Briefing for the House of Commons Energy and Climate Change Select Committee, NAO, April 2012.

\(^{22}\) See p313 of my book.

\(^{23}\) He and I developed the concept in 2003 in a study for the Amsterdam Power Exchange, and subsequently in a study for a number of European regulators in 2005. Concurrently Spaniards at a university in Madrid developed and applied ROCs in Columbia.


\(^{25}\) The aims should be to simplify its procedures and governance; to eliminate the excessive imbalance risk; to introduce a locational component; and to increase liquidity in the contract market.
In 1990 the House of Commons Energy Committee conducted an inquiry into “The Cost of Nuclear Power” (7) because “after years of official assurances that nuclear power was (or could be) the cheapest form of electricity generation, Parliament and the public are entitled to know why it was only when faced with the commercial discipline of life in the private sector that nuclear power (from both existing and proposed reactors) suddenly became an expensive form of generation.” The Committee observed that “on the basis of the evidence we have received, we are convinced that there has been a systematic bias in the CEBG costings in favour of nuclear power…we believe the Department of Energy, as the CEBG’s sponsoring department, must share the blame for this, since it apparently made no attempt to obtain realistic costings from the CEBG until it was seeking to privatise nuclear power.” The Committee concluded that “We believe that the determination of successive governments and Secretaries of State for Energy to expand nuclear power caused them to pay too little attention to discovering its full costs…The manner in which the Department has supervised the CEBG over the years can only be described as inadequate”.

The Trade and Industry Committee had several critical goes at the implementation of mass market retailing:

— in July 1995 it observed “there has been remarkably little analysis of the potential benefits and the costs of liberalisation”; 26
— in February 1997 it observed “We are astonished to find that despite our previous recommendation, no detailed independent cost-benefit analysis…has been published”; 27
— in July 1998 it commented that “…the cost estimates presented to our predecessors by the DGES have proved to be woefully inadequate…We are appalled to find that the estimates of the costs of liberalisation presented to our predecessors by the regulator at the time of their last inquiry (early 1997) should have proven so inadequate…” 28 (Emboldening in the original); and
— In 2008 the Business and Enterprise Select Committee published “Energy Prices, Fuel Poverty, and Ofgem” which was very critical of Ofgem. 29

25. But in general the authorities have got off lightly. The NAO produced an inept report on mass market retailing in 2001 intimating that customers were benefiting, 30 and a facile report in 2008, 31 in 2003 it produced a glib report on NETA, incorrectly concluding that “NETA has facilitated lower wholesale prices”, and made the entirely fallacious claims that “under NETA there has been active demand-side participation”, and “Since the inception of NETA two exchanges (UKPX and APX) have traded significant volumes of electricity”. 32 Recently it has produced a limp wristed report on smart metering. 33

26. A former civil servant commented on a draft of this paper that “I can’t disagree with your conclusions…Civil servants are skilled, but not at running things. Their skills are political and PR…the loyalty of civil servants is primarily to their Minister, thus time horizons are very short (what minister lasts more than 12–18 months) and joined-up Government is next to impossible. Direction is provided by the prejudice or whim of whichever Minister is currently in charge of a department, who won’t be around to pick up the consequences of his or her actions. With this muddle at the centre, it is hardly surprising that the parts of Government that are supposed to run things get no direction or holding to account. Civil servants are skilled at handling this muddle, but since Ministers have no interest in evidence-based decision-making it is hardly surprising that neither do civil servants”.

THE SERIAL INCOMPETENCE OF GOVERNMENT IN DEALING WITH THE ELECTRIC INDUSTRY

27. The EMR is a case example of how not to restructure an industry. While politicians have had some say over the general direction of policies and too often want to be seen to be doing something, there can be no doubt that the major failures of the last dozen or so years—the expensive and fruitless introduction of NETA (which is an intellectual abortion) and its flawed extension to BETTA; the expensive ROC system; the overly generous FITs for solar panels; the incompetent mess made of capacity payments; the nuclear misconception;
the proposal to waste £bns on an ill-conceived and expensive implementation of smart meters, are due to the limitations of DECC officials. In part the shortcomings reflect their lack of technical and commercial professionalism resulting from civil service selection procedures and belief in generalists, and a shortcoming that is exacerbated by the continual job switching. In consequence there is very little corporate memory of why and how things were done and what worked and did not work, and little knowledge of foreign electric systems. Furthermore, there must be a suspicion that analyses are politicised. DECC appears to confuse “roadmaps” with action; to create complicated bureaucracy; to fudge numbers, some of which are frankly deceitful; and to throw customers’ money at vested interests who knock at its door.

28. Three conclusions I draw in my book are that many of the mistakes that have been made are due first to “naïve marketism”, an ideological wish to introduce so-called market solutions regardless of the complexity of the proposals; of transaction costs; of the prospects for the exercise of market power; and of the interest of customers in competitive choice. Second, to the propensity of the British civil service to seek “big bang” and complex solutions, which is in stark contrast to the Norwegians (who pioneered the Nordic market, the most successful in the world), whose approach has always been incremental and Keep It Simple Stupid. Finally I concluded that “Perhaps fundamentally a competitive electric industry is just too complicated for political and bureaucratic processes.” The experience of the EMR endorses this view. The conclusion I now draw is that the Electric Market Reform is too complex; we should abandon the pretence of a market and revert to regulated generation. Thus I recommend:

The EMR should be scrapped; the pretence of a market abandoned; and generation should be based on US style rate of return price regulation with central planning and central dispatch based on short-run marginal costs. The dispatch would provide a signal that would indicate short term surplus and scarcity.

June 2012

Written evidence submitted by the Office for Nuclear Regulation (ONR)

SUMMARY

— The Office for Nuclear Regulation (ONR) operates currently as an agency of the Health and Safety Executive. It is responsible for the regulation of nuclear safety and security on civil nuclear sites, the regulation of nuclear safety on defence nuclear licensed sites, the regulation of the transport of radioactive material and the application of the UK nuclear safeguard obligations.
— ONR fully supports the provisions within the draft Energy Bill to establish an independent statutory Office for Nuclear Regulation. ONR has worked closely with the Health and Safety Executive, Department of Work and Pensions and Department for Energy and Climate Change in the development of the draft Bill.
— The draft Energy Bill brings together all of the ONR’s functions under one piece of legislation and will give the ONR direct responsibility for those functions that it performs.
— The provisions in the draft Bill provide the means to establish and sustain a modern independent nuclear regulator based on the better regulation principles of transparency, accountability, proportionality, targeting, and consistency.
— The provisions in the bill support independent nuclear regulation in the UK. The position of the Chief Nuclear Inspector will be established in statute for the first time. The regulatory powers and functions of the ONR will be delegated to the Chief Nuclear Inspector ensuring that nuclear regulation continues to be independent and technically based into the future.
— The provisions of the draft Energy Bill provide the ONR with flexibility over its financial and employment arrangements to ensure it can meet its resource requirements on a fully sustainable basis.
— ONR already charges the vast majority of its costs to industry, currently around 95%. The proposed Energy Bill enables ONR (through regulations) to charge up to 100% of its costs to industry.

INTRODUCTION

1. In the UK, the nuclear industry is regulated by the Office for Nuclear Regulation (ONR) as an agency of the Health and Safety Executive (HSE). Our overarching mission is to secure the protection of people and society from the hazards of the nuclear industry. This responsibility covers the regulation of nuclear activities associated with power generation, fuel cycles, certain defence activities, and research, through to decommissioning.

34 One organisation observed that “During the 21 month period of the Coalition Government “we have dealt with ever changing personnel in a number of departments and especially at DECC. Officials with limited or no experience in a sector are brought in to a team part way through policy development and the whole process slows dramatically. The generalists, albeit bright, are not capable of dealing with the technical issues.” The Spaniard who advised on the capacity market commented the DECC officials were bright and open minded, but ever changing jobs.

35 At the Atomic Weapons Establishment (AWE) Aldermaston and Burghfield nuclear licensed sites, and at dockyards where nuclear submarines are fuelled and maintained
2. Under UK law (the Health and Safety at Work etc. Act 1974) employers are responsible for ensuring the safety of their workers and the public and this responsibility is reinforced on nuclear sites by the Nuclear Installations Act 1965 (NIA), as amended.

3. We regulate civil nuclear sites primarily through a nuclear site licensing regime under the Nuclear Installations Act 1965. We require all licensees to comply with conditions attached to the nuclear site licence and to operate in accordance with an adequate safety case as established by assessment against our Safety Assessment Principles (SAPs). By doing so, a multi-barrier approach to preventing accidents (defence in depth) along with other primary principles ensures licensees carry out their operations in a way that reduces risks to so far as is reasonably practicable.

4. We are also responsible for the regulation of a number of other areas in addition to our nuclear safety role. This includes the regulation of civil nuclear security, regulation of the transport of radioactive material and the application of nuclear safeguards to ensure that the UK complies with its international nuclear safeguards obligations.

5. ONR was established as an agency of the HSE on 1 April 2011 in anticipation of the legislation to create a new independent statutory body outside of the HSE to regulate the nuclear industry. This legislation is included in Part 2 of the draft Energy Bill.

**EVIDENCE**

**Involvement of the interim ONR in the draft Energy Bill**

6. ONR has worked closely with its parent organisation, HSE, the HSE sponsoring department, the Department of Work and Pensions, and the Department for Energy and Climate Change in the development of the policy, proposed governance of the statutory ONR and draft legislation. As part of this process, ONR has consulted internally with nuclear safety, security, safeguards and radioactive transport inspectors to ensure that the draft legislation is fit for purpose from an operational perspective.

**Establishing a new independent regulator**

7. One of the key recommendations in HM Chief Nuclear Inspector’s report following the earthquake and tsunami in Japan last year, was the nuclear regulator should be able to clearly demonstrate to stakeholders its effective independence from bodies or organisations concerned with the promotion or utilisation of nuclear energy. Such independence needs to be both in law and in practice.

8. Currently the ONR’s functions originate from a number of different government departments. The core nuclear safety functions are derived from the Health and Safety Executive of which it is an agency. The nuclear security and nuclear safeguards functions were both transferred from what was the Department for Trade and Industry to HSE/ONR in 2007. Finally, the radioactive transport function was transferred from the Department for Transport to HSE/ONR in 2011. Different agency agreements and memoranda of understanding govern each of these functions.

9. Under the draft Energy Bill, all of ONR’s functions are pulled together in one piece of legislation making it clear what is within the remit of the regulator. ONR will also have within its remit the regulation of conventional health and safety on nuclear sites. These functions, instead of being those of the Secretary of State delegated to ONR, will become ONR’s own functions. Additionally, the post of the Chief Nuclear Inspector will be established in statute for the first time. The regulatory functions and decisions of the ONR will be delegated to the Chief Nuclear Inspector to ensure that nuclear regulation will continue to be technically based and independent of other interests into the future.

10. Finally, it is intended that the statutory ONR will be sponsored by DWP, ensuring a distance between the regulator and the DECC, which is responsible for nuclear energy policy.

11. These steps are crucial in the development of a regulator which is, and is seen to be, demonstrably independent from Government, the industry and other influences.

**ONR Board and accountability to Ministers**

12. The draft Energy Bill requires the appointment of a skills-based Board made up of executive and non-executive members (the latter always outnumbering the former). One non-executive Board member will be required to have expertise or experience which relates to the ONR’s civil nuclear security purpose. Among the non-executives will be an option for a HSE appointed member, this arrangement will be replicated on the HSE board to which the ONR may appoint a member. This provision is to retain links between the two organisations once the ONR becomes a stand-alone body, specifically to maintain consistency in the regulation of health and safety legislation.

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56 The SAPs are a series of nuclear safety principles designed to provide inspectors with a framework for making consistent regulatory judgements on nuclear safety cases and to provide nuclear site duty holders with information on the regulatory principles against which their safety provisions will be judged. Web link: www.hse.gov.uk/nuclear/saps/saps2006.pdf

57 Japanese earthquake and tsunami: Implications for the UK nuclear industry, web link: www.hse.gov.uk/nuclear/fukushima/final-report.pdf
13. The interim ONR has already established a board on these principles, however unlike the interim board; the statutory ONR Board will be directly accountable to the Secretary of State, rather than via HSE. This will ensure that there is clear and comprehensive governance of the nuclear regulator, with a Board who have both the business decision making powers to administer an independent regulator and direct accountability to Government and Parliament for those decisions.

14. Under the legislation, the Board is responsible for exercising all the functions of the ONR. In practice, most of the ONR’s functions will be delegated to ONR staff whilst the Board retain an overall remit with respect to the governance, accountability, strategy, planning and reporting of the organisation. Non-executive directors, will not be able to undertake specific regulatory functions or decisions, such as the granting of a site licence or making the decision to prosecute. In practice, it is intended that all regulatory functions and decisions will be delegated by the Board to the Chief Nuclear Inspector (which will become a statutory role) who will then delegate functions as appropriate to ONR staff. The Chief Nuclear Inspector will be the authoritative head for the ONR’s regulatory function.

Openness and transparency

15. The (existing) ONR board has committed to follow Government policy on openness and to publishing all papers on the ONR website (including partial disclosures with redactions) unless closed under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004. As part of a wider change programme, ONR is working towards making most of its regulatory decision making documents publicly available on its website.

16. The draft Bill will require ONR to produce and publish a strategy at least every five years and an annual plan and report—allowing parliamentary and public scrutiny of ONR’s performance of its functions. The interim ONR is already establishing similar practices in anticipation of becoming a statutory body.

17. ONR, when it becomes a statutory corporation will be a public body for the purposes of the Freedom of Information Act and Environment Information Regulations and the provisions of such legislation will continue to apply to ONR.

Regulatory Powers

18. One of the policy principles underpinning the drafting of the Bill was that the core powers of the regulator and the responsibilities of duty holders should not change. ONR, as an agency of HSE, currently obtains the majority of its regulatory powers through the Health and Safety at Work Act 1974.

19. The draft Energy Bill therefore recreates many of these powers for the statutory ONR and its inspectors. As the drafting of legislation has moved on in many ways since 1974, it would not have been appropriate for parliamentary counsel to copy-across drafting “word for word” from the Health and Safety at Work Act. ONR has worked with DECC officials, lawyers and parliamentary counsel to ensure that Bill clauses accurately recreate those regulatory powers that ONR currently has as part of HSE. We believe that this has been achieved and that additionally, the draft Bill provides greater clarity for inspectors and duty holders alike in the extent and application of ONR’s powers.

Staff recruitment and retention

20. The recruitment market for nuclear safety specialists is competitive and in the context of Fukushima and new nuclear (both domestic and international) this is expected to harden further. ONR is in direct competition with the private sector for these skills and the civil service restrictions on pay and conditions constrain ONR’s ability to be a competitive player in the recruitment and retention of specialist staff on a sustainable basis.

21. The Energy Bill will give the statutory ONR flexibility over its financial and employment arrangements. ONR will use this flexibility to work towards being an “employer of choice” to attract and retain specialist staff within the context of ensuring effective nuclear regulation.

Charging and Fees

22. ONR currently recovers 95% of its costs from industry using the powers and provisions contained within the Health and Safety at Work Act 1974, Nuclear Installations Act 1965 and Health and Safety (Fees) Regulations 2010. The draft Bill allows ONR, through regulations, to move to 100% cost recovery and this will be an aim of ONR once it becomes a statutory body.

23. The main areas where there is the potential for new industry charges relate to the transport of radioactive material and nuclear safeguards functions. Before any new charges are applied to industry, these will be subject to formal consultation exercises.

Conclusions

24. ONR fully supports the draft Energy Bill and believes that it includes the provisions needed to establish an effective, transparent and independent regulator. The proposals retain the best of the current system, keeping
the robust safety standards already in place, whilst providing ONR with the flexibility to deal with the challenges presented by the future.

25. The draft Energy Bill brings together all of ONR’s functions within one piece of legislation for the first time—providing greater transparency. Furthermore, these functions will no longer be delegated down from the Secretary of State but will be ONR’s—with the regulatory functions delegated directly to the Chief Nuclear Inspector, a post established in statute for the first time—affording greater independence to the nuclear regulator.

26. ONR is already putting in place, as an agency of HSE, much of the groundwork needed to be a more efficient and transparent regulator. The provisions within the draft Energy Bill will provide ONR with the independent status needed to build on this work to create an appropriately resourced and responsive regulator for the future challenges of the nuclear sector. With this in mind the ONR are developing a comprehensive transition programme so that, subject to parliamentary approval and royal ascent of the Bill, the organisation can move quickly and efficiently to its new independent status and from the earliest point implement the provisions in the Bill.

June 2012

Written evidence submitted by EEF

EXECUTIVE SUMMARY

EEF backs electricity market reform. Support for low carbon technologies needs to be made both more attractive to investors and more affordable for consumers.

Manufacturers urgently need a more affordable approach to decarbonisation. UK industrial electricity prices have been consistently above the EU/G7 average since 2006. The cost of policy is a major differentiating factor—it’s impact on prices is already significant, set to rise and difficult to pass on to consumers in international markets.

Yet despite some good features, government proposals remain disproportionately focused on the needs of investors to the detriment of consumers. This is reflected in the provisions and omissions of the draft Bill. To address this issue, EEF believes the draft Bill needs strengthening in three key areas.

First, stronger statutory safeguards are needed to control the costs of Contracts for Difference, Investment Instruments and the Capacity Market. In addition, the Bill must avoid giving the government too great a latitude to intervene in the market unless there are compelling reasons to do so.

Second, an explicit commitment to move to technology-neutral auctions, underpinned by primary legislation, is needed. Competition between low carbon technologies is the key to keeping costs down. The Bill must refer explicitly to the government’s stated plans to restore competition in the market after the initial phase of administered pricing.

Third, the Bill must provide greater assurance that the competitiveness of energy-intensive manufacturers operating in international markets will not be compromised by the reforms. Explicit provisions empowering the government to reduce the exposure of these companies to EMR-related costs are needed.

ABOUT EEF

1. EEF is the representative voice of manufacturing, engineering and technology-based businesses with a membership of 2,500 companies representing 6,000 industrial sites.

2. A large part of our policy work focuses on the issues that make a difference to the productivity and competitiveness of UK manufacturing, including investment, innovation, skills and tax issues.

3. This memorandum is a submission to the Energy and Climate Change Committee’s inquiry into the draft Energy Bill published on 22 May 2012.

ELECTRICITY MARKET REFORM URGENTLY NEEDED

4. Given the UK’s stretching commitment to cut carbon dioxide emissions, the British electricity market is in urgent need of reform. We need to find a better way to support low carbon power generation, one that is more attractive to investors and more affordable for consumers.

5. The package of reforms being developed by the government has the potential to help achieve both of these objectives—it could encourage more investment in low carbon technologies and cut the cost of decarbonising the UK’s electricity supply.

6. Most notably, the proposed long-term contracts for low carbon power generation, the centrepiece of the reforms, are designed to provide certainty over returns for investors. The theory being that de-risking this activity will help both attract more investment and cut the cost of decarbonising electricity by lowering the
cost of capital for power generation projects. In practice, this will depend on setting the rate of support for low carbon technologies at the right levels.

**Affordability is Key for Manufacturers**

7. Manufacturing urgently needs a more affordable approach to decarbonisation. UK industrial electricity prices have been consistently above the EU/G7 average since 2006, with the competitiveness gap widest for the most energy-intensive industries.\(^3^\)

8. The cost of policy is a major differentiating factor—its impact on prices is already significant, set to rise and, for companies competing in international markets, more difficult to pass on to customers than global factors like commodity prices.\(^3^\) The energy intensive industry package being developed for the most affected industries is welcome, but will only offset part of the cost for a handful of companies.

9. Electricity Market Reform (EMR) must deliver on its promise to industrial consumers and reduce the level of green subsidies they have to support through their electricity bills. This will primarily be achieved by encouraging the most cost-effective mix of low carbon generation, but also by ensuring that the energy-intensive industries competing in international markets are not overly burdened by policy costs.

10. Despite many good features, EEF is concerned that EMR proposals focus disproportionately on the needs of investors at the expense of consumers. This shortcoming is reflected in the draft Bill.

11. Specifically, the Bill needs strengthening in three key areas—more robust cost controls, a clearer timetable for moving to a technology-neutral approach and greater assurance that the competiveness of the UK manufacturing base will not be compromised.

**More Robust Cost Controls are Needed**

12. EMR represents a significant shift away from a liberalised market towards a more centrally-planned approach. Under the arrangements being developed, the government will be making key decisions on pricing, volume and technology for an increasing share of the market.

13. The consequences of getting these decisions wrong will be significant for the consumers who will be financially liable for any mistakes. Therefore, robust cost control must be deeply embedded into the design of the new arrangements.

14. The cost of the new arrangements will largely be driven by the Contracts-for-Difference (CfDs), the Investment Instruments (IIs) designed to ensure against a hiatus in investment in the run up to the implementation of EMR and the Capacity Market (CM).

15. On this basis, we strongly oppose the ability granted to the Secretary of State by the draft Bill under clauses 5 and 6 to delegate the power to set CfD strike prices and the market reference price to whomsoever he or she decides, without any conditions. This unbounded power risks subverting the institutional framework being developed to underpin the new arrangements—ie the most important decisions could be made outside this governance framework.

16. We welcome the power that the Bill gives the Secretary of State to cap the overall cost of the CfD programme in clause 8(1). However, some elements of the CfD provisions risk unnecessarily driving up costs and other elements of EMR need stronger statutory safeguards built in. EEF has identified four key issues that we believe need to be addressed.

17. First, the power that the Bill gives the government in relation to CfDs under clause 8(2) risks driving up cost. The provision, which empowers the Secretary of State to set binding technology, capacity and location targets for the CfD programme, seems unwarranted and counter-productive. Not only does this power increase the risk of costly mistakes being made, the prospect of it being exercised could increase the perception of political risk amongst would-be investors.

18. Unless these provisions are essential for the move to competitive auctions for CfDs, which seems unlikely as clause 5 allows for “competitive” setting of strike prices, they are unjustified.

19. Second, the Bill needs provisions to control the costs of IIs. Potential investors targeted by IIs will, by definition, be reluctant to invest in the current climate creating a risk that consumers will pay over the odds for them. As a minimum, the power under clause 8(1) to cap the cost of CfDs should be widened to include IIs.

20. Third, the Bill needs stronger safeguards to control the potential cost of the CM. As drafted, it gives the Secretary of State an unconditional power to trigger the CM. Given that many industry stakeholders still question the need for a CM and its costs will be borne by consumers, the exercise of this power must be circumscribed by explicit and stringent conditions for its use. For example, that there is (1) a manifest threat

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38 Government statistics show that since 2006 UK industrial prices have, on average, been 7–14% higher than the EU/G7 median.

39 The largest industrial consumers have been paying 17–24% more than the EU average.
to security of supply unless the CM is triggered and (2) doing so will demonstrably be in the financial best interests of consumers.

21. Fourth, the documentation accompanying the draft Bill say that a “Panel of Technical Experts” will be set up to scrutinise the advice that the system operator provides to the governments in its capacity as EMR delivery agent (eg on strike prices and the market reference price). Yet there is no mention of this body in the draft Bill.

22. We believe setting this panel up should be a statutory duty because it is an essential element of the institutional arrangements designed to control the costs of EMR. In addition, it is vital that the panel includes expertise on industrial electricity markets and consumers which can be markedly different from their domestic counterparts.

AN EXPLICIT COMMITMENT TO A TECHNOLOGY NEUTRAL APPROACH IS VITAL

23. EEF has long been sceptical of the 2020 renewable energy target, concerned that it arbitrarily commits the UK to a decarbonisation strategy that could prove unnecessarily expensive to achieve. We believe that, as far as possible, the market should be left to develop the most cost-effective mix of low carbon technologies.

24. EMR is an opportunity to lay the foundations for a technology-neutral approach post-2020. As such, EEF welcomes the government’s commitment to evolve support for low carbon power under EMR through four phases: administered prices, technology-specific auctions, technology-neutral auctions and carbon pricing only.

25. However, we are concerned that there is no reference to this evolution of the arrangements in the draft Bill, let alone a clear indication of the timetable it will follow.

26. In our view, it is essential that the Bill includes an explicit reference to the stages of EMR and provisions to provide assurance that they are being progressed as quickly as possible—eg the “Strategy and Policy Statement” must set out a timetable for each stage.

27. The government should work towards a target of introducing technology-neutral auctions in 2020. By then, several years’ operational experience of CfDs, completion of the government’s offshore wind cost reduction programme and nuclear new build should have significantly improved understanding of the relative costs of different low carbon technologies.

28. A stretching and explicit target for technology-neutral auctions will be essential to driving cost reduction and competition in low carbon technologies. Failure to set a target creates the risk that the UK persists for a long time with uneconomic technologies at the expense of the consumer despite.

29. Moving through the stages of EMR to progressively more competitive arrangements will be reliant on full and timely disclosure of the costs of different low carbon technologies by recipients of CfDs and IIs. Within phases, this information will help inform the setting of strike-prices and the running of auctions.

30. The provisions in 4(3) (for CfDs) and 14(6) must enable the full disclosure of cost-related information to the government, the system operator and the expert panel. We raise this issue because the requirements in these provisions are much vaguer than the explicit information sharing provisions relating to the CM in 25(2). The CM information sharing model should be adopted for CfDs and IIs.

STRONGER SAFEGUARDS ARE NEEDED FOR ENERGY INTENSIVE INDUSTRIES

31. From a manufacturing perspective, energy-intensive industries operating in international markets are most at risk from policy-driven electricity price rises. The government has acknowledged the threat with its commitment to develop a compensation package to offset the costs of its policies for these industries.

32. However, the package fails to address one of the most significant drivers of competitive disadvantage for UK-based companies—the cost of policies to support low carbon electricity. In contrast, in many other EU countries, such as Germany and Sweden, energy-intensive industries are only exposed to a fraction of the cost of measures to support renewable energy.

33. The new market arrangements being developed in Britain must allow for the government to reduce the exposure to EMR-related costs of manufacturing industries whose international competitiveness are at risk. For example, by allowing for different rates and amounts to be levied on different types of consumers to fund CfDs. This would be coherent with the government’s export-led growth agenda. The draft Bill’s provisions for the transitional arrangements, that appear to allow this for Renewable Obligation costs (32AC(3) and 32AC(4)), should be replicated for CfDs.

34. The decision to exercise the option would ultimately be dependent on robust economic analysis of the costs and benefits—eg the effect on those consumers who might pick up a higher share of the costs.

June 2012
Written evidence submitted by Stag Energy

Who are we?

Stag Energy is a British company and was established in 2002. With a team led by George Grant, Chairman, the company draws on a depth of experience and has created and delivered over 10,000 MW of power generation and related infrastructure projects raising over £4 billion in commercial debt financing.

Stag Energy has made a significant investment in planning the development of new UK gas generation and gas storage to help provide the flexible support necessary to ensure the security of both gas and electricity supply at an affordable cost:

— Established Watt Power, in association with the Noble Group, to develop flexible gas generation plants throughout the UK with an estimated total capacity of 1,500–2,000MW.
— Established and developed the Gateway gas storage project—an £800 million 1.5 billion cubic metre facility in the East Irish Sea, in conjunction with Petrofac. It is the first storage project in the UK to secure a gas storage licence from DECC.

In order for these and other similar projects to proceed, there is an urgent need for the Energy Bill to clarify the measures required to support security of energy supply and the transition to a low carbon economy.

What is the scope and purpose of this submission?

This submission summarises our view of the scale of the transitional risks involved and the policy actions required to reduce or eliminate these risks.

It also highlights our views on (a) the guiding principles for a viable capacity market, and (b) the most cost-effective way of encouraging new investment in UK gas storage.

We have included a Statistical Appendix which contains some evidential support in the form of charts and tables.

What are our policy recommendations?

Below is a summary of our key policy recommendations:

— Widen the scope of the Energy Bill beyond the components of the electricity market reform (EMR) package to embrace certain guiding principles relating to the wider issue of energy security with particular emphasis on underpinning new investment in the gas to power chain.

— Amend the section on Capacity Payments within the Energy Bill to include certain operational principles to improve investor confidence—namely that the capacity mechanism will be designed in such a way as to:
  (a) encourage new entrants in to the generation market;
  (b) exclude projects which benefit from FITs and other mechanisms;
  (c) evaluate bids using a range of criteria including price, reliability, flexibility and overall affordability (including carbon impact); and
  (d) accept bids based on prices bid and not on the basis of some average or arbitrary clearing price.

— Include in the Energy Bill:
  (a) an explicit recognition of the inextricable link between gas and electricity security of supply;
  (b) a target for the desired level of gas storage security; and
  (c) a commitment to the introduction of a PSO mechanism to support new storage investment in the UK. Details can follow in secondary legislation.

— A stable and predictable regulatory regime needs to be put in place as soon as possible to facilitate urgent new investment in both gas generation and storage. To this end, the commercial parameters of the capacity market and gas security support measures need to follow quickly behind the presentation of the Energy Bill to Parliament in Autumn 2012. Detailed commercial parameters can then be agreed and presented to Parliament before the end of 2012.

— Separate but obviously related investigations into key policy issues led by DECC but involving OFGEM, Treasury and National Grid need to be integrated and accelerated to speed up the policy-making process. These currently include:
  (a) OFGEM’s report on measures to improve long term gas security of supply (expected end May 2012).
  (b) DECC’s consultation on gas generation strategy (expected report Autumn 2012).
  (c) OFGEM’s consultation on Power Purchase Agreements (PPAs)—Call for Evidence June 2012—report expected Autumn 2012.
  (d) OFGEM’s initial capacity margin forecast—expected September 2012.
(e) DECC’s on-going work on capacity market design with recommendations for consultation—expected mid 2013.

Stag Energy and its expert advisers would be delighted to give oral evidence to the ECC Select Committee in order to elaborate on the issues raised in this submission and take any questions from Members.

What is our perspective?

We support the Government’s decarbonisation strategy and the need, as stated by the Minister, to put in place “stable and predictable incentives for companies to invest in low carbon technologies”.

But the transition to low carbon will take many years. The Government has said that “gas has a critical role in the short and medium term as a reliable and flexible source to meet core demands now and balance demands in the future”. But in the Energy Bill, security of supply is subservient to the low carbon goal.

The Energy Bill fails to set out policy principles which recognize the inextricable link between electricity and gas security of supply and accept that stable and predictable incentives are also required to attract long term private capital to enable new investment in gas fired generation and storage.

What are our main conclusions?

The Energy Bill should embrace the wider issue of energy security and not just electricity market reform.

There needs to be an explicit recognition of the inextricable link between electricity and gas security of supply and the need to reduce the serious risks involved in the transition to a low carbon economy.

In summary our main conclusions are as follows:

— A significant amount of new investment in gas-fired generation will be required by the end of this decade and beyond to ensure there is an adequate security of supply.

— A large proportion of this new investment will need to be flexible capacity with the ability to respond quickly and efficiently to short term variations in demand.

— Extending the life of existing nuclear plant will help maintain the level of installed capacity but it will also enhance the need for flexible plant to support the planned increase in intermittent renewable generation. New gas plant compares favorably with existing gas and coal plant in terms of its lower carbon emissions, reliability, flexibility and overall cost to consumers.

— Because of vertical integration and the absence of long term supply contracts, the market does not provide the level of price certainty required to fund new investment. Faced with the prospect of operating at below full capacity and with no long term supply agreements, opportunities for new investors to recover fixed costs from electricity sales will be minimal.

— Long term capacity contracts covering fixed costs are therefore essential to provide the revenue certainty required to access the low cost capital that the Government is seeking, and secure long term equity and debt funding to support new investment. With the right form of “Capacity Mechanism” (CM), the Government will secure significant new sources of private capital and increase competition in the generation sector.

— Given the planned curtailment of coal-fired generation, it will be the cost of gas that determines the marginal cost of electricity when the wind does not blow and/or nuclear is not available.

— If the expected increase in peak gas demand for generation is to be satisfied in a way that does not cause regular spikes in the price of gas, then more UK based flexible gas storage is required; this was a key recommendation of the Energy & Climate Change Select Committee’s report into energy security (October 2011).

— Security of electricity and gas supplies are inextricably linked and action is required on both to minimize the cost of the transition to a low carbon economy for industrial and residential consumers. Construction of new generation and storage takes several years and investors need to be confident, sooner rather than later, that stable and predictable incentives will be forthcoming. Otherwise no investment will take place.

— The Energy Bill therefore needs to include a recognition of (a) the need to attract new entrants/investment into the generation market and avoid over-reliance on the Big 6, (b) the security of supply dependency between power and gas, and (c) the need to take steps to increase the levels of flexible UK gas storage.

— Separate but obviously related investigations/consultations led by DECC, Ofgem and Treasury in connection with the capacity market, Power Purchase Agreements (PPAs), gas generation and security of supply need to be integrated to speed up the policy-making process.

What are the key transitional risks?

— A reduction in the security of supply due to closure of both uneconomic coal plant, older less flexible and efficient gas plant, and delay in the construction of new nuclear and/or renewable generation capacity.
Ev w16 Energy and Climate Change Committee: Evidence

— A sharp reduction in the availability of flexible and efficient thermal generation able to meet peak demand for electricity when nuclear and/or wind is not generating.
— A significant increase in the volatility of both gas and electricity prices due to regular and unpredictable variations in wind power generation.
— Increasing international gas demand reducing availability, and increasing the price, of winter gas.
— The inability of generators and industrial gas users to access gas when they need it at an affordable price due to the shortage of flexible UK based gas supplies.
— A delay in the much-needed construction of both new UK flexible gas generation and gas storage due to political and bureaucratic delays in establishing a stable and predictable regulatory framework to underpin new investment.

How much and what sort of new generation capacity is needed?

We have to wait until September of this year for OFGEM, in consultation with National Grid, to produce the first capacity margin estimates which will provide a four year forecast to be updated on an annual basis.

However, DECC’s own analysis to date (and agreed by most commentators) indicates that the average available capacity margin will begin to tighten following LCPD plant closures by 2015 and can only be maintained if revenue certainty is provided through a clear regulatory framework in the near future.

Our own forecasts support this prediction (See Appendix—Section A). It will be challenging to maintain a 15%–20% capacity margin without the construction of new gas fired capacity of between 12 GW and 15 GW over the coming decade. This forecast takes into account the recent announcement to consider extending the life of existing nuclear plant.

Extending the life of existing nuclear plant would temporarily support the overall margin, but nuclear is not a flexible energy resource and having a high margin of installed capacity in the system does not guarantee security of supply at times of peak demand when either nuclear or particularly wind is not available to generate.

Flexibility is critical to ensuring security of energy supplies. There will be a need for more flexibility due to intermittent wind generation, changing demand patterns with electrification of heat and transport, larger unit sizes of new nuclear plant, greater level of inflexible plant (new nuclear and CCS) and ageing coal and gas plant.

The swing in the variability of electricity demand in excess supply was 7GW in 2010 for two hours duration and 11GW for four hours. It is expected that these swings will increase to at least 9GW and 14GW respectively by 2020. (See Appendix—Section B) Furthermore, the early retirement of older less economic coal and gas plant will reduce the available despatch of thermal plant (assuming no new investment) by 15GW over a three hour period.

In conclusion, there is an urgent need to encourage investment in new flexible gas infrastructure to underpin secure and affordable gas and electricity supplies.

Why do we need incentives for new investment?

Recognizing that the current illiquid and uncompetitive wholesale electricity market does not provide reliable forward price signals to encourage long term investment, the Government has concluded correctly that some form of capacity payment is needed to provide revenue certainty for investors. But in his introduction to the Energy Bill the Minister seems ambivalent: “a capacity market will be established—if required”

This adds to the uncertainty that has prevailed in the market ever since the EMR process began. We have had discussions with a number of equity and debt providers and the consensus is that the time has come for urgent clarity in connection with providing a stable and predictable regulatory regime.

In the words of Simon Wilde, Head of Power and Utilities at Macquarie Capital:

“There is no appetite amongst equity or debt providers to fund long term infrastructure projects where returns are volatile and unpredictable. To attract new entrants into the market the proposed capacity payment contracts need to be long enough—15 to 20 years—to reduce both the cost of capital and keep capacity payments low. For lenders and equity investors payments need to be large enough to cover fixed costs. In the absence of long term supply contracts, variable load factors and gas prices setting the marginal cost of electricity, there will be few if any opportunities for operators to use electricity revenues to cover fixed costs. However if the conditions on term and cover I refer to are met then there would be a significant number of institutional investors and banks prepared to invest in the UK generation market”

We have analysed what capacity payments under the proposed capacity auction might be under certain financial assumptions and for different types of existing and new generation capacity. (See Appendix—Section C)
The figures confirm that (a) for new highly efficient gas plant, the longer the amortization the lower the capacity payment and (b) existing thermal plant have lower fixed costs but this does not imply they offer the best value for consumers.

**What is a reliable and affordable capacity market model?**

DECC in conjunction with OFGEM, National Grid and Treasury is currently looking in detail at various capacity market design options.

However, from a commercial perspective, it takes three years to secure planning permission and another three years to build a new gas generation facility. Therefore, given the relatively short timescale up to the first scheduled auction (Q4 2014), we as a new investor are very concerned that the Government is not proposing to issue a final recommended solution until mid 2013.

We believe that it would boost investor confidence and facilitate progress if some operating principles for the capacity market were agreed this year and included in the Energy Bill to be presented in the Autumn.

There are FOUR guiding principles which we would propose be included in the Energy Bill which would (a) give new entrants the confidence to proceed with their developments and (b) allow DECC time to work through the complex detail required before implementation:

1. Encourage new entrants to provide reliable, flexible and affordable new gas generation. This would enhance competition and increase market liquidity.
2. Exclude projects supported by FiTs and other mechanisms including ROCs.
3. Evaluate bids on the basis of price, reliability, flexibility and overall affordability (including carbon emissions).
4. Bids to be accepted against prices bid as opposed to some form of average clearing price.

Affordability to the consumer is a critical factor. Within the context of the capacity mechanism, there are two aspects to affordability—the initial bid price at auction and the operational efficiency of the plant. We have analysed the relative running costs of different types of existing and new plant. (See Appendix—Section D)

The chart shows that existing coal and CCGT plant have much higher running costs than new flexible aero derivative CCGT and OCGT. Our analysis shows that (a) more expensive but more flexible gas plant has a lower overall running cost at reduced levels of demand which more than offsets the difference in the capacity bid price, and (b) with a single clearing price model there is a serious risk that less efficient plant will be rewarded and new, more efficient plant will be penalized.

As the focus of the Energy Bill is to deliver our low carbon objectives, it is essential that the Capacity Mechanism assesses the carbon impact of capacity being considered under this proposed structure.

**How are electricity and gas security of supply linked?**

The draft Energy Bill highlighted the expectation of electricity demand doubling by 2050. The recent National Grid energy forecast (TBE 2011) stated that 25% of electricity generation in 2050 is likely to come from gas with CCS. These objectives dramatically increase the pressure on gas supplies to be resilient and flexible.

Gas has a critical role to play in meeting the core demand for electricity in the short and medium term and in balancing demand and supply in the future. But while the Government has accepted that the issue of a potential capacity shortage has to be addressed, it has so far failed to acknowledge that complimentary action is needed to support UK gas security of supply.

Since the EMR was launched some 18 months ago, there has been an underlying assumption that (a) gas supplies are plentiful, and that (b) despite the rapid decline in UK indigenous production, imports of gas (via LNG terminals and pipelines) will be responsive to short term variations in demand.

However, the reality of the global gas market is that there are various sources of gas supply and optional destinations under any given price scenario. There is clearly a serious risk that at times of peak demand gas consumers may not be able to access the gas they need at an affordable price. (See Appendix—Section E)

Our view is that in terms of “affordability”, the risk of short term non-availability and resulting cost of gas poses the biggest threat to escalating energy costs for generators, industrial and residential consumers.

With the downturn in economic activity, the rapid exploitation of unconventional gas in North America has resulted in adequate global gas supplies in recent years. By 2015, it is widely expected that the market will tighten. The situation is aggravated by the existence of a number of key deficiencies in the UK wholesale gas market including:

- the lack of an efficient forward gas market, where buyers can hedge contracts;
- dependency on three–four major gas importers who may choose to store or sell gas outside the UK;
- reliance on LNG imports with few long term contracts to underpin security of supply; and
— very low level of UK based flexible gas storage relative to the size of UK demand.

The planned expansion in wind generation will prompt a significant increase in the peak demand for gas. Without greater security of gas supplies, gas generators and consumers will be exposed to (a) a greater frequency of supply disruption, and (b) increased price volatility. National Grid forecast that the daily variations in gas demand due to loss of wind could exceed 100mcm/pd compared with a daily average of 153mcm/pd.

**Why the need to support more UK gas storage?**

It is generally accepted that OFGEM’s proposal to increase the cost to suppliers for being short in the balancing market will itself not solve the problem of ensuring longer term supply security. OFGEM is due to report back to DECC by the end of May on what other measures are needed.

In October 2011 the ECC Select Committee concluded: “The UK needs to significantly increase its gas storage capacity. The Government must develop a strategy for achieving this”

We believe that an appropriate security policy target, consistent with EU standards, would be 5bcm of storage with a further 5bcm based around firm flexible contracts. (See Appendix—Section G)

Storage projects are high value projects requiring consistent and strong positive price signals to attract the necessary private sector financing. Current seasonal price differentials are not wide enough to attract long term investment and are unlikely to move in the right direction over a long enough period to enable long term funding to be secured. (See Appendix—Section F). Planning, so often a hurdle for major infrastructure projects, is not an issue in the gas storage sector. Projects equivalent to over 200% of existing gas storage capacity (10bcm) already have received the necessary planning consents.

We believe that a Public Service Obligation (PSO) on shippers and suppliers would be the most cost-effective market-based method of incentivizing investment in new UK based storage.

We advocate the introduction of a PSO framework to apply to all licensed gas suppliers and shippers whereby they would have defined access to storage based on their current market share.

**What would be the impact on industrial gas users and consumers?**

UK energy intensive users support the case for greater UK gas storage and the PSO. According to Dr Laura Cohen, Chief Executive of the British Ceramic Confederation, and member of the EIUG:

“More UK gas storage together with the requirement to use it via a PSO is likely to provide the highest supply security and hence the lowest price volatility since gas is held where it can be called upon, and holding a larger volume provides a larger contingency. Furthermore supplier PSOs are already the market norm in many European countries. We accept that this will result in an increased cost for all consumers and we need to understand the implications here more fully on annual bills including costs for paying for the storage assets and contents—but it is likely to be better than some other alternatives”

We estimate that the total cost of 5bcm of new storage will be £4 billion. This, it should be noted, is a fraction of the total required infrastructure cost estimated by the national Grid for the next decade. (See Appendix—Section H)

**Why the sense of urgency?**

No new investment in either gas generation or UK gas storage will take place until clear regulatory principles are established and investors can proceed with confidence. These new assets may not be required immediately but they will be required before the end of this decade. Action is required now to put in place necessary measures to manage the risks and ensure a smooth transition to a low carbon economy.

In the interests of the wider UK economy, it is also important to note that the Government’s desire for private sector investment to underpin economic recovery will be significantly enhanced by new infrastructure investment. With a suitable regulatory framework, job creation and investment will flow into the economy and this would take place five—10 years before costs of security of supply feed through into higher energy prices.

**Statistical Appendix—List of Contents**

**Section A**

- Required Additional Gas Generation Capacity
- Required Additional Gas Generation Capacity—15% Margin
Required Additional Gas Generation Capacity—20% Margin

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Greater Need for Flexible Capacity in the Future

Section C
Selected Generation Technologies to Estimate Capacity Payments
Selected Generation Technologies—Financial Assumptions
Selected Generation Technologies—Estimated Capacity Payments

Section D
Operational Efficiencies and Affordability

Section E
Uncertainties Over Future Gas Demand/Supply and Price Volatility

Section F
Absence of Investment Signals for New UK Gas Storage

Section G
Required Level of Additional UK Gas Storage

Section H
UK Infrastructure Investment Forecasts
Relative Costs of Energy Security for UK Consumers

A - Required Additional Gas Generation Capacity

◆ In order to maintain a 15% and 20% capacity margin by 2025, we anticipate the requirement for new gas build will be 12GW and 15GW respectively

◆ Key assumptions behind this are as follows:

<table>
<thead>
<tr>
<th>Driver</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand</td>
<td>NG Base Case (Gone Green)</td>
</tr>
<tr>
<td>LCPD</td>
<td>12 GW of opt-out plant close end of 2015</td>
</tr>
<tr>
<td>IED</td>
<td>17 GW of coal and gas plant close by end of 2023</td>
</tr>
</tbody>
</table>
| Nuclear Closures | - Oldbury and Wyfia close 2012  
                    - All other existing nuclear plant gain 7 year life extensions  
                    - Hinkley Point B and Hunterston close 2022  
                    - Dungeness B closes 2025  
                    - All others close post 2025                                                                 |
| Availability | As NG Winter Outlook, other than:  
                  - 75% for Nuclear  
                  - 0% for Interconnector                                                   |
A - Required Additional Gas Generation Capacity -15% Margin

Forecast Capacity Margin using stated availabilities and NG base case demand
- with delayed new nuclear
- with delayed new nuclear and no new gas fired generation pre 2019
- with delayed new nuclear and no new gas fired generation pre 2019 and early IED closures

Availability Assumptions unless otherwise stated:
- Fossil fuel (non gas): 86%
- CCGT: 89%
- Other: 85%
- Nuclear: 75%
- Wind: 8%
- I/C: 0%
- Peaking: 97%

A - Required Additional Gas Generation Capacity -20% Margin

Forecast Capacity Margin using stated availabilities and NG base case demand
- with delayed new nuclear
- with delayed new nuclear and no new gas fired generation pre 2019
- with delayed new nuclear and no new gas fired generation pre 2019 and early IED closures

Availability Assumptions unless otherwise stated:
- Fossil fuel (non gas): 86%
- CCGT: 89%
- Other: 85%
- Nuclear: 75%
- Wind: 8%
- I/C: 0%
- Peaking: 97%
B - Greater Need for Future Flexible Generation Capacity

- The graph below is a representation of the forecast 2020 net demand swing requirement compared with that from 2010.
- The difference represents the incremental net demand swing that would need to be met from flexible sources of generation by 2020.

![Graph showing net demand swing required GW over hours elapsed from 2010 to 2020.]

Source: Redpoint / Wartsila - EMRA response to the Department of Energy and Climate Change Consultation - 10 March 2011

Note: This graph represents the 95th percentile from a frequency distribution of net demand swings simulated across the year. Significantly more extreme specific profiles will occur.

---

C - Selected Generation Technologies to Estimate Capacity Payments

<table>
<thead>
<tr>
<th>Technology</th>
<th>Capacity</th>
<th>Capex</th>
<th>Fixed Opex / year</th>
<th>Availability</th>
<th>CO2 Emissions</th>
<th>Time to Full Load from Hot Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal - with SCR retrofit</td>
<td>2,000</td>
<td>£320m</td>
<td>£65m</td>
<td>72%</td>
<td>900 kg/MWh</td>
<td>120 mins</td>
</tr>
<tr>
<td>CCGT - with SCR retrofit</td>
<td>850</td>
<td>£150m</td>
<td>£18m</td>
<td>80%</td>
<td>380 kg/MWh</td>
<td>300 mins</td>
</tr>
<tr>
<td>Coal - with SCR retrofit + 100E / kW book cost</td>
<td>2,000</td>
<td>£520m</td>
<td>£65m</td>
<td>72%</td>
<td>900 kg/MWh</td>
<td>120 mins</td>
</tr>
<tr>
<td>CCGT - with SCR retrofit + 200E / kW book cost</td>
<td>850</td>
<td>£320m</td>
<td>£18m</td>
<td>80%</td>
<td>380 kg/MWh</td>
<td>300 mins</td>
</tr>
<tr>
<td>OCGT (Aeroderivative)</td>
<td>300</td>
<td>£170m</td>
<td>£8m</td>
<td>90%</td>
<td>475 kg/MWh</td>
<td>10 mins</td>
</tr>
<tr>
<td>Gas Engines</td>
<td>290</td>
<td>£210m</td>
<td>£6.5m</td>
<td>95%</td>
<td>450 kg/MWh</td>
<td>5 mins</td>
</tr>
<tr>
<td>Small CCGT</td>
<td>250</td>
<td>£185m</td>
<td>£8m</td>
<td>90%</td>
<td>400 kg/MWh</td>
<td>15 mins</td>
</tr>
<tr>
<td>Large CCGT</td>
<td>850</td>
<td>£400m</td>
<td>£15m</td>
<td>85%</td>
<td>350 kg/MWh</td>
<td>180 mins</td>
</tr>
</tbody>
</table>

Source: Stag Energy
C - Selected Generation Technologies Financial Assumptions

<table>
<thead>
<tr>
<th>Driver</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset life</td>
<td>30 years (15 years SCR (refurb))</td>
</tr>
<tr>
<td>Target DSCR</td>
<td>1.30x</td>
</tr>
<tr>
<td>Target debt</td>
<td>75% of Capex</td>
</tr>
<tr>
<td>Margin</td>
<td>250bp</td>
</tr>
<tr>
<td>DSRA</td>
<td>6 months of first year debt service</td>
</tr>
<tr>
<td>Real base rates (adjusted for 2% inflation)</td>
<td></td>
</tr>
<tr>
<td>5 year</td>
<td>(0.3%)</td>
</tr>
<tr>
<td>10 year</td>
<td>0.5%</td>
</tr>
<tr>
<td>15 year</td>
<td>0.9%</td>
</tr>
<tr>
<td>20 year</td>
<td>1.1%</td>
</tr>
<tr>
<td>25 year</td>
<td>1.2%</td>
</tr>
<tr>
<td>Tax rate</td>
<td>23%</td>
</tr>
<tr>
<td>Depreciation</td>
<td>30 Year (or asset life)</td>
</tr>
<tr>
<td>Energy Sales</td>
<td>Cover variable operating costs only</td>
</tr>
<tr>
<td>CM Payment</td>
<td>Covers all fixed costs (i.e. all debt costs)</td>
</tr>
</tbody>
</table>

Source: Stage Energy and Macquarie

C - Selected Generation Technologies Estimated Capacity Payments

Average Contract Prices

- Graph showing the Average Contract Price Under Contract Period (£'000/MW)

![Graph showing Average Contract Price](image)

- OCCT (Aeroderivative)  - Gas Engines
- small CCGT            - Large CCGT
- Coal with SCR Retrofit - CCGT with SCR Retrofit
- Coal - with SCR retrofit + £100 / kW - CCGT - with SCR retrofit + £200 / kW
D - Operational Efficiencies and Affordability (Incl. Carbon Costs)

Source: Moffatt Associates

E - Uncertainties Over Future Gas Demand/Supply and Price Volatility

Comments:
- Annual demand forecasts vary by +/- 25%
- Daily swing forecast to increase dramatically as more intermittent power generation commissioned. By 2020, swing requirements could exceed 40% of peak day demand.
- Price volatility expected to increase in line with demand volatility, and to become common throughout the year as opposed to a winter issue.
- LNG to meet ~45% of demand by 2020

There is a growing need to protect consumers from price volatility and supply interruption as the UK becomes reliant on distant sources of supply with few long term contractual commitments.

Industrial and Domestic consumers acknowledge the need for “insurance” cost to maintain security of supply and that physical storage of gas within UK borders provides by far the highest level of security.
F - Absence of Investment Signals for New UK Gas Storage

- The market is not providing price signals to support investment, and forward price curves have no materiality (depth) further out than 2 years.
- Credit capacity constrains long term contract commitments.

G - Required Level of Additional UK Gas Storage

Gas Storage Deliverability

30 Days

Peak Day winter demand

Average winter demand

Stag Energy supports the Select Committee view that GB should ensure sufficient storage capacity to cover 30 days of average winter demand - 10.5 bcm

Source: Stag Energy
H – UK Energy Infrastructure Investment Forecasts

- National Grid Ten Year Statement (TYS) 2011 forecasts energy infrastructure capital investment of ~£40bn:
  - Transmission - £19.6bn
  - Electricity - £14 bn
  - Gas - £ 5.6bn
- National Grid investment forecast for generation over the next decade totals over £180bn (see below).
- If the select committee recommendation were followed to double GB gas storage capacity (5-6bcm of additional capacity), the capital cost is estimated to be ~£4bn.

![Figure 3.1 - Changes in Generation Capacity, 2011/12 to 2025/26](source)

H – Relative Costs of Energy Security for UK Consumers

- A simplistic assumption of capital costs amortised over 30yrs, provides a relative indication of the level of cost associated purely with anticipated capital investment over the next 10-12 years:
  - Electricity Generation £6.26bn
  - National Grid £1.31bn
  - Gas Storage £0.13bn
- If it is also assumed that costs will be met 50/50 be industrial/commercial and domestic consumers. On the basis that there are 20 million domestic households, a simple indication of the capital cost burden per household may be calculated:
  - Electricity Generation £156/yr
  - National Grid £ 33/yr
  - Gas Storage £ 3/yr
- It is clear that some of the investment assumptions are in question (eg timing and magnitude of new nuclear generation) and that the importance of gas in covering any shortfalls or intermittency.
- The relative cost to consumers of dramatically increasing the level of gas security implies that it should almost be without question.

<table>
<thead>
<tr>
<th>2012 – 2022</th>
<th>Investment Ebn</th>
<th>Amortised Cost over 30yrs (Ebn/yr)</th>
<th>Amortised Cost: household (E/yr)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewables</td>
<td>8.13</td>
<td>0.27</td>
<td>6.78</td>
</tr>
<tr>
<td>Wind</td>
<td>85.83</td>
<td>2.86</td>
<td>71.53</td>
</tr>
<tr>
<td>Coal</td>
<td>12.00</td>
<td>0.40</td>
<td>10.00</td>
</tr>
<tr>
<td>CCGT</td>
<td>11.94</td>
<td>0.40</td>
<td>9.95</td>
</tr>
<tr>
<td>Nuclear</td>
<td>69.96</td>
<td>2.33</td>
<td>58.30</td>
</tr>
<tr>
<td>Total</td>
<td><strong>187.87</strong></td>
<td><strong>6.26</strong></td>
<td><strong>156.96</strong></td>
</tr>
<tr>
<td>National Grid</td>
<td>19.60</td>
<td>0.65</td>
<td>16.33</td>
</tr>
<tr>
<td>Transmission</td>
<td>14.00</td>
<td>0.47</td>
<td>11.67</td>
</tr>
<tr>
<td>Gas</td>
<td>5.60</td>
<td>0.19</td>
<td>4.67</td>
</tr>
<tr>
<td>Total</td>
<td><strong>39.20</strong></td>
<td><strong>1.31</strong></td>
<td><strong>32.67</strong></td>
</tr>
<tr>
<td>Gas Storage</td>
<td>4.00</td>
<td>0.13</td>
<td>3.33</td>
</tr>
</tbody>
</table>

* Capital Cost estimates from Mott MacDonald
** UK Electricity Generation Cost Report commissioned by DECC

** Amortised cost per household assumes 50% of cost met by domestic consumers and 20 million homes.
Written evidence submitted by the RSPB

1. SUMMARY

The RSPB is deeply concerned that the draft Energy Bill threatens to undermine UK efforts to reduce greenhouse gas emissions, meet its renewable energy targets, and be an international leader on climate change. We recommend that:

— A decarbonisation target of 50 gCO2/kWh by 2030 for UK electricity is introduced, and the UK supports an EU 2030 renewable energy target.
— The proposal for an Emission Performance Standard is reformed so that it is reduced to 100 g CO2/kWh by 2025, applies to all plant, has only a limited grandfathering provision, and counts biomass as 285 gCO2/kWh rather than zero.
— The proposal to introduce Contracts for Difference in 2017 is reviewed urgently to ensure that it is compatible with continued investment in sustainable renewable energy, and consideration is given to alternative models if necessary.

2. INTRODUCTION

Climate change is already affecting wildlife in the UK and globally, and it threatens to drive future biodiversity loss unless urgent action is taken to reduce emissions and keep the world within “safe” levels of climate change. One study published in *Nature* indicates that climate change could cause up to 35% of species to be committed to extinction by 2050. The RSPB therefore strongly supports the UK’s greenhouse gas reduction targets and recognise the critical role that renewable energy will play in delivering them as part of a wider package that prioritises energy savings.

The huge amount of new infrastructure needed to decarbonise our energy supply can, however, have a detrimental impact on wildlife in the UK if poorly located and/or designed. The Government has committed to reversing biodiversity decline by 2020. We believe, therefore, that Government has a duty to ensure these targets are met with minimal environmental impact.

The RSPB is unique amongst UK NGOs because we engage with individual applications for renewable and other energy infrastructure across the UK, advising developers how they can minimise the impact of their developments. We will also object to developments when their environmental impacts are likely to be unacceptable. Since 1990, we have placed sustained objections to only 5.7% of wind farm applications.

3. DECARBONISATION AND RENEWABLE ENERGY TARGETS

We believe that the overriding aim of EMR should be to deliver an average emissions intensity of 50 gCO2/kWh by 2030 in the most sustainable way and at reasonable cost to the consumer. This reflects the Climate Change Committee’s advice on the fourth carbon budget and is critical to ensuring the UK remains on target to delivering its commitment of an overall 80% reduction in emissions by 2050.

We are deeply disappointed that DECC have failed to include a proposal for a decarbonisation target in the Energy Bill, and are concerned that its absence will further feed uncertainty around the future of the low-carbon sector by indicating a lack of Government commitment. We recognise DECC’s concern that a target would lock the UK into a decarbonisation path that front loads emission cuts in the electricity sector, but it must be seen alongside the overwhelming evidence that this is the most feasible and cost-effective route, and the cost of the uncertainty created by failing to commit.

Finally, a European-wide renewable energy target for post-2020 is needed to give the wider renewable energy sector the certainty needed to invest in the European market. We are disappointed of reports that the UK has been ambivalent about such a target in EU negotiations to date.

4. AN EMISSION PERFORMANCE STANDARD

We continue to support an EPS of 300 g CO2/kWh that is reduced to 100 g CO2/kWh by 2025. This would ensure that the carbon intensity of the power sector reduces at least in line with the recommendations from the Committee on Climate Change. The Committee recommends that emissions from the power sector need to be reduced by around 40% by 2020, and by around 90% by 2030. This will require the carbon-intensity of the electricity sector to fall to around 50 gCO2/kWh in 2030.

An EPS that is progressively reduced over time according to a clear timetable is not simply a backstop. It provides certainty to the industry by sending a clear signal to developers as to what kind of plant will be acceptable in the future, directing investment and innovation. It also prevents the potential lock-in to unabated gas, to which the Government’s current proposal risks leading. Furthermore, as noted in the ECC Committee’s own 2010 report on an EPS, a strong EPS would send an important signal internationally, positioning the UK as a leader on climate change and encouraging other countries to follow suit. A weak EPS, as currently proposed, would have the opposite effect.

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We believe that the EPS must apply to all plant, and the demonstration plant should not be excluded, as currently proposed. A new partial CCS plant has significant greenhouse gas emissions associated with it, which need to be controlled and reduced rapidly over time. As an example, the proposed 1852MW coal plant in Hunterston, Scotland, would emit 587–650gCO₂/kWh, and emissions from year one would be equivalent to adding 63% to Scotland’s annual power sector emissions.\textsuperscript{41} Without limiting these emissions via the EPS, this exemption effectively risks undermining our ability to meet our carbon budgets.

We are particularly concerned that the grandfathership of the EPS will lock the UK into unabated gas and partially abated coal, which is incompatible with our longer-term emission targets. It will effectively result in apparently cheap infrastructure now that is a burden for future Governments and consumers, who may be left with a difficult decision of either missing the carbon budgets or taking on the costs of early retirement or retrofitting plants with CCS. We therefore believe that, as an absolute minimum, the EPS should not be guaranteed beyond 2025, which would provide a balance between investor certainty and our ability to meet our carbon budgets.

We strongly oppose the proposal to zero rate emissions from biomass under the EPS because it does not reflect actual emissions from biomass, is incompatible with existing Government policy on biomass, and may lead to perverse outcomes. DECC explains that “While biomass is not carbon neutral, it is regarded as low-carbon, as the lifecycle emissions of biomass plants are significantly lower than those of fossil fuels”.\textsuperscript{42} Conversely, DECC’s Bioenergy Strategy notes that “Bioenergy is not automatically low carbon, renewable or sustainable ... some forms of bioenergy could result in greater greenhouse gas emissions than fossil fuels”.\textsuperscript{43} DECC have proposed an emission standard for biomass of 285 gCO₂/kWh. Whilst we consider this to be too high, whilst we consider this to be too high, we recommend that this level of emissions is assumed for the purposes of the EPS. Failure to do so would undermine the EPS as actual emissions from a plant will be allowed to exceed the supposed limit, and it may result in new coal/biomass plant that require unsustainable quantities of biomass to operate.

Finally, we note and have responded to the recent Scottish Government consultation on the possibility of a distinct Scottish Emissions Performance Standard. Regardless of the different approaches to energy policy at devolved and UK level, the fact that the Scottish Government is considering this possibility is surely a further indication that the EPS as proposed by DECC would make little contribution to reducing power sector emissions to the levels recommended by the UKCCC.

5. SUPPORT FOR RENEWABLE ENERGY

The deployment of renewable energy, alongside CCS and energy efficiency, is fundamental to climate change mitigation, and to the UK being a global leader of the low-carbon transition. We are deeply concerned that Energy Bill proposals threaten to hold back deployment, both by causing short-term uncertainty, and by creating a system that may not work for renewable energy. Whilst we recognise that Contracts for Difference theoretically offer a cost-effective means of supporting low carbon energy, in practice they may discriminate against renewable energy operators because of the uncertainty involved in predicting output from intermittent sources, and against smaller operators, given the complexity of the system. We note, for example, the concerns raised by Ecotricity and Good Energy with DECC over this system.

Furthermore, we are concerned that the implications of auctioning and competition between renewable energy developers for individual projects and the planning and consent system have not been properly considered. We understand that projects bidding for contracts will require all consents and permissions in advance, a process that can take many years and requires considerable up-front investment, particularly for offshore wind. The expectation is that the developer will make this initial outlay without knowing the strike price that will be available for the project, or even whether a contract will be accessible at all. As well as creating a new uncertainty for developers, we are concerned that this may lead to reduced openness and consultation from developers, who will be keen to keep project details commercially confident from their competitors. Our experience suggests that the more transparent and consultative developers are, the more likely it is that development will be acceptable from an environmental and local community perspective.

We therefore suggest that DECC’s proposals to introduce the CfD system in 2017 are reviewed urgently to ensure that they are compatible with continued investment in sustainable renewable energy, and consideration is given to alternative models if necessary. We suggest that the following criteria must be met by CfDs if they are to be taken forward: they must be predictable, simple, transparent, Government-backed, and compatible with the planning system.

6. DEMAND REDUCTION

Energy efficiency and demand reduction provide a cost-effective and the most environmentally-sound means of reducing our emissions. The RSPB is therefore disappointed to see that proposals for demand reduction are absent. We believe that EMR should put equal emphasis on demand reduction as it does on low carbon

\textsuperscript{41} RSPB, FoE Scotland, WWF (2011) The climate implications of the proposed Hunterston Power Plant
\textsuperscript{42} DECC (2011) Planning our electric future: a White Paper for secure, affordable and low-carbon electricity p. 54
\textsuperscript{43} DECC (2012) UK Bioenergy Strategy p. 14
generation, through, for example, an efficiency feed-in tariff, and a capacity mechanism designed to encourage demand response.

We understand that there are serious challenges involved in introducing such mechanisms. For example, Government may need to proactively seek out demand side opportunities because there is an immature market for efficiency, and further work needs to be done to establish fair and evidence based baselines. We note, however, that similar mechanisms in the US have demonstrably reduced demand and prices.

Written evidence submitted by the Global Warming Foundation Policy

1. With the publication of its draft Energy Bill, the government has announced its intention to reverse even further, and decisively the course of energy deregulation.

2. The Global Warming Policy Foundation warns that any attempt to turn back the clock to the dark period of centralised energy planning will not only damage Britain’s economy, but will almost certainly end in failure, just like other attempts to impose a centralised system of energy controls have failed in the past.

3. The Energy Bill constitutes a disastrous move towards a centrally planned energy economy with a high level of control over which forms of energy generation will be favoured and which will be stifled. The government even seeks to regulate the prices and profits of energy generation.

4. The overriding goal of the Energy Bill is to promote investment in expensive, low-carbon forms of electricity generation. It outlines measures to reshape the electricity market and encourage investment in uneconomic energy generation that would not otherwise be invested in.

5. At the heart of the Queen’s Speech was a government promise to introduce policies that aim to help families and businesses. But this is seriously undermined by its commitment to an Energy Bill that will significantly increase the cost of electricity.

6. Most energy analysts agree that these proposals will hike up energy costs for both households and businesses, while injecting more than £100 billions into areas of green energy generation, such as wind power, that are inherently unreliable.

7. The latest forecast by Credit Suisse estimates that power prices in the UK will increase by more than 60% by 2020 if these measures are introduced. At a time where many people are already facing economic hardship, the government’s energy bill will have a significant and growing adverse impact on both business costs and living standards.

8. The government bases the case for green—and more expensive—energy in large part on the misguided assumption that gas prices will significantly rise in the future. This argument is no longer credible in the light of the growing international abundance of shale gas, not to mention the likely shale gas potential in Britain itself.

9. North American gas prices have dropped from $15 per million British thermal units to below $2 in just seven years. This price collapse is an indication of things to come in Europe, once its own vast shale deposits are allowed to be extracted.

10. According to a recent report (Golden Rules for a Golden Age of Gas) by the International Energy Agency (IEA), a global boom in unconventional natural gas over the next 20 years together with the influx of cheap natural gas from the US will increase competition on global gas markets and cut gas prices by up to 30% by 2020. The main benefit for Britain will be that the significant growth of exports of liquefied natural gas (LNG) will reduce gas import prices, regardless of the magnitude of Britain’s own shale gas development.

11. In the light of this, it is a matter for deep concern that the Government has told Parliament that it cannot guarantee that it will put no further impediments in the way of the rapid development of UK shale gas. In the meantime, there are warnings that a third of UK families may be struggling to pay their energy bills by 2015 as a result of further price increases.

12. At a time when most major economies (eg USA, Germany) are gradually returning to cheap and abundant fossil fuels, mainly in form of coal and natural gas, Britain alone seems prepared to sacrifice its economic competitiveness and recovery by opting for the most expensive forms of energy.

13. In any case, the complex and inconsistent measures of the draft Energy Bill are unlikely to provide investors with the certainty they require to make substantial investments.

14. The proposed contracts for difference (CfDs) are contracts between the generator and the government, where the government will make a top-up payment to ensure the generator receives the agreed tariff. A consequence of these contracts is that utility companies will be obliged to purchase electricity at higher prices for green energy from the generator. This cost in turn will be passed on to consumers. There will be a strong incentive to opt out of investing in network electricity supply in order to avoid the high costs of electricity due to renewable energy charges.
15. The contracts for difference (CfDs) are extremely complex and convoluted. Neither the profit guarantees offered for different technologies nor the duration of CfDs is known. The government has not provided any numbers and price guarantees for its favoured green technologies. Investors are therefore thrown into limbo since they cannot calculate whether expensive renewables or nuclear reactors are viable and can compete with less expensive conventional power plants.

16. This lack of clarity will inevitably lead to constant government amendments and continual intervention, which will act as additional barriers to new entrants in the UK electricity market.

17. In the light of government indecision and investors’ uncertainty, the Energy Bill proposes to give the Secretary of State the authority, without any parliamentary approval, to offer green energy companies “letters of comfort,” promising them that they will be guaranteed profits once the specifics of CfDs are finalised and introduced. This is both arbitrary and unconstitutional.

18. The Carbon Price Floor (CPF) is a unilateral measure that sets businesses a minimum price for emitting CO2. The UK will therefore have a unilateral and additional carbon price that is higher than the price of the EU Emissions Trading Scheme. This means that UK industry, which is competing not only with other EU countries, but also with the rest of the world (which has no ETS burden at all), will face extra costs of £250 million in 2013 and £1.2 billion annually by 2020.

19. The government’s Energy Bill is influenced by the UK’s unilateral renewable energy and carbon dioxide (CO2) emissions targets, as well as maintaining the claim to be the “Greenest Government ever.” The energy bill will hike up both business costs and the cost of living to consumers, while injecting money into areas of energy generation, such as wind power, that have proven to be unreliable providers of electricity.

20. In the absence of an international agreement on CO2 emissions, the Energy Bill would make UK businesses and the economy as a whole, less competitive. It would impose an additional and substantial penalty on manufacturing in Britain, and act as a further deterrent to investment in manufacturing.

21. Moreover, it is doubtful that what is proposed is actually workable, let alone economically viable. After all, similar interventions in the past have proved unworkable as well as uneconomic. They will almost certainly prove to be highly unpopular when the costs of these measures are reflected in energy bills.

June 2012

Written evidence submitted by Statoil UK Limited

Statoil UK Limited (STUK) supports the Government’s policy to move the UK to a low carbon electricity market, and we welcome the opportunity to respond to this call for evidence on the draft Energy Bill published on 22 May 2012 and participate in an on-going constructive dialogue on key energy policy issues. We also welcome the introduction of the Strategic Policy Statement which STUK hopes will provide greater certainty to participants in the UK energy markets. We would urge that the first statement is formulated and shared with the industry at the earliest possible opportunity.

As the largest supplier of gas from the Norwegian Continental Shelf to the UK, Statoil takes a direct interest in the UK electricity market. Our interest is further reinforced by our recent investments in the Sheringham Shoal offshore wind farm, as well as our role as a development partner in the Dogger Bank offshore wind zone.

Our concern is that the supplementary documentation issued at the same time as the draft Bill provided little clarity for potential investors on several key issues. We believe that clarification of the issues described below is fundamental to investor confidence.

KEY POINTS

1. Contracts for Difference:
   — The proposed timing for the award of CfDs immediately before FID will make investments in large offshore wind farms unattractive as significant investments are required in the consenting process and to mature the project to FID.
   — The postponement in the decision on the value of ROCs post 2027 to 2015 creates additional uncertainty for investors faced with investment decisions prior to 2015.
   — Continuing assessment of the single counter party model to ensure bankability.

2. Lack of detail and progress in the design of the capacity mechanism, key areas need to be developed as a priority, notably:
   — Assessment of capacity required.
   — Duration of contracts.
   — Payment levels.
Contracts for Difference

Statoil sees the merit of introducing a Contract for Difference Feed-in tariff (CID) for renewable projects which could add increased certainty both to investors and consumers. We have however some important reservations to the proposals that we would like to use the opportunity to address.

In our view the proposals regarding the timing for award of CFDs will make investments unattractive. As proposed, a developer of a renewable energy project may apply for a CFD immediately before Financial Investment Decision (FID). This is however too late for an offshore wind developer, especially those with large zonal agreements from the Third Round. In the period between receiving consent and FID, developers will spend substantial amounts maturing large offshore wind projects through detailed engineering, gathering geotechnical information and through entering into supply contracts for long lead-time items. These costs could amount to as much as GBP 40–50 million.

We believe that developers of large wind farms need confirmation regarding their ability to enter into a CFD already from time of consent. We recognise that entering into a CFD at such an early stage would require obligations to progress the project according to an agreed plan and are happy to engage with DECC to work out further details on this matter.

This expenditure of risk capital after receiving consent comes in addition to that spent during the consenting process itself. For large zones, this can be in the order of GBP 100 million or more. Hence we are worried about the signals given by DECC regarding “cost controlling measures” for CFDs which in reality is a strong signal on rationing of contracts. While we fully understand the need to reduce the cost to the consumer and ensure the affordability of future renewable generation, we are worried that such signals may have substantial negative effects on the development of offshore wind projects and of a renewable industry supply chain. The major commitments under the offshore wind zone agreements can only be justified if developers have long term visibility on the opportunity to build the wind farms and retain the ability to optimize projects in a zone through phased, sequential developments. Rationing—or auctions if brought in too early—would jeopardise this.

We also note that the decision on the value of ROCs post 2027 is postponed to 2015. We believe this is too late as it introduces unnecessary uncertainty for investors facing RO-based investment decisions before 2015. Furthermore, we believe that flexibility with respect to extending the registration under the RO post 2017 should be considered should the timing of the introduction of CFDs be delayed.

It is important that the legal framework and payment model proposed in the Bill is “bankable” and is suitable both for investors and suppliers. We observe that DECC has taken note of the substantial reservation from industry regarding the proposed model based on an instrument issued by statute and has stated a willingness to continue to assess an alternative “single counterparty” model. We support further discussion in finding a legal framework that is fit for purpose.

Capacity Mechanism

We welcome the Government’s recognition of the need to incentivise additional generation capacity beyond energy sources supported by the existing Renewables Obligations and future CFD scheme. However, the lack of clarity and commitment expressed in the supporting documentation to the draft Energy Bill on the capacity mechanism, introduces a greater level of uncertainty into potential investment decisions in gas-fired power. It is STUK’s view that this uncertainty has further undermined the ability of investors to effectively calculate their return in the current market outlook. Whilst we appreciate the difficulties associated with the process and the forming of industry experts groups to progress the design, it is of concern that the expert group, in our view, under represents participants in different parts of the gas supply chain. The design of the capacity mechanism is in STUK’s view, key to incentivising gas generation, notably, how the capacity requirement is calculated, the level of payments and the duration of contracts. If the mechanism is entirely focussed on the provision of peak capacity, to be determined by National Grid and verified by a panel of experts, then it is in essence paying generators not to generate outside peak times. This in itself would require significant levels of capacity payments to justify the project economics of new plant with significantly lower load factors. It is our view that the length of contracts should match as closely as possible to the approximate 25 year plant life of CCGT’s. Obviously, the level of CFDs awarded to other base-load generation providers will also have a strong bearing on the role of gas as well, as it competes with these technologies.

Statoil UK believes that gas still has a vital role to play in the UK energy mix and therefore welcomes the Government’s call for evidence on the role of the gas in the electricity market. We will provide a comprehensive submission to the gas generation call in due course.

Statoil UK Limited welcomes the opportunity to contribute to this process. Please do not hesitate to contact me if you require any further information.

June 2012
Written evidence submitted by Carbon Capture and Storage Association

Introduction

The Carbon Capture and Storage Association welcome the opportunity to respond to the Energy and Climate Change Committee call for evidence for pre-legislative scrutiny into the draft Energy Bill. As requested in the call this submission details the CCSA's initial response to the Electricity Market Reform (EMR) package contained in the draft Energy Bill. The CCSA will provide further comments in due course as thinking on the draft bill develops.

The CCSA brings together a wide range of specialist companies across the spectrum of Carbon Capture & Storage (CCS) technology, as well as a variety of support services to the energy sector. The Association exists to represent the interests of its members in promoting the business of CCS and to assist policy developments in the UK and the EU towards a long term regulatory framework for CCS, as a means of abating carbon dioxide emissions.

Summary

— The CCSA welcomes the Electricity Market Reform package and is supportive of a number of developments including the Feed in Tariff Contract for Differences (FiT CfDs).
— Designed appropriately, the FiT CfD will be the primary tool to drive the deployment of CCS in the UK power sector.
— The EMR must send strong, clear signals to CCS project developers, investors and the CCS supply chain that the EMR will support CCS. Failure to do so risks the future prospects of a UK CCS industry.
— The CCSA believes that there are questions on the viability of the proposed FiT CfD contracts for CCS projects.
— The CCSA also believes that the investment signal from the EMR for CCS projects developers is extremely weak providing virtually no detail on how CCS projects might be supported. The CCSA may be able to submit more thoughts on this matter to the Committee in due course as the principles of EMR develop.
— The CCSA has outlined a number of issues and recommendations that need to be reflected in the design of CfD contracts for CCS projects.

Overarching Comments

1. The CCSA welcomes the Electricity Market Reform and is supportive of a number of developments including the Feed in Tariff Contract for Differences (FiT CfDs). Designed appropriately, the FiT CfD can be an effective mechanism to support the deployment of mature, low-carbon technologies. Of the four EMR instruments it is the FiT CfD that will be the primary tool to drive the deployment of CCS.

2. Multiple CCS project developers are currently applying for support as part of the DECC CCS Commercialisation Programme launched on 3rd April 2012. However, given the funding constraints of the programme it is clear that the majority of projects will not receive the support necessary to be developed. It is therefore critical that the EMR sends strong, clear signals to CCS project developers, investors and the CCS supply chain on the EMR support that will be made available to CCS. This is necessary to ensure that the projects not selected under the Commercialisation Programme are kept alive and taken forward for development at a later stage but within a commercial timeframe.

3. The CCSA believes that the draft Energy Bill and its supporting documents raise questions on the viability of the proposed FiT CfD contracts for CCS projects. Failure to develop viable FiT CfD contracts for CCS would have the consequence of stalling the development of CCS in the UK. This issue is considered in more detail below.

4. The CCSA also believes that the investment signal from the EMR for CCS projects developers is extremely weak providing virtually no detail on how CCS projects that are not supported by the Commercialisation Programme might be able to receive support. The CCSA may be able to submit more thoughts on this matter to the Committee in due course.

5. To deliver the EMR objectives of a secure, low-carbon and affordable electricity system requires the deployment of fossil fuel plants fitted with CCS alongside renewables and nuclear energy. To achieve this FiT CfDs have to be viable for each of the low carbon technologies. The CCSA's view is that much of the EMR documentation is based on the paradigm that low-carbon technologies have high capital costs and low operational costs. This view risks the development of instruments that are not able to deploy the full range of technologies necessary to meet EMR objectives.

FiT CfD Design

6. CCS projects have a number of specific characteristics that need to be reflected in the design of CfD contracts.
7. The cost of a CCS project comprises a high capital cost combined with a high operating cost. The cost profile of CCS projects needs to be carefully considered in the construction of the CfD as the contract has to support both the capital cost and operating cost of the project. The capital costs of a CCS project is high due to the additional costs of constructing the capture, transport and storage assets while the operating costs are also significant as the operation of the CCS chain requires additional energy inputs, for example to operate the capture unit, as well as other operational costs, for example monitoring of the storage site and costs associated with the required financial security provisions. This cost profile contrasts with some other sources of low-carbon generation that face high capital costs but low operating costs.

8. Market risk creates uncertainty on the CCS plant’s future load factor as a result of the increasing capacity of intermittent and inflexible generation sources expected on the system. Therefore the CCSA does not believe that the baseload metered output contract model currently described in the Energy Bill is viable for CCS projects. The metered output model means that while the plant would notionally be on a baseload CFD the actual plant load factor might be substantially lower if the plant is unable or not required to despatch (ie the plant is available to operate but is unable to do so as a result of conditions in the electricity market). Fossil fuel plants, including CCS, face a significant market risk in the future as significant volumes of intermittent, inflexible and low marginal cost capacity is added to the system generating uncertainty on the plant’s future load factor and revenues. This is a critical issue on which the CCSA would welcome further dialogue.

9. The CCSA believes that the appropriate market model for the first CCS plants should be as baseload plant as this enables the plant to be operated in the most economically efficient manner. However, fossil fuel plant with CCS is ultimately likely to be required to operate with a degree of flexibility to provide the valuable system support services which this technology can deliver and further thought should be given to how this can be properly incentivised.

10. CCS projects have a long-operating life (multiple decades). The long operating life of CCS projects has implications for the length of the CFD contracts. The CCSA believes that the current proposal for a 10 year CFD contract for the first projects is completely inappropriate and too short for CCS projects. As a general principle the CCSA believes that the length of CFD contracts for CCS projects should match the operating timescales—ie be for an extended period of time, perhaps 20—25 years. Longer contract terms are likely to be preferable as they more closely reflect the operational life of the asset and, as the revenues are spread over a longer period, should result in a lower cost for consumers than a shorter contracting period. However, in practice individual projects may require greater flexibility on the length of the CFD contract. The CCSA believes that, initially at least, the length of the FiT CFD contract should be determined separately for each project on the basis of negotiations between the Government and individual projects. It seems inconsistent that unabated gas plant will be guaranteed freedom to operate as such for 30 years whilst abated gas or coal plant would only be guaranteed a commercial lifespan of 10 years.

11. CCS plants are exposed to the international prices of fossil fuels which are highly uncertain over the operating life of the asset. The CCSA emphasises the importance of providing the project developer with the option to index a part of the CFD strike price to the costs of the plant’s fossil fuel inputs. Failure to incorporate fuel price indexation would expose UK CCS plants to global fossil fuel commodity prices and risks rendering CFDs an unbankable support mechanism. The CCSA is not aware of any fuel supply contracts which would fix the fuel price for a period of time equivalent to the likely length of the CFD contract. To attempt to hedge such a risk in the commercial market is likely to be very expensive and the indexation of the strike price to fossil fuel price could ultimately benefit electricity consumers through a lower strike price.

12. The CCSA welcomes the Government’s position that it is minded to include the option of fossil fuel price indexation for the first CCS projects under the commercialisation programme, however it is essential that the option to index strike prices to fossil fuel prices is extended to subsequent projects.

13. Determining the appropriate reference price is of central importance to the viability of the CFD model. The CCSA believes that the year-ahead baseload price is not an appropriate reference price. There is not adequate liquidity in the current market or confidence in this as a reference price. There is concern about current market liquidity and whether proposed reforms will be sufficient to increase liquidity to the extent required. For these reasons the CCSA advocates a shorter reference price and requests further discussion with the Government on the appropriate reference price for CCS projects and the proposals to improve market liquidity before taking a final position on this matter.

14. There are inherent uncertainties and key additional risks, associated with the first CCS projects. These include:

(a) The added uncertainty on the ultimate capital costs of demonstration projects due to completing the first of a kind electricity generation, capture, transport and storage value chain.

(b) The availability of the full CCS chain (particularly acute in the early years of operation as the commissioning learning curve is undertaken).

The CCSA welcomes the Government’s recognition of these challenges and the proposal that these should be reflected in the CFD terms which should be negotiated on a project by project basis. However, it is by no means clear how these risks can be dealt with by the CFD alone. For example, if the base generating plant is
15. The CCS chain may have different owner structures along the chain: power plant, transportation provider and storage provider. The transportation and storage providers will be required to make significant investments and incur operating costs and liabilities over a long period of time. Providers of the infrastructure will need strong commercial arrangements in place to meet the requirements of investors and banks. Under the terms of the CCS Directive the storage providers will have responsibilities for the storage sites which extend for multiple decades after the injection of carbon dioxide has ceased. The CCSA would like to highlight that the storage providers responsibilities and liabilities will extend for decades after the CfD, power sales and injection of carbon dioxide has ceased. Infrastructure providers would also be exposed to the future carbon price. The CCSA may be able to submit more thoughts on these matters to the Committee in due course. The CCSA understands that work is commencing on the Financial Security and Financial Mechanism requirements of the CCS Directive and the successful resolution of this issue will be crucial if potential CCS project developers are to fully understand the risk/reward balance of developing UK CCS projects.

June 2012

Written evidence submitted by Chris March

ENERGY TARIFFS FOR DOMESTIC CUSTOMERS

1. There has been much talk recently about energy costs and fuel poverty. I have over the last few years thought long and hard about these issues (Although retired now I was the Dean of the Faculty of the Environment at Salford University and have and still write on environmental issues concerned with buildings)

2. Perhaps my thoughts might be of use in formulating policy.

3. Suggested outcomes required:
   — Energy providers need to make proposed profit margins
   — The less well off need affordable heating and lighting
   — The environmentalists require a reduction in the use of energy

4. Currently there are only two cost bands for most domestic users: the more expensive for the first units used followed by a less expensive for the remaining irrespective of the amount used.

5. The proposal is to reverse the current tariff regime by having the lowest rate for the first quantity of energy used and increasing cost bands as more energy is consumed.

6. The energy providers have argued that the initial amount consumed is higher because of standing charges such as the meters etc. My argument is that this is a red herring, all that matters is that the annual profit made is in line with that required by the companies and their shareholders.

7. There is clearly a significant issue about fuel poverty accepted by all political colours. By providing an initial cost band of sufficient width and cheap enough to be affordable, should go a long way to alleviate this problem for a majority of those currently suffering. Clearly if fuel is cheaper, then those currently being very economical with its use will consume more resulting in greater depletion of energy resources.

8. However, by having several bands of usage, increasingly more expensive as more is used, there would be a disincentive to heat and light rooms and spaces not in use acting as a trade off against the higher consumption by the less well off. Indeed there may well be a further spin off in that users will invest in proven technologies generally in use in the commercial worlds such as passive lighting.

9. The size of these bands and their cost would have to be worked out and I would not be presumptuous enough to make any suggestions as to what they should be, not being an accountant/economist or having the detailed information. However it should not be beyond the wit of man to work these out in conjunction with the energy providers and other interested parties. It may appear as interfering in the market place, but if price control of the drinks industry at the point of sale is being considered, there would seem to be precedence for doing this.

10. If members of the committee accept the logic of my proposal, may I suggest that rather than say ‘how do we achieve this’ the question be put in another way. Let us assume that we have achieved the outcome and then ask the question ‘how did we get here?’ The disadvantage of the former question is that people will try to find reasons why it cannot be achieved whereas in the latter, the mind set is now positive.

11. It is appreciated that the proposal does not fit in with the Green Deal, which relies on an expensive lower tariff to ensure that the costs of insulation are repaid as fast as. However one of the limitations of the Green Deal is that it does not help all those in fuel poverty. For example, in the area I live in (Rosendale and Darwen
Constituency), a significant amount of the housing stock is of solid stonewall construction, which cannot be easily or cheaply insulated and much of which is privately owned. For the occupiers of these properties the Green Deal will either not apply or will still leave many in fuel poverty.

12. I believe that the proposal that I have put forward deals much more comprehensively in tackling fuel poverty than the Green Deal. However, it does beg the question on how the installation of the housing stock can and should be improved. The Green Deal, if the lower rate of return identified above is accepted, could be a partial answer, but it will be necessary to find the funding for a retrofit insulation programme elsewhere. It is interesting to recall a levy was imposed on all cement sold which funded the Concrete and Cement Association for its research for decades. Maybe something similar could be considered, but I am moving away from my field of expertise so it would be presumptuous to develop ideas further on this.

13. I hope the committee find these comments useful.

June 2012

Written evidence submitted by Andrew ZP Smith

1. SUMMARY BULLET-POINTS

- The Draft Bill's aim of largely decarbonising the grid “by the 2030s” conflicts with the Committee on Climate Change’s target of a largely decarbonised grid by 2030.
- Single fixed-price feed-in tariffs would be more economical than the proposed CfDs.
- There will be no need for additional baseload capacity: what will be needed is plant that is capable of providing a fast slew rate: the proposed capacity mechanism addresses the wrong problem, and will cost money and fail to provide energy security.
- Starting with a low carbon floor price and rising slowly can exacerbate emissions. Rising quickly so that the carbon floor price soon reaches the marginal carbon damage cost provides the most economically optimal solution.
- Vertical integration within the electricity market creates illiquidity and excess rents: ending the vertical integration of the six largest utilities would create greater liquidity and a more competitive market.
- The proposed “regulatory backstop” leaves space in the grid for heavily-polluting plant to function up to 2044.
- Full-lifecycle greenhouse-gas emissions from CCS can be too carbon-intensive for the decarbonised grid.
- If CCS works, the proposed exception from the Emissions Performance Standard [EPS] is redundant. If CCS does not work, than the proposed exception from the EPS will result in excess emissions and a distorted market.
- Contracts for difference will not deliver the stable and predictable economic environment that is claimed.
- The Draft Bill leaves the permanence of “permanent” CO₂ storage undefined, and without anyone being held responsible to guarantee its permanence, leaving a substantial potential liability unallocated.
- The proposed Strategy and Policy Statement should include a mandatory section on addressing climate targets.
- The Committee on Climate Change should be included among the statutory consultees for Draft Strategy and Policy Statements.
- The Draft Bill does not take the opportunity to provide a legislative framework for loan guarantees for the development of new onshore and offshore wind: such a framework would deliver the government’s aims of reducing the costs within those industries, and reducing the size of CfDs required there.
- The Draft Bill and associated Electricity Market Reform provides public subsidy for new nuclear, in defiance of the governing parties’ pre-election promises, and in contradiction to the stated intention on the website of Number 10. The public underwriting of its unlimited liability alone, amounts to a public subsidy somewhere in the range £11–£5,400 per MWh.

2. COMMENTS ON THE DRAFT ENERGY BILL SUMMARY:

3. p10, paragraph 5, is in direct conflict with what the Committee on Climate Change has said is necessary for the UK to meet its legal carbon commitments. The CCC’s target is for a largely-decarbonised grid by 2030. The Draft Bill’s Summary says that the aim is for this to happen “by the 2030s”. This is in effect a slippage of a decade, for a target that isbe less than two decades away, and indicates a significant lack of commitment in the Draft Bill to deliver what is urgently needed. Furthermore, this delay will cost Britain money, as it
prolongs the period during which we are dependent on imports of fuels for our electricity supply, and holds back the development of the UK renewable industry, leaving our international competitors to seize the market.

4. *p12, paragraph 9*: the claim that CfD have been chosen over a less cost-effective Premium Feed-in Tariff neglects to mention that a direct Feed-in Tariff (aka a single fixed-price scheme—see, for example, Doherty 2011) would be simpler and more cost-effective than either of those.

5. *p28, paragraph 54*: given the increasing amount of wind, and possibly nuclear, on the grid by 2030, there will be no need for “baseload capacity”: what will be needed is plant that is capable of providing a fast slew rate. Subsidising CCS on the basis of it providing baseload therefore creates a market distortion that is highly counter-productive: if CCS is ever to reach commercial scale and be able to deliver clean power without public subsidy for its open liability (three conditions that are each doubtful), then it must provide ramping-up and ramping-down balancing services: subsidies, through CfDs or other instruments, should therefore be targeted at delivering those balancing services.

6. *p30, paragraph 63*: The description of the working of the proposed capacity mechanism echoes very closely the same discredited “predict and provide” methodology that led to a substantial resource misallocation in transport [SACTRA 1994]. As identified above, future energy security requirements are not about capacity per se, but about providing suitable slew rates at sufficient capacity, to balance the grid.

7. *p32 paragraph 70*: the Carbon Price Floor is very welcome in principle, as a means of pricing in the negative externality of damages from greenhouse gas emissions. However, the introductory price is very low, and the ramp-up rate is too low. One of the risks that goes with having a carbon price that starts low and ramps up too slowly is that it brings forward investment & expenditure on fossil-fuel extraction and consumption, exacerbating the negative externalities.

8. It is noted that industry will take some time to adapt to higher carbon prices: nevertheless, competitive advantages will accrue to those countries that introduce a high carbon price sooner rather than later: the laggards will be buying their clean-tech from the front-runners. It is within our power which of those we choose to be. Furthermore, the longer the negative externality persists, the worse the misallocation of resources is. It is therefore in the best interests of the country to introduce as soon as is practicable a carbon price that is consistent with the damage costs. In Hope 2011, the marginal damage cost is estimated at US$50–100/ tCO\textsubscript{2}e. The Stern Review gave a mean estimate of the social cost of carbon of US$85 per tonne of CO\textsubscript{2}. Given the large amount of infrastructure already in place that is only economically viable thanks to the unpriced negative externality, a carbon price that exceeds the marginal damage price is required, to get us to something like an efficient allocation. Given this, Britain should be aiming towards a carbon price of around £70 per tonne CO\textsubscript{2}e by 2020, with suitable measures to prevent border leakage.

9. *p33–34, paragraphs 74–75*: the government’s protracted attempts to tinker with CfDs and PPAs seem to be a convoluted way at slowly rediscovering the single-buyer model of the market: a model that could implement direct (single fixed price) Feed-in Tariffs and deliver all our targets in a timely and economically efficient manner. It would seem that DECC is attempting to co-opt Churchill’s description of the USA, for itself: that it “can be counted upon to do the right thing, but only after it has exhausted all the alternatives”.

10. *p34, paragraphs 76–79*: Within the electricity industry, the vertically-integrated for-profit companies are able to drive the amount of liquidity that suits them. The clear answer is to break up this for-profit vertical integration: other measures will only tinker around the distorted market.

11. COMMENTS ON THE DRAFT BILL

12. *Draft Bill, section 6 (Part 1, Chapter 1)*: one of the flaws of the CfD scheme is that the reference price may not represent the price realised by the generator, and thus the instrument will not deliver the stable and predictable economic environment that is claimed to be the purpose of the instrument. This is further cause to support a direct feed-in tariff, the fixed single price: a mechanism that proved so successful for the rapid deployment of photovoltaics that the government attempted to adopt unlawful means to curtail it. A direct feed-in tariff, a fixed single price, combines CfD and Power Purchase Agreement [PPA] into a single instrument, and would genuinely deliver a stable and predictable economic environment for the development of affordable, secure, low-carbon electricity generation.

13. *Draft Bill, section 36 (Part 1, Chapter 7)*: this is claimed in the summary assessment to be a “regulatory backstop supporting decarbonisation”: however, it allows for the construction of new plant, however polluting, as long as it runs at a sufficiently low capacity factor. A coal plant running below an annual 40% load factor would meet this Emissions Performance Standard. Its usefulness as a regulatory backstop, given the statutory rate of emissions is set to 2044, is therefore very dubious. Given the Committee on Climate Change’s target of the electricity system being largely decarbonised by 2030, it is very hard to see why any date beyond 2030 for such a high emissions threshold is acceptable.

14. The explanatory notes for Sections 36–37 cover the emissions of some upstream processes for CCS. I suggest extending this principle to all upstream processes for fossil fuel plants, as these emissions (for example in the case of shale gas) could make the plant more damaging than a plant that would breach the Emissions Performance Standard by originating all of its greenhouse-gas emissions at the generation plant itself. In order not to incentivise plant designers and operators to “hide” emissions in upstream processes, the Emissions...
Performance Standard should include all upstream processes. The full-lifecycle greenhouse-gas emissions from CCS can be too carbon-intensive for the decarbonised grid [Cockerill 2008].

15. Draft Bill, section 37 (Part 1, Chapter 7): If CCS works, then there is no need for exception (as proposed in this Section) to the proposed Emissions Performance Standard (Section36). If CCS does not work, then there is no role for CCS, and again the exception from the proposed Emissions Performance Standard for demonstration CCS plant is unnecessary. Either way, the proposed exception of demonstration CCS plant from the Emissions Performance Standard is unjustifiable.

16. Draft Bill, section 38 (Part 1, Chapter 7): In definition (c), reference is made to “such carbon dioxide (or substance) that has been captured, by way of permanent storage”. However, no reference is made as to who is to guarantee that the storage is indeed permanent; nor whose responsibility it is to provide ongoing monitoring and maintenance to ensure permanent storage; nor who should bear the consequential liability if the storage turns out not to be permanent. To avoid perverse incentives, the CCS industry itself should bear the full liability for any failure of “permanent” storage of CO\textsubscript{2} and other greenhouse gases.

17. Draft Bill, section 40 (Part 1, Chapter 8): I regret to note that the proposed Strategy and Policy Statement does not yet have an obligation to include a delivery plan for interim carbon budgets, and for national and international climate targets.

18. Draft Bill, sections 43 and 44 (Part 1, Chapter 8): I propose adding the Committee on Climate Change to the list of statutory consultees for the first and subsequent consultations.

19. Missing from the Bill

20. The government has within its grasp the means to radically reduce the cost of new low-carbon electricity generation plant. By providing backing for financing, it could, at no net cost to the public sector, significantly reduce the unit cost of energy from this plant, by reducing the finance rate paid by project developers. Generators such as onshore and offshore wind have a well-understood asset base that, once operational, can achieve full value if resold; and as most of their cost-base consists of up-front capital investment, as there is no fuel, and as the scrap value of the materials exceeds the cost of decommissioning them, there is therefore minimal risk to the public finances of providing guarantees for financing for onshore and offshore wind. Such a provision would reduce the levelised costs to internationally competitive levels, giving positive results for the taxpayer, the electricity bill-payer and UK industry.

21. On Nuclear Subsidy

22. It is disappointing that the government is willing to break its pre-election promise of no subsidy for new nuclear. The claim of no subsidy is still present on the Number 10 website, [Number10.Gov.UK, 2012] which states in its “transparency” section that its goal is to: “Facilitate the world’s first new nuclear development without public subsidy by 2019”. However, the Contracts for Difference proposed within the Energy Bill represent a public subsidy to new nuclear, thus breaching the government’s own explicit promise on the subject.

23. It is also disappointing that nuclear fission, a mature 50-year-old technology, still needs public subsidy, both explicit in the form of the proposed Contracts for Difference, which take money from all bill-payers, ie the British public; and implicit in the form of requiring the public to underwrite its unlimited liability, because the nuclear industry is neither financially stable enough, nor safe enough, to be able to procure insurance to cover its risks. The public underwriting of its unlimited liability amounts to a public subsidy somewhere in the range £11–£5,400 per MWh (€14–€6,700) [Versicherungsforen Leipzig GmbH, 2011]. Even at the very bottom end of that range, this makes nuclear completely uncompetitive with the low-carbon alternatives.

24. This is one of many nuclear subsidies. The government channels funding to new nuclear via the Technology Strategy Board, the Research Councils and DECC: for example, via the “Developing the Civil Nuclear Power Supply Chain: Targeted Call for Knowledge Transfer Partnerships” [TSB 2012].

June 2012

References


Doherty 2011: Doherty & O’Malley “The efficiency of Ireland’s Renewable Energy Feed-In Tariff (REFIT) for wind generation”, http://dx.doi.org/10.1016/j.enpol.2011.06.024


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TSB 2012: “Developing the civil nuclear power supply chain: The Technology Strategy Board and the Nuclear Decommissioning Authority (NDA) are to invest up to £1 million to establish new Knowledge Transfer Partnerships (KTPs) in the field of nuclear technologies for civil power generation, decommissioning and waste management. This targeted call for KTPs is focused specifically on the exchange of knowledge and skills into the nuclear supply chain. This targeted call is part of a £15 million programme and is running in parallel with a £14m investment in nuclear technologies by the Technology Strategy Board, NDA, the Engineering and Physical Sciences Research Council and the Department of Energy and Climate Change through which up to £2 million will be invested in feasibility studies to develop new and innovative early-stage technologies and up to £12 million in collaborative research and development.” http://www.innovateuk.org/content/competition/developing-the-civil-nuclear-power-supply-chain.aspx


Written evidence submitted by Greenpeace

SUMMARY

The Energy and Climate Change Select Committee have a particularly important role in this pre-legislative scrutiny period because the stated government position on a number of issues is at odds with the actual proposals. The proposed Energy Bill contains some good elements but some strategic weaknesses, in particular the lack of clear objectives, lack of any demand reduction proposals, the weaknesses of the support mechanism for new renewables, and because it arises from an Electricity Market Reform process that did not, in fact, reform the electricity market. Underlying much of these weaknesses are, over many years, a catastrophic “picking winners” approach to nuclear power which has distorted policy priorities and taken attention away from other approaches. This approach looks to be failing comprehensively, as it would seem that little or no nuclear power will be delivered either.

With the nuclear programme falling apart, and weak support for demand reduction, renewables and CCS, it is plausible that as a consequence, we could end up relying on a new “dash for gas” in the power sector. Contrary to ill-informed media and political commentary, this would come with a host of economic, security and environmental risks which would be bad for Britain’s economic interests, environmental performance, and international credibility. Shale gas will not help.

Thus key changes to the Energy Bill would be to establish objectives including the Climate Change Committee target for the power sector of 50g/kWh by 2030. The CfD model is so complex and inaccessible to a range of players that it should be abandoned and the Renewables Obligation extended several years whilst a more systematic review reforms the electricity trading arrangements and support mechanisms in harmony, informed by recognition that we will be substantially trading with European electricity markets before the end of the decade. Renewable support needs to be simple, predictable, government-backed, whilst limiting liabilities to the bill/taxpayer and promoting diversity of ownership and scale. The Emissions Performance Standard should be tightened to eliminate loopholes and to bear down on gas emissions over time, including the reduction in timescale of grandfathered emissions rights. The capacity mechanism should accommodate both interconnection with other countries and demand side management. National Grid should have obligations to deliver legal targets on emissions and renewable energy. Parliament should have full scope to review the deals being made in the early “investment instruments” as potentially many billions of pounds will be at stake.

1. CONTEXT

It is widely observed that the Electricity Market Reform proposals are complex and the implications will be difficult to understand.

One of the difficulties in evaluating the impact of the Energy bill and the Market Reform proposals is that government has public and political lines for wide consumption that are often either irrelevant to—or are just flatly contradicted by—the actual proposals under discussion. Examples of this rhetoric vs reality mismatch follow, although those close to the process will no doubt be able to remember more:

— DECC press release on Energy Bill “It will be designed to encourage a balanced portfolio”

— Previous Secretary of State “I don’t believe government should pick winners”.

— David Cameron “unless we pay as much attention to energy efficiency as we do to energy production, then our energy supplies will be neither secure nor sustainable.”

— DECC press release “Davey puts energy saving at heart of strategy”.

These are great quotes for consumption by those who aren’t following the issue, but those who are closer observers of what is happening see a different story. For example,

— James Murray, Business Green, “the next coalition minister who trots out the lines “we don’t pick winners” or “we’ll let the market decide” should be laughed out the room”.48

— Prof Catherine Mitchell, Exeter University, “Are the vast and complex edifice of new energy regulations beginning to emerge there to pave the way for more nuclear power plants? That is the uncomfortable conclusion that many in the industry are reaching”.49

— Damien Carrington in Guardian “On the UK’s commitment to “no public subsidy” for nuclear, if there is anyone outside Decc and EDF who thinks that is credible, I have yet to meet them”.50

— Keith MacLean, SSE, “The only logic we can see in this is that they [ministers] are still trying desperately to hide the nuclear support. They seem to be prepared to make life more difficult for renewables in a last-ditch effort to keep the nuclear option open”.51

— There is no efficiency component of the Energy Bill at all.

This matters because it is harder to understand what is actually going on when the expressed purposes are not the same as what is revealed by examination of the Energy Bill proposals.

The role of the ECC Committee in establishing what the implications of the proposed EMR and Energy Bill becomes extremely important.

2. **Overall Objectives and Governance**

There appear to be no explicit objectives for the EMR process in relation to decarbonisation, security and affordability.

Our view is that for decarbonisation the objective needs to be through meeting the Climate Change Committee 2030 target for the power sector of 50g/kWh, whilst ensuring this is met sustainably and respecting the natural environment. This would frame the scale of ambition and allow an assessment of whether implementation is delivering in a timely way.

There should be an objective on bills reducing consumers exposure to volatility and maximising opportunities for participation in the power system, and support for improving efficiency to reduce electricity needs.

The electricity system should have an objective to minimise exposure to volatility from system disruption and interruption from primary fuel supplies

Associated with these objectives, there should also be an obligation for National Grid to meet existing legal obligations, in particular carbon budgets and renewable energy targets.

When drawing up their Delivery Plan. The Committee on Climate Change should be made statutory advisers on these draft plans.

Additionally, UK government support for a Europe-wide 2030 renewable energy target backed by binding national targets would send a strong signal to investors that Britain looks forward to our “clean tech” sector continuing to grow beyond 2020.

The EMR package currently proposes significant public support for contractual arrangements for energy generators. It is essential that clauses in the Energy Bill which require these agreements (both the investment instruments and CfDs) with all terms and conditions, to be brought before Parliament are retained and that Parliament has the ability to amend these agreements. It is imperative that MPs and civil society can see what agreements Government is making on our behalf. Transparency should also apply to the preparation of the Delivery Plan by National Grid.

3. **The Electricity Market and the Reform Process**

3.1 **Trading arrangements**

One of the ironies of the current Electricity Market Reform is that it is not actually reforming the electricity market—it is amending the support systems around it. We believe it is now questionable whether the purposes of market reform around decarbonisation, security and affordability can be achieved without doing so.

The need to undertake major infrastructure and generation capacity renewal, coupled with the decarbonisation challenge and government technology preferences, meant that the EMR process was designed to lower the costs of capital for new build nuclear and renewables. It acknowledged that not all the finance could come from the utility balance sheet, and that new entrants would be required. Typically capital costs of £110 billion or higher are cited as the investment needs over the next decade. Thus keeping capital costs low would be valuable, but would inevitably mean that the risks were transferred to Government or bill-payer. Thus

49 http://www.guardian.co.uk/environment/2011/mar/11/nuclear-power-reason-energy-regulations
50 http://www.guardian.co.uk/environment/damian-carrington-blog/2012/jun/01/nuclear-energy-emr-uk-newsfeed=true
51 http://www.guardian.co.uk/environment/2012/may/15/reform-electricity-market-unworkable?INTCMP=srch
a contractual element was accepted in the CfD, and the need for flexible generation in the capacity mechanism because of the inflexibility or variability of most forms of low-carbon generation. Whilst a Government-backed contractual element was (is) important, a host of other risks are involved in particularly renewable generation in dealing with the liberalised trading arrangements, BETTA, used in UK. These additional risks include route to market/access, political risks, complexity and transaction costs of engaging with the trading arrangements, price risks and balancing costs. All of these risks add to the costs of capital and many are outwith Government intervention as they arise from the actual trading arrangements used, like dual cash-out pricing. Only at the very earliest stages in the EMR process were genuine changes to the trading arrangements considered. But were discounted because of the belief that the liberalised market reduced costs through competition. Yet in practice under EMR proposals, price competition in the market will be substantially complemented (or even replaced) by Government support systems. Nuclear and all forms of renewables will be negotiating for support by contracts, coal should be largely ruled out (although see section on EPS) until CCS can be made to work under Govt demonstration programme, and new gas power will be getting capacity contract payments, although the size and extent of these contracts is still very unclear. Thus all forms of power generation will be receiving direct support, and under these circumstances it is hard to see that the BETTA arrangements offer unequivocal benefits for the bill-payer. Indeed whilst most commentators are apt to say that the Big 6 oligopoly needs to be broken up and new entrants allowed into both generation and supply markets, it is the trading arrangements themselves which promote vertically integrated utilities, as it allows much more effective financial risk management across both generations and retail markets. Thus without changes in those trading arrangements, the same risk management approaches by new entrants would, in the long-term, lead to the same corporate structure.

A Pool or single market-buyer structure would break up vertical integration and allow a wider range of market entrants. It would also reallocate balancing risks away from generators (where much of the investment needs to come and where costs of capital are critical) to a system operator. It would certainly be able to operate in a framework of supporting instruments such as the CfD/capacity mechanism in a much simpler way, reducing the complexity for smaller players.

3.2 The distorting impact of nuclear

The enthusiasm Government across Parliaments has had for nuclear power is one of the reasons Britain now finds itself in some difficulty. In short, the hijacking of political space on energy since the mid-2000s has distorted policy areas including planning as well as energy. During all this time the mantra of “not picking winners” has been applied to parsimonious renewable support, whilst energy policy area has been distorted in order to get new nuclear built. This now looks to have been a disastrous approach leaving consumers and the country open to high costs, insecurity and higher emissions as a consequence of having to default to large amounts of gas power.

The hypocrisy started in 2005. Two years earlier a White Paper on energy had been produced after consultation with a wide range of expert opinion and rigorous evidence analysis—it concluded that the best options for UK were to pursue renewable power and energy efficiency. About 2 years later, after almost no substantive policy innovation in that area, memos were circulating in Whitehall around the need to “take a decision on nuclear” on the assumption that renewables and efficiency had “failed”. (We should note, in passing, that by the same logic DECC should have declared in 2010 that nuclear power had “failed” after not delivering 2 years after the 2008 Energy White Paper but we know logic and nuclear are uneasy bedfellows).

Some of the policies that have been created or substantially reconfigured in order to create the right conditions for nuclear new build are:

- Creation of the NPS and nationally significant infrastructure projects.
- New reactor appraisal process (GDA) and the creation of ONR in this Energy Bill.
- Cap on the waste liabilities (Waste Transfer Price).
- Cap on decommissioning costs (Funded Decommissioning Programmes in Energy Act 2012.
- Carbon floor price in Finance Act 2011—rewards all low-carbon generation but more useful to nuclear, including existing nuclear, than any other form of generation.
- Contracts for Difference, this Energy Bill, which as outlined below work well for nuclear but are problematic for variable renewables.

New nuclear build has not been a policy in one area, but a concerted cross-Whitehall project. No equivalent listing could be done for either renewable power, or for efficiency in the power sector. Yet having bet the farm on delivering new nuclear, with the Horizon consortium up for sale, and the EDF-led consortium facing financing and cost problems, the probability that there will be no new nuclear plants built has to be quite substantial. Thus Government is left conducting price and conditions negotiations with an essentially monopoly service supplier, having publicly put considerable emphasis on delivery of that service. An Office Manager doing this with a company’s stationary order would be considered incompetent getting into this situation, whilst successive governments have done this with critical national infrastructure.

We have not picked winners, but neglected them, whilst distorting the entire policy framework to back a loser.
4. DEMAND REDUCTION

One of the greatest weaknesses in the Bill is that there is no measure proposed for supporting energy efficiency or demand reduction in the power sector. We understand that DECC is doing a review (initiated last summer) but no concrete proposals or even consultations have yet emerged. This shows a lamentable lack of urgency given the widely acknowledged potential role for demand reduction in reducing costs and bills. Greenpeace believes that the investment proposition on the demand side and supply side should look equally attractive, such that saving a unit of energy is as good an investment as generating one. It is noteworthy that whilst much of EMR and electricity policy has been about providing additional incentives for types of power generation, no policy has ever been enacted providing direct financial incentives for demand reduction.

The potential for demand reduction and initiatives in other countries has been documented,1 and it is worth noting that energy management companies who have great expertise in demand management have a much greater role in other EU countries and in USA than they do here.

Greenpeace believes there should be equal support for demand reduction, through for example an efficiency feed-in tariff, and a capacity mechanism designed to encourage demand response. Because there is an immature market for efficiency, Government or their agency may need to proactively seek out demand-side opportunities. Similar mechanisms in the US have demonstrably reduced demand and prices, and are the best means of reducing bills and emissions in the short term. Investment funding should come from recycling revenues from the Carbon Floor Price into efficiency programmes, alongside measures to recoup any windfall profits resulting from the scheme.

Given the lack of clear evidence base for translation of policy elsewhere into UK, the time is ripe for policy experimentation and evaluation rather than hoping that further analysis and studies alone can provide a recipe for success. An energy efficiency feed-in tariff would be one example.

5. PROPOSED MEASURES IN THE ENERGY BILL

Greenpeace views on each of the proposed measures of EMR in the Energy Bill, and potential reform to improve is contained here. Our full views on the Carbon Floor Price are not recorded here but are available if required.

5.1 Contract-for-Difference

The preferred means of low-carbon support under EMR is the Contract-for-Difference (CfD). As originally formulated this had some good elements, including the contracting dimension to provide some certainty for developers, insulating them from the risk of change of policy. With the abandonment of direct Government backing for the contracts this benefit now seems to have disappeared as complex counterparty arrangements seem to have removed this benefit, and the supposed advantage in reducing the cost of capital will be lost. Thus the underlying analysis for the 2011 White Paper by Redpoint, comparing the CfD with premium and fixed-FIT options would therefore appear to be out of date.

5.1.1 Nuclear and CfD

The government has decided to combine nuclear and renewable electricity together for political reasons. It has committed to not providing public subsidy for new nuclear; in the words of the previous Secretary of State for Energy, “there will be no levy, direct payment or market support for electricity supplied or capacity provided by a private sector new nuclear operator, unless similar support is also made available more widely to other types of generation.” Although there is little doubt that contracts for difference are a public subsidy, the proposals are designed to create just enough cognitive dissonance that the Secretary of State, his ministerial colleagues and the Cabinet can keep a straight face while maintaining that there is no public subsidy. Similarly, they are designed to persuade the European Commission that there is no state aid.

However, in seeking to avoid accusations of public subsidy and state aid, the government has designed a mechanism which is the worst of all worlds. As several utilities and investors have made clear, contracts for difference would be less likely to engender investment in renewables than the present system of renewables obligation certificates. They provide no certainty for utilities wishing to build new nuclear power, in the short term because they are so likely to be challenged under state aid legislation. Centrica, which is taking a decision on investing in a nuclear plant at Hinkley Point in Somerset next spring, has already admitted that it thinks the proposals would be illegal. Finally, in seeking to construct a wholly artificial Chinese wall between state and aid, the government has driven up the cost of capital, because the proposed counterparties—the UK’s electricity suppliers—are less credit worthy than the British government.

The government has repeatedly asserted that new nuclear would be the cheapest source of low carbon electricity. According to Chris Huhne, the unit cost for electricity from new nuclear plant would be approximately £66 per megawatt hour, compared with £130 per megawatt hour for offshore wind and gas with carbon capture at £95 per megawatt hour. That would suggest that the strike price—the guaranteed unit price for electricity—would be no higher than that offered to utilities proposing to build an on-shore wind farm or a CCS-enabled CCGT plant. The Secretary of State has said as much, writing in Lib Dem Voice that “nuclear will not receive a higher price than comparable generation technologies whether they be renewables or indeed
gas generation once its emissions have been abated by carbon capture and storage.” However, Citibank analysis and an energy specialist from University Birmingham have suggested that the strike price for new nuclear would need to be over £150/MWh and perhaps as high as £166/MWh to attract investment—more than the cost of offshore wind. Whilst offshore wind and other renewables can and should be supported as emergent technologies whilst costs come down, there is no real prospect of the costs of nuclear coming down given its track record.

This is partly because the industry has a terrible track record of delays and cost overruns. The latest examples are the new EPRs being built at Flamanville and Olkiluoto. They are notoriously behind schedule; each is around 3 billion euros over budget. Investors are unsurprisingly reluctant to put their money behind plans to build EPRs in the UK, so EDF has told the government that it wants the strike price to cover cost overruns and delays (known as the construction risk). If EDF cannot build reactors to time or budget, then consumers would pick up the tab for its incompetence.

The proposed investment instruments, as forerunners of the CfDs, will be the mechanism whereby the prices (and possibly other subsidies like construction risk) for nuclear power at Hinkley are given for nuclear. EDF and Centrica are determined to drive as hard a bargain as they can. As the only current players in the nuclear game, the companies have clearly decided that they have the government over a barrel and are engaged in a very public brinkmanship exercise. EDF has recently delayed its preliminary works at the Hinkley Point site until 2013, and has deferred signing a £1.2 billion civil construction contract. Neither company has any reason to care about the political decision not to subsidise new nuclear or the risk the lights may go out; their only objective is to maximise shareholder return by securing a very high strike price. As the initial process of setting the strike price is taking place behind closed doors, and between parties with very different objectives, the only foreseeable outcome is that British bill payers find themselves signed up to long-term, unbreakable contracts that are not in their best interests. Towards the end of the process, Parliament will get to see the outcome of the negotiations. Even then, the financing of new nuclear power by EDF and Centrica has to be open to considerable doubt given that neither has the current balance sheet to borrow the required capital. It would seem that the distortionary and damaging grip that nuclear ideology exerts over UK policy (coupled with high likelihood of non-delivery) has some more months, or even years, to go yet.

5.1.2 Renewables and CfD

The CfD concept is relatively simple to grasp. The major drawback is the complexity of administering it because it requires considerable administration and monitoring of prices. Much more so for variable sources of power like wind compared to invariant sources like nuclear. The complexity overhead becomes a bigger issue for the smaller generators (see, for example, work by the DE contact group or notes from Good Energy) and will thus undermine any emergence of decentralised energy. The worries are not confined to small generators however, as recent statements by SSE have confirmed that even major renewable generators believe that the CfD is not workable for them and poses investment risks.

There are further difficulties because of the loss of Obligation element of the Renewable Obligation. When utilities are obliged to take a certain proportion of renewable power, the balancing risk—which is significant issue in association with the market rules, see above—is taken by the large utility with a diverse portfolio. Without the Obligation, that balancing risk is put back onto the generator who may well need to hedge that risk with an option on other generation. Once again this puts up the overheads for renewable and small generators however, as recent statements by SSE have confirmed that even major renewable generators believe that the CfD is not workable for them and poses investment risks.

5.1.3 Contract allocation

Greenpeace is aware of a number of concerns amongst generators about the contract allocation, both timing and quantities, on the assumption that CfDs will operate in an equivalent to the levy-control framework. We will not go over these arguments here because others will cover them elsewhere. But they do add to the complexity of the arrangements and show that even allocation of contracts will attract gaming behaviour. In attempting to reduce price risks, it will introduce contract allocation risks, in particular for renewables given the absence of clear volume certainty in the post 2020 period. Thus a new investor is faced with the possibility of putting in much development effort only to find no contracts available.

5.1.4 Conclusion on CfD

In attempting to support nuclear, a complex mechanism has been adopted which does not help renewables, especially at a small scale. It provides additional barriers to entry for those who cannot engage in trading arrangements, and thus is likely to exclude new forms of finance from communities and substantial finance from companies who are interested in direct sourcing of renewable energy.\(^{52}\) At a time when new forms of funding and new entrants are required, excluding them in chasing hide state aid in the hope of attracting further utility investment in nuclear is a poor approach.

\(^{52}\) Pers Comm., Second Nature.
Support to renewable energy does need to provide investors with long term certainty which is why the original contract formulation had some merit. The support mechanism needs predictability, government backing, simplicity, whilst limiting liabilities to the bill/taxpayer and promoting diversity of ownership and scale. Smaller-scale community energy is particularly ill-equipped to deal with the complexity of current and proposed trading arrangements.

Greenpeace believes the CfD model should be abandoned and the Renewable Obligation extended for several years whilst a systematic approach to attracting renewable supply based on bringing in investors at different scales, with a trading regime that supports integration of renewable power and demand reduction, and when the full ramifications of a future trading regime involving high levels of interconnection with a European market is properly understood.

Additionally, UK government support for a Europe-wide 2030 renewable energy target backed by binding national targets would send a strong signal to investors that Britain looks forward to our “clean tech” sector continuing to grow beyond 2020.

5.2 Capacity Mechanism

An increase in installed capacity would certainly require some attention to overall dispatchable capacity. The argument is that markets will not be able to provide this because Governments or operators will not allow real prices to pertain at very low levels of renewable generation—the “missing money” argument. We note that the chances of very high & unsustainable prices are much more remote with high levels of interconnection with other countries, and with substantial demand side-response. Thus the capacity mechanism needs to be flexible enough to genuinely account for these options.

The important system consideration for the capacity mechanism is that it does not allow more gas plant to be built which could then exclude low carbon generation (see section on the role of gas) and that capacity should be allocated in a carbon merit order as well as price merit order. The lowest carbon capacity is demand side response whilst the worst would be maintenance of unabated coal plant.

Greenpeace believes that the Capacity Mechanism, if introduced, should prioritise demand side management and interconnection, and exclude capacity payments to unabated coal plant.

5.3 Emissions Performance Standard

The EPS was a commitment from both Coalition parties before the election and appeared in the Coalition agreement. Whilst the immediate threat of a large-scale unabated coal fleet has receded, the EPS remains an important tool to prevent unabated coal resurgence. We should not make the mistake of the 1990s when the first dash for gas occurred, when no regulatory block was put in the way of new coal because prices moved against coal new-build, only for the threat to re-emerge over 10 years later. This time a regulatory barrier to unabated coal needs to be enshrined in law.

The Government is currently proposing an emissions performance standard set at 450gCO2/kWh (station acting as baseload) with grandfathering extending out to 2045. This combination of policies has been cited by CCC as threatening decarbonisation because of the role of gas (see below). An emissions performance standard which should have shorter grandfathering provisions and gradually reduce over time in line with the objective of decarbonising the power sector down to 50gCO2/kWh by 2030 is needed to ensure compliance with carbon budgets.

To make the EPS fit for purpose in limiting fossil fuel participation in the power system, there need to be a series of amendments.

First, the level of 450g/kWh does not place any limit on gas power stations. Given the potential “dash for gas” and the economic and environmental concerns set out below (see “role of gas”), relying on gas to prop up a power system seems unwise. One of the few tools government now has for limiting this dash for gas in the longer term is the EPS. Thus Greenpeace believes that the limit should be set lower and to ratchet down over time. Grandfathering should not be extended to 2044 as proposed in the current Bill but be brought back before 2030 to ensure tools are available to deliver compliance with the CCC power system carbon target.

There is an exemption from the 450g/kWh limit for coal plant participating in the CCS demo programme. Further, there seems to be no regulatory backstop should there be a failure of the CCS plant or the costs become unmanageable. Therefore ALL new plant should be covered by the proposed 450g/kWh level. These proposals require that for new fossil stations some level of CCS might be required. Understandably there is a concern given the level of experience of commercial scale CCS. We would therefore propose a review of the EPS clause late in this decade when we have more clarity about the ability of CCS to deliver, and other options available.

In summary, the ECC committee should ensure the Energy Bill has some purchase over the “dash for gas” so that new build of gas-fired power stations do not compromise the decarbonisation target. This should include a lower initial level than 450g/kWh, with much shorter grandfathering rights, ratcheting down over time, and ensuring that the loophole via the CCS demo programme does not produce new unabated coal.
6. The Role of Gas

In the event that there is a delivery failure of low-carbon generation, the default option would appear to be large volumes of gas-fired power generation. Indeed there is an active lobby and media commentary that this would in itself be a desirable outcome. Because this is clearly a live issue, and an outcome with support in certain circles, we have spent some time examining how a significant role for gas in the UK system would actually be a negative outcome, and that whilst gas will have a role as a balancing fuel, that role needs to be curtailed and controlled for economic, security and environmental reasons.

6.1 Energy bills

Figures from Ofgem show that over the last year the average UK bill rose by £150, with £100 of this due solely to the soaring cost of gas.\(^{11}\) Centrica owned British Gas has already warned bills will rise further this year.\(^{12}\)

Analysis by both Ofgem\(^{15}\) and the Committee on Climate Change\(^{16}\) makes clear that rocketing international gas prices are by far the biggest reason for rising energy bills, which are squeezing families and business across the UK. Ofgem state: “Higher gas prices have been the main driver of increasing energy bills over the last eight years.” Similarly, the CCC states that “recent bill increases are primarily due to increased wholesale gas costs.”

The driving factor behind these price hikes has been growing Asian demand for gas and events such as the nuclear disaster at Fukushima and the Arab Spring which caused huge energy price rises and contributed to high levels of inflation. This is because the UK is now a net importer of gas and must compete for it on volatile global markets.\(^{17}\) In May the Secretary of State for Energy and Climate Change Edward Davey warned “Only last year, the impact of the Arab Spring on wholesale gas prices, pushed up UK household bills by 20%”.\(^{18}\)

Merrill Lynch Bank of America has warned that: “With Asian demand resurging, UK and European gas prices will have to increase to stem the on-going diversion of LNG cargoes to Asia”.\(^{19}\) Energy regulator Ofgem supports this analysis, with Chief Executive Alastair Buchanan recently outlining how the UK could continue to face very high gas prices in future as China increasingly competes for gas on the world market.\(^{20}\) According to analysts at Wood Mackenzie, China needs to increase its LNG imports by 80% to meet rising domestic demand.\(^{21}\)

Greenpeace believes that to stabilise energy bills and reduce the burden on families and businesses it is crucial that reforms to the electricity market reduce consumers’ exposure to expensive and volatile gas prices.

6.2 Climate Change

In their advice to the government on meeting the carbon targets set out in the Climate Change Act, the Committee on Climate Change (CCC) have said “any path to an 80% reduction by 2050 requires that electricity generation is almost entirely decarbonised by 2030.” The CCC defines this goal more specifically as meaning that by 2030 our electricity system should produce no more than 50g of CO2 for every kilowatt of electricity generated.\(^{22}\)

DECC state that the emissions intensity of a modern gas plant—a Combined Cycle Gas Turbine (CCGT)—is 350g/CO2/kWh at the point of generation.\(^{23}\)

Methane—the main constituent of gas—is also a very potent greenhouse gas, 21 times more powerful than carbon dioxide over the medium term according to the US Environmental Protection Agency.\(^{24}\) As the UK becomes increasingly reliant upon LNG imports, the impact of gas usage on the climate could also be worse than expected because of emissions beyond those produced at the point of electricity generation.

LNG imports are understood to be particularly damaging with a recent research note by Scottish Widows Investment Partnership noting that the emissions for processing and transporting gas, added to methane leakage from gas production, undermine the benefits of gas over coal for electricity generation. Their research concluded, “If you combine the additional 15–20% CO2 emissions from the LNG process with the warming impact of the fugitive methane emissions… the climate benefits of gas are further eroded”.\(^{25}\)

A study at Carnegie Mellon University\(^{26}\) found that the lifecycle emissions of burning a gas mix containing just 20% LNG were 21% higher than the emissions at the plant, for which generators purchase carbon credits. It also found this brought total lifecycle emissions close to coal, reducing the benefits of burning gas for the climate.

Moreover, given the influence of the International Energy Agency’s report “Are we entering a golden age of gas” on DECC policy formation\(^{27}\) it should be noted that a series of peer reviewed studies have found the life-cycle climate emissions from shale gas are close to that of coal. DECC appears to have based its confidence about a “benign global supply picture”\(^{28}\) on IEA assumptions about the growth of shale gas, both in the US and beyond. In the unlikely event that shale gas is as successful in Europe and beyond as the IEA claims, the fugitive emissions from the fracking process, added to the increased emissions from processing and transporting LNG, will hugely undermine the benefits from a coal to gas switch.
A further peer-reviewed study from the National Center for Atmospheric Research (NCAR) in the United States concluded that “shifting from coal to natural gas would have limited impacts on climate” because coal-burning also emits tiny dust particles, aerosols, which have a cooling effect, and because of likely methane leaks associated with relying upon gas.

6.3 Gas Capacity and emissions

In doing an impact assessment for their Emissions Performance Standard (EPS) proposal, DECC commissioned Redpoint to model gas-build to 2030. “The model baseline... suggests that there will be some 12GW of new CCGT gas plants [by 2030].”

A recent report for Friends of the Earth shows that some 9GW of new gas build is already in the pipeline and likely to be built by 2016, whilst Bloomberg anticipate 11GW new gas built by 2016, with a further 2GW built between 2016 and 2030. Crucially, Bloomberg also anticipate this plant to be generating c.125, 000 MWh per year in 2030—ie not just covering peaking load.

If Bloomberg are correct and the UK has CCGT generating 125,000 GWh of electricity in 2030—that would mean emissions of some 44MtCO2/yr. In contrast, the CCC have said that to meet the 2030 carbon goal power sector emissions in 2030 should not be more than 16 MtCO2 annually. There is therefore a clear need for the market reforms to prevent this outcome.

Example figures from Committee on Climate Change scenarios, provided to Greenpeace, suggest that around 33 GW of gas may be built and running by 2030, assuming that there is significant deployment of low-carbon generating capacity. Unless the majority of this were either mothballed, running at very low load factors (as “peaking plant” to meet peaks and troughs in demand/supply), or fitted with full Carbon Capture and Storage, the UK would not be able to meet its legally binding carbon reduction targets.

Despite this, Ministers have signalled they support a lot of new gas investment—and in a midnight announcement on “budget weekend” revealed they will exempt gas plant from emissions regulations until 2045. Lord Turner recently wrote to the Energy Secretary on behalf of the CCC to warn this would lead to “the risk that there will be too much gas-fired generation instead of low carbon investment” and that the policy could take emissions “beyond the limits implied by carbon budgets.”

The attractiveness of the business case for new gas plant, relative to lower carbon alternatives, will be shaped by the capacity payment arrangements that emerge from the government’s electricity reforms and therefore these decisions will also have a significant impact on how much gas gets burned and consequently levels of emissions.

If the “Capacity Mechanism” is set at a level that means gas plant only end up operating occasionally at any one time, with resultantly low total emissions (even though per kWh they will remain high carbon) the average mix on the grid could still decline in carbon intensity. However, this would mean effectively mean taxpayers paying energy companies not to use their gas stations except when they were needed for times of “peak” demand—and it should necessarily see limits on the numbers of gas plant built.

6.4 Carbon Capture and Storage

Another means by which gas burning could theoretically be consistent with decarbonisation by 2030 would be if Carbon Capture and Storage (CCS) were to be rolled out at commercial scale on almost every gas station in the country by 2030. However, this is not currently a credible scenario—and relying on the potential for ambitious levels of CCS deployment as the means to achieve decarbonisation is incredibly risky, and potentially extremely expensive.

There is currently only an obligation for new build gas to be “CCS ready” (with a vague definition lacking in any credibility) and there is no obligation to actually fit CCS, even if it became commercially viable. The announcement that energy utilities needn’t worry about needing to abate emissions from gas plant until 2045 will also have discouraged CCS investment and deployment. Why would a utility fit CCS voluntarily?

With extremely limited public funding for CCS demonstration, and no regulation requiring CCS, and no terms and conditions about, for example, siting of new gas plant to be better suited for CCS in future—there is no indication the government is thinking about this technology as anything other than a fig leaf to provide political cover for new unabated gas build.

Greenpeace believes, as stated elsewhere in this submission, that the Energy Bill must have a clear and legally binding goal of decarbonisation of the power sector by 2030 in line with the recommendations of the Committee on Climate Change.

It is our view that proposals to exempt gas plant from emissions performance standards until 2045 are clearly inconsistent with this necessary decarbonisation goal.

Instead, new emissions standards should apply to all fossil fuel plant and be set at a lower level that is consistent with ensuring power sector emissions in 2030 are no more than 50g/Co2/Kwh.
6.5 Security of supply and price shocks

Last year the UK imported more gas than it produced for the first time since 1967. It has been a net importer since 2004.

Less than 50% of UK gas demand is now met indigenously, with imports forecast to rise to between 75% and 80% of UK demand by 2020. This rising import dependency has serious implications for both consumers and the UK economy.

The UK has become increasingly dependent upon shipments of Liquefied Natural Gas (LNG) from Asia and Africa. According to National Grid, LNG is set to become the single biggest source of the country’s gas by 2020–21, meeting almost 40% of total demand.

The global reach of LNG tankers however, means that competition from booming Asian economies is fierce. UK imports of LNG have plummeted 30% this year because prices climbed due to increased Asian demand. Dozens of LNG cargoes that were originally destined for EU countries have been sent instead to Japan, enticed there by higher prices for gas.

Figures from Deutsche Bank show non-Qatari cargoes heading to the UK fell steadily from 56% in 2009 to about 10% in 2011, despite British government efforts to promote greater diversity. Figures from HMRC reveal that from January-March 2012, the only other country the UK received LNG imports from was Iran. Other sources for LNG include Algeria, Yemen, Nigeria and Trinidad and Tobago.

Deutsche Bank also found that “UK import volumes from Qatar in the first two months of the year dropped 50% versus 2011 as consumption rose in Japan, South Korea, China and India.” They “conclude that there is a very real risk that these developments intensify rather than recede through 2013.” Analysts at leading energy consultancy, Wood Mackenzie, have outlined how the UK is “incredibly dependent on Qatar from an LNG perspective. If you are going to change that you are going to have to start contracting on a firm basis”.

British Gas owner Centrica, the biggest gas supplier in the UK, has identified securing long-term LNG contracts as key to demonstrating that increasing our dependency on gas will not endanger UK energy security and lead to spiralling prices. CEO Sam Laidlaw outlined how “additional destination specific gas contracts to replace our North Sea production are essential for security of supply”.

But privately the company has concerns about its own deals to secure supply. In internal briefings for the UK’s Department of Energy and Climate Change, obtained by Greenpeace, Centrica expressed concerns about its 2011 three year, £2 billion deal with Qatargas, one of the UK’s largest gas suppliers. “The draft agreement presented by the Qataris is not acceptable to Centrica,” said the private Department of Energy and Climate Change briefing, written shortly before the signing. “The cargoes could be fully diverted, and price is high, and the contract duration (three years) too short.”

In contrast, Qatargas has entered into more lucrative, 20+ year contracts with Malaysia’s Petronas International and China’s Petrochina; while Qatar’s Rasgas signed a 20 year deal with Taiwan’s state-owned oil refiner. This underlines the fact that LNG producers will only enter into long-term contracts if they are linked to the oil price. Last year Qatar called for this way of setting gas prices to continue, meaning that the lack of security in obtaining supplies not linked to oil prices will continue to make its impacts felt on consumers and the wider economy.

The table below reveals the top five sources of UK gas imports by value. The UK’s huge dependence upon Qatar is clear here:

<table>
<thead>
<tr>
<th>The UK’s top five sources of gas imports by value (£) (source HMRC)</th>
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<tbody>
<tr>
<td>Qatar</td>
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<tr>
<td>Norway</td>
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<td>Nigeria</td>
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<td>Yemen</td>
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<td>Trinidad and Tobago</td>
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6.5.1 Price shocks

The UK’s increasing reliance on LNG imports from Qatar has been questioned by UK military leaders, who recently warned that almost half the UK’s gas imports would be halted if, as it has threatened, Iran blocks the Strait of Hormuz. Lord West, former head of the Royal Navy, recently argued that if the strait were blockaded, the sharp fall in the UK’s gas supplies would be the country’s single most critical issue.

The other countries the UK imports LNG from are no more secure and include; Algeria, Yemen, Egypt, Libya, Iran and Nigeria.

David Cameron has previously identified the need to harness alternative sources of energy to ensure that “our national security is guaranteed, regardless of decisions by volatile governments elsewhere to close pipelines or restrict supply”. Yet the UK’s increasing reliance on gas imports threatens precisely this.
Secretary of State for Energy and Climate Change, Ed Davey, recently argued that: "the more we can shift to alternative fuels, and use energy efficiently, the more we can ensure that our economy does not become hostage to far-flung events and to the volatility of market forces". xxxv

However, National Grid conducted a study in January 2011, an unusually mild month, to see how the gas supply would react to shocks such as the closing of the Suez Canal or an international increase in demand for gas imports. It found that if this had taken place, consumers would have faced gas supply interruptions. xxviii

Exacerbating this problem is a lack of storage capacity. The British Chamber of Commerce has warned that "at present the UK’s current storage capacity amounts to only 14 days’ of gas supply compared to 87 days in France and 69 in Germany. xxviii Yet gas companies, such as Centrica, are refusing to invest in storage capacity, saying that they see higher returns available elsewhere." xxxviii

This increases the threat of energy price shocks damaging the UK’s fragile economic recovery. Oxford Economics has found that “compared to an oil or coal price shock, a shock to gas prices has a greater impact at the whole economy level and across all sectors other than transport. This reflects the importance of gas-fuelled power stations in electricity generation and the relatively large share of electricity in energy inputs”. xxxix

Oxford Economics concluded that: “once the UK fully transitions to a low-carbon economy, the negative impacts of energy price volatility on these 4 factors are halved:

— Halving the impact of energy price volatility on disposable household income, and therefore reducing amount households would have to put aside to spend on energy bills.
— Halving the negative impact on the level of business investment.
— Halving the impact on inflation.
— Halving the impact on levels of unemployment, which could rise through increased economic inactivity caused by high energy prices”. xlix

Although outside the scope of the current Energy Bill, Greenpeace believes that the Government should be taking strong measures to insulate UK consumers from volatile global gas markets and insure the UK economy against price shocks. The emphasis in parts of Government in encouraging a fresh wave on investment in gas plant, and other gas infrastructure, reveals that they are failing to do so.

6.6 Economic growth

A recent report by Oxford Economics for the Department of Energy and Climate Change argues that: “high and volatile energy prices have a negative effect on the economy of a fossil-fuel importing country such as the UK: they dampen economic activity and they lead to an increase in the price level and potentially an increase in the inflation rate. Since fossil fuels are an input into many goods, both consumers and producers bear losses”. xli

This is the situation now facing the UK as it seeks to emerge back out of recession. Other fuels currently account for 7.5% of the UK trade deficit, xlii predominantly gas. Electricity generation accounts for around 1/3 of total demand for gas, xliii so the proportion of the trade deficit due to gas for electricity generation alone accounting for 2.5% of the trade deficit and set to rise as imports and gas prices increase.

The CBI recently warned that “the UK’s rising energy trade deficit, as North Sea oil and gas production declines, will increase the need to find alternative sources. Diversifying towards renewable energy will both decrease energy imports and stimulate business investment. The UK is already one of the most energy-efficient economies in the world and can take advantage of medium-term opportunities offered by emission reduction targets”. xliv

A report by Innovas for the Renewable Energy Association found that just meeting the UK’s renewables targets by 2020—instead of relying on gas for power—would displace £60 billion worth of fossil fuel imports and create 110,000 jobs in the UK. xlv

Last year the average UK household spent £71 on gas imports from Qatar alone—a number that is set to double. 53

Greenpeace believes that rather than send increasing amounts of capital overseas to purchase gas, it is prudent economic policy to encourage investment in demand reduction and renewable energy here at home. This can help to rebalance the UK economy, aid a fragile economic recovery, and create high-skilled, long-term jobs.

53 (Calculation: Total imports from Qatar £4,251,336,852 (HMRC) * % of domestic gas use (301/906 Twh DECC ) / number of UK households (26.3 million, ONS ) = Amount spent per household for heating =£54 + Total imports from Qatar £4,251,336,852 (HMRC) * % of gas used for electricity (307/906 Twh DECC ) / % of electricity for domestic use (112/316 Twh DECC) number of UK households (26.3 million, ONS ) = £17.6. Total :£71
6.7 Shale gas and fracking

6.7.1 Limited supply and high cost

The argument has been made that falling gas prices in the US, resulting from shale gas extraction, could be replicated in the UK, driving down the cost of electricity generation. But this argument is based on numerous false assumptions.

Economically falling gas prices in the US are a one-off—the result of large amounts of new wells coming on stream just as the economy flat lined. But the dynamics are starting to change. Producers, unable to make a profit, are cutting back on new rigs and curtailing production. Indeed the latest figures from oil field services firm Baker Hughes show the “rig count” for gas there has steadily fallen, down nearly 30% since October last year, and likely to keep falling. As the rig count has fallen—the price has gone up with Shell now amongst many predicting the price in the US will increase by around 100% between now and 2014–15.

Even if they wanted to keep drilling, there appears to be far less gas to drill for than first thought. In a powerful illustration of the exaggerated claims of gas industry lobbyists, the 2012 Annual Energy Outlook from the US Energy Intelligence Agency (EIA) revised down its estimate of the technically recoverable shale gas resources in the US by a staggering 42%.

And the shale revolution from the US is extremely unlikely to travel to Europe—for economic, political and geological reasons.

Two recent reports, one by respected energy consultancy Poyry for regulator Ofgem, and the other by Deutsche Bank, have warned that Europe’s shale is unlikely to have a substantial impact on the price of gas, as it did in the US. Aside from the obvious difficulties of locating hundreds of thousands of wells in a far more densely populated region (in the US 1.2 million wells have been drilled so far), drilling and water costs are also likely to be far higher in Europe where the shale is generally deeper, the water more scarce, land rights less helpful and the regulations justifiably tighter. The world’s largest gas services company, Schlumberger, was recently reported as saying the price of drilling in Poland was already three times that of the US and the Polish geological institute has already significantly cut its shale gas estimates.

The UK government, following consultation with Shell, Centrica the EA and other agencies has come to a similar conclusion saying that if all the UK’s shale reserves are exploited it could provide “5, maybe 10%” of our energy needs. Even Cuadrilla who are actively seeking investment partners and whose shale reserve estimates are 40 times less than the last estimate by the British Geological Survey admits “Nobody on either side has said it would transform Britain.” Cuadrilla has also admitted that as little as 5% of its estimated reserve may be obtainable.

Meanwhile shale is unlikely to mitigate rising global gas prices driven by demand in Asia. Even in China—estimated to have the world’s largest shale reserves—large-scale extraction is years if not decades from reality. The geology and infrastructure in China—as in Europe—is very different to the US and water supplies are a major problem. In Argentina, another potential shale producer, the energy company with the rights to drill for shale was recently nationalised leaving investors sceptical as to whether it still has the resources or expertise.

In the IEA’s controversial recent report “Golden Rules for a Golden Age of Gas” the western nation think tank claimed that shale gas in Europe will be 50% more expensive to extract than in the US (where prices will rise as they are currently below cost) and that gas prices in Europe will rise by almost 40% on 2010 levels by 2020 partly to meet the higher extraction cost of shale. The IEA also claimed that shale gas extraction outside the US would not occur at scale for a decade or more saying “Most of the increase comes after 2020, reflecting the time needed for new producing countries to establish a commercial industry.”

But the agency admits that its price forecasts are based on no increase in global investment in energy efficiency or renewable energy reducing energy demand and increase supply from alternative sources. If such investments were made, Greenpeace believes, much of the investor logic for investment in shale would fade. It is therefore vital government resists the lobbying of the shale gas industry to limit investment in alternative sources of energy, and initiatives to reduce UK gas demand.

6.7.2 Climate change implications

Even if reserves exist there is increasing evidence that in addition to the known local environmental risks, including earthquakes and water pollution, shale poses a greater than expected threat to the climate. A study by the US-based National Oceanic and Atmospheric Administration (NOAA) found average leakage from shale production of 4%, enough to make burning gas from shale worse than coal. The Scottish Widows Investment Partnership (SWIP) recently highlighted these concerns in a report which warned that methane leakage cancelled out the benefit of switching from coal to gas.

The IEA hope these issues can be mitigated through tougher rules. But these techniques, like carbon capture and storage, remain unproven and in practice the IEA envisages tougher regulations for new fracking in China—for example—that currently exist anywhere in the planet. Should these rules not be implemented—or prove impossible to implement—the lifecycle emissions of gas from shale could be as high as coal.
The most worrying assertion in the IEA’s report, however, was the claim that widespread exploitation of shale reserves—instead of investment in efficiency and renewable energy—would result in catastrophic warming of 3.5 degrees C, far above the globally agreed 2 degrees target.xii In order to avoid this the UK has adopted stringent carbon budgets and the Committee on Climate Change, are warning the UK it must ensure the power sector is almost carbon-free by 2030 if the country is to remain on track with the emissions reductions set out under the Climate Change Act.

With global and UK new shale gas production—if even possible—not due to come on stream until the mid-2020’s it is hard to see how it could contribute meaningfully to the electricity mix if the UK is to stick to its climate targets.

Overall with almost all analysts expecting gas prices to rise over the next decade, with new production from shale even in the 2020’s limited and potentially environmentally unsound it is not clear what role, if any, shale gas could play in the UK’s electricity mix beyond delaying investment in renewables, accelerating climate change, driving up bills for consumers and leaving the UK dangerously dependent on imported gas for both its heating and electricity needs.

Greenpeace believes that shale gas neither should, nor could, play a role in powering the UK’s electricity mix.

In order to restrict the UK’s dependence upon expensive gas imports the Energy Bill must implement an emissions performance standard applying to all fossil fuel plant and be set at a lower level than proposed, consistent with ensuring power sector emissions in 2030 are no more than 50g/Kwh

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Written evidence submitted by the Association for the Conservation of Energy

The Association for the Conservation of Energy was formed in 1981 by major companies active within the energy conservation industry, in order to encourage a positive national awareness of the needs for and benefits of energy conservation, to help establish a sensible and consistent national policy and programme, and to increase investment in all appropriate energy-saving measures.

The Government’s draft Bill to revolutionise the electricity market completely omits any references to energy efficiency or consumption reduction, let alone the negawatt concept so familiar throughout North America. This is despite endless commitments to seek to integrate the energy saving option into long-term supply planning.

At present the proposed electricity market reforms focus entirely upon creating a framework to ensure sufficient electricity generation is in place to deliver the government’s climate and energy security objectives. Hence the claim that £120/200 billion will need to be spent on new power stations this decade, particularly under government scenarios regarding the electrification of heat.

Energy Secretary Ed Davey has faced mounting criticism of the omission. Challenged in a Daily Telegraph interview (May 26) as to the reasons for excluding what he and ministerial colleagues repeatedly describe as the “cheapest and most ecologically sound” way of delivering energy security, he responded only that: “We are looking into that. We have not excluded it from the final Bill, but we haven’t found a way yet to do it.”

A commitment to examining thoroughly whether running more purposeful energy saving programmes can reduce the need for new power stations was made last October by the senior civil servant, Jonathan Brearley, speaking to the British Institute of Energy Economics He is director of Energy Strategy & Futures at the Department of Energy & Climate Change (DECC).

He promised that, over the next months, there would be “strenuous consideration” of policy options designed to reduce overall demand. Speaking at a PRASEG workshop on April 23, DECC minister Greg Barker announced that “there is the technical potential to address up to 38% of electricity demand set for 2030, via energy efficiency measures.”

We accept that the final text of the proposed bill to change the electricity market will not be published until the autumn. Meanwhile the government is only admitting to “ currently reviewing the potential for incentivising further demand reduction in the electricity sector. This work will report over the summer, in time to fit legislative timetables, should it be required.”

It is now over thirty years since the House of Commons Select Committee on Energy first raised the question as to why public policy fails to compare investment options. Since then, innumerable Parliamentary energy and environment reports have reiterated this argument, without any substantive response from government. This inquiry should finally elicit that response.

June 2012

Written evidence submitted by Co-operatives UK

Summary

— There is huge potential for community and co-operatively-owned energy in the UK—up to 3.5GW.
— A dramatic scale-up of community and co-operative energy would deliver local economic and social benefits, as well as contributing to renewables capacity, carbon targets and energy security.
— The government has made strong statements of support for community energy. Yet the current energy system does not work well for mid-sized community schemes, who are too big for FITs but too small to operate successfully in an energy market designed for larger, commercial-scale generators.
— There is a danger that this will be made worse, rather than better, with the proposals in the Energy Bill, particularly Electricity Market Reform (EMR):
    — The complexity and uncertainty of the Contracts for Difference (CfD) system will cause significant problems for smaller generators.
— In addition, smaller generators risk being paid less for their output than commercial generators, because of the use of a market-average “reference price” which does not reflect the true price received by smaller generators.
— So the CfD system may well result in large commercial players being paid more for their power than small independent or community-owned generators, in direct contrast to government’s stated aims.
— Co-operatives UK would be pleased to discuss these issues further with the Energy and Climate Change Select Committee, and offer oral evidence to the Committee.

1. About Co-operatives UK

Co-operatives UK is the national trade body that campaigns for co-operation and works to promote, develop and unite co-operative enterprises. We have a unique role as a trade association for co-operatives. We work to promote the co-operative alternative across many sectors of the economy from high street consumer-owned co-operatives to pubs and renewable energy, healthcare to agriculture, credit unions to community owned shops. Our research with The Co-operative shows that there are now over 40 renewable energy generation co-operatives across the UK, which collectively have raised over £16 million in risk capital for investment. Together the co-operative economy is worth some £33.2 billion, employs 236,000 people and has 12.8 million members. Co-operatives are the largest membership movement in the country.

2. The potential for community energy

Community and co-operative energy is a vibrant and growing sector in the UK. Recent research by Camco and Baker Tilly estimates there is potential for over 2GW of community-owned renewables in England, or around 10% of the total capacity for onshore renewable energy. The potential for Scotland is estimated to be 1GW and for Wales 0.4GW. Therefore, UK capacity could be around 3.5GW, the equivalent of three or four conventional power stations. Community and co-operative energy can be at all scales, from a few solar panels on the roof of a village hall to large scale wind energy developments.

A dramatic scale up of community and co-operative energy would deliver local economic and social benefits and help the UK to meet its stated energy goals and other ambitions, particularly the vision of a strengthened civil society with greater citizen involvement.

3. Government commitment to community energy

The UK and devolved governments have made strong statements in support of co-operative and community energy. The May 2010 coalition agreement states “we will encourage community-owned renewable energy schemes where local people benefit from the power produced.” The new National Planning Policy Framework for England also asks planning authorities to “support community-led initiatives for renewable and low-carbon energy”.

Positive ministerial statements have also been forthcoming, for example the Minister of State for Energy and Climate Change, Greg Barker, made the case in parliament for a specific FIT to reward and encourage community-owned energy:

“Because of the way in which the system was constructed, there is no way of rewarding community schemes. There is no tariff for communities. There is no way of distinguishing between a City hedge fund manager and a village hall because of the way in which the system was constructed by the last government. We will try to change that so that we can specifically recognise community schemes, and we will consult on that work.”

4. The difficulties faced by community energy projects

Community and co-operative energy is still the exception rather than the rule in the UK. This is because, at present, it does not “fit”. In policy terms, the UK lacks a comprehensive and integrated framework of support for community and co-operative energy schemes. Mainstream commercial scale energy is backed by the existing regulatory structures. Research consistently shows how difficult it is for new entrants to compete alongside the established players for whom the market and regulatory context is designed.

In recent years, government has understood the need to encourage other types of energy generation, and has put incentives in place for small scale schemes, primarily through FITs, the Renewable Heat Incentive and, potentially, the new Green Deal. However, community and co-operative energy schemes are currently losing out, possibly because they are a hybrid. They exhibit a combination of commercial and social characteristics. They are profit-making, but are motivated by social and environmental benefit. They can’t be treated like the big commercial energy companies, but neither do they fit into the individual householder category. Many community and co-operative energy projects are mid-size in generation capacity: from 50KW to 10MW. It is inappropriate to apply the regulation and policy measures designed for much larger, commercial scale generators.
5. The issues with Electricity Market Reform

Given this policy context, we foresee specific problems with the new proposals envisaged as part of the Electricity Market Reform package, and specifically, the proposed Contracts for Difference (CfD) mechanism which will replace the Renewables Obligation.

At present, it is envisaged that all schemes above 5MW will have to enter the CfD process. Larger community-owned schemes will therefore be obliged to participate. They will encounter two main problems:

Complexity and uncertainty: Smaller producers will find it much harder to participate in the market. Given its complexity, the transaction costs are high, and proportionally much higher for smaller generators than larger ones. Whereas larger generators will be able to trade directly, smaller ones will need to work through aggregators, which bites further into revenues. In addition, because of the link to the “reference price” (as below), revenues from electricity generation are far harder to predict than under the ROC system, which causes uncertainty and increases costs and risks. This is a big problem for community schemes, who struggle to raise investment from banks.

The Reference Price: Under the EMR proposals, generators will receive a top-up payment, which represents the difference between the “reference price” and the “strike price”. However, the “reference price” is based on market averages, not the actual amount that the generator receives. For small renewable generators, the actual price they receive will in reality be considerably lower than the reference price. This is because they produce smaller amounts, and because output is less certain. They do not have the buying clout of major producers. So this will cause a perverse outcome in which large commercial players actually get paid more altogether for their power than small community generators.

6. Potential solutions

Co-operatives UK will be commissioning work to analyse the possible effects of the Energy Bill on community energy, and propose solutions. There are a number of possible solutions:

— Leave community schemes in the CfD process, but allow a higher “reference price” in recognition of their higher costs, and their contribution to a diverse energy mix
— Exempt community schemes from the CfD process, and increase the threshold for Feed-in Tariffs (which currently is set at 5MW)
— Create a new FIT system within EMR, for community and possibly other small independent generators.

These and other options will be explored by Co-operatives UK and others.

We would be pleased to work with the Energy and Climate Change Committee in scrutinising the draft Energy Bill to ensure that the Bill works to promote, rather than hinder, community generation.

June 2012

REFERENCES

i The potential for the Green Investment Bank to support community renewables, Camco and Baker Tilly for The Co-operative Group, December 2011 pp 3–4

ii National Planning Policy Framework, Department for Communities and Local Government, March 2012

iii Community energy in the UK: a review of the research literature, Sabine Hielscher, Community Innovation for Sustainable Energy, University of Sussex, www.grassrootsinnovations.org

Written evidence submitted by 2Co Energy

SUMMARY

— 2Co Energy owns the Don Valley Power Project (DVPP), one of the most advanced and highly regarded carbon capture and storage (CCS) projects in Europe.
— Timely and successful commercialisation of CCS technology in the UK is a vital component of the Government’s current energy policy and will play a critical role in meeting policy objectives in energy security and CO\textsubscript{2} emissions reductions, as well as providing significant economic benefits.
— 2Co Energy welcomes the provisions for a FID enabling process within the draft Bill. That this measure is implemented with success is critical: projects such as DVPP that reach FID will provide a substantial contribution to the realisation of the UK Government’s ambition for Electricity Market Reform.
— 2Co Energy recommend that, in conducting pre-legislative scrutiny, the Energy and Climate Change Select Committee seek to ensure that the Energy Bill provides parameters that balance affordability with the importance of securing timely and successful CCS commercialisation.
— Specifically, 2Co Energy offer three clear recommendations:
— That further clarity is provided on the precise process and timeline for securing bankable CfD’s via the FID enabling process prior to EMR implementation.
— That the term of enabling CfDs for projects supported under the CCS Commercialisation Programme is commensurate with the economic life of the power generator/capture facility.
— That further clarity is provided at an early stage on risk sharing in regard to the CCS Commercialisation Programme as part of the FID enabling process, and that that consideration is given to the cost benefits of the UK Government underpinning technology risk until operations are stable.
— In the following document we seek to set out the context and case for these recommendations.

1 About 2Co Energy

1.1 2Co Energy Ltd is a UK-based company committed to delivering substantial CO₂ emissions reductions through carbon capture, use and storage (CCUS) projects. The company was founded on two highly experienced teams; one with two decades of CO₂ transportation and Enhanced Oil Recovery (EOR) operations experience, and the other with a background in developing two of the world’s most advanced CCS projects. This provides an unparalleled wealth of experience.

1.2 In May 2011, 2Co Energy acquired Powerfuel Power Ltd and the Hatfield CCS project at Stainforth in South Yorkshire, via its wholly owned subsidiary 2Co Power Ltd, and renamed the project the Don Valley Power Project (DVPP).

2 About the Don Valley Power Project

2.1 DVPP is one of the most advanced CCS projects in Europe. The power plant received its planning permission in February 2009 and the company is working towards a final investment decision in mid-2013. It was the only UK project to win funding (£180 million) under the European Energy Programme for Recovery (EEPR) and is being assessed by the European Investment Bank (EIB) for further EU funding under the NER300 programme.

2.2 The net power output is planned to be 650MW of incremental low carbon electricity in 2016: enough to power one million homes just as security of supply becomes a real issue. In addition, EOR linked to DVPP could double remaining recoverable oil reserves in the North Sea.

2.3 The design of the plant includes CO₂ capture from a coal gasification plant and uses hydrogen rich gas for power generation from which the principal emission is water vapour. From the outset, the plant will capture 90% of its entire output of CO₂—up to five million tonnes per year. This would be a significant boost to the UKs emissions reduction targets.

2.4 Captured CO₂ will be sent via the proposed National Grid pipeline to the North Sea and stored securely and permanently in oil fields, in addition to being used for EOR. National Grid Carbon is working on the routing and permitting of both the onshore and offshore parts of a pipeline that would take the CO₂ to the target storage location.

2.5 EOR linked to DVPP could generate £5-£6 billion of oil production taxation revenue for Government. This could reduce the cost of CCS to the UK by nearly 50%, aligning UK energy and fiscal policy. The oil fields under consideration are approaching the end of their life, and would otherwise be decommissioned at substantial cost to HMT.

2.6 Total investment in the integrated CCS project is expected to be almost £5 billion. It will create new jobs and drive major investment in parts of the UK that need it most: the power plant project would employ over 2,000 people at the peak of construction and around 200 when in operation; the offshore project would create some 800 jobs during construction and 300 during operations.

3 Delivering CCS in the UK

3.1 The UK Government has committed to ambitious objectives in CO₂ emissions reduction, while recognising the energy security agenda as increasingly urgent. Yet economic recovery remains a primary focus. Investing in low carbon energy infrastructure has been identified as a key opportunity to deliver and align Government objectives. Specifically, CCS is in a unique position to help.

3.2 CCS technology is vital to achieving carbon emissions reduction targets with minimal economic impact—the IEA estimates this would cost 70% more without it.

3.3 Successful CCS demonstration would provide a pathway to clean coal and gas, allowing fossil fuels to be a part of the energy mix in a low carbon future where energy security is a concern.

3.4 CCS will enable power intensive industry to continue to operate in a carbon restrained future, sustaining jobs that would otherwise disappear. In addition, by increasing the lifetime of North Sea oil production, EOR linked to CCS would sustain well-paid, highly-skilled jobs offshore, and in UK regions dependent on the oil economy.
3.5 It is vital that the technology is deployed as soon as possible in order to ensure the environmental, energy security and economic benefits on offer. Producing one of the first commercial-scale end-to-end CCS demonstration projects in the world would position the UK at the forefront of the global CCS industry and create an international centre of expertise, with all the export opportunities that engenders.

3.6 Globally today only two CCS power projects have made their final investment decisions. Both are linked to EOR due to the increased economic viability of such projects. If the UK wants to compete on an international level with this pioneering technology, we must look at CCS linked to EOR.

3.7 2012 is seen as many in the industry as the “make or break” year for UK CCS. Any obstacles to successful deployment risk missed opportunity to achieve key objectives in economic recovery, energy security and carbon emissions reduction.

4 CCS AND THE ENERGY BILL

4.1 Successful and timely commercialisation of UK CCS is tied to the implementation of Electricity Market Reform, as provided for within the draft Energy Bill. It is essential that the Bill provides for parameters that balance affordability with the importance of securing timely and successful CCS commercialisation.

4.2 2Co Energy welcomes the provisions within the draft Bill for Investment Instruments to enable early investment, in advance of the CfD regime coming into force. The success of this measure is essential if the UK is to achieve CCS projects that are able to be operational by 2016–2020, or earlier: a requirement for eligibility for the Commercialisation Programme as set out in the CCS Roadmap, April 2012.

4.3 The precise workings of the FID enabling process will further impact the price to the consumer of power generated with CCS.

5 RECOMMENDATIONS

5.1 The Secretary of State for Energy and Climate Change states in the foreword to the draft Bill that the purpose of EMR is to reduce the risk and cost of capital for low carbon technologies. With this in mind, and with a specific view to ensuring the CCS-related outcomes Government is committed to achieving, 2Co Energy offers three clear recommendations for consideration within the pre-legislative scrutiny process:

5.1.1 Developers must place at risk tens of millions of pounds in funds in order to produce the definition needed to commit to a CfD. It is critical that investors have confidence that a CfD will be provided in a predictable timeframe to align a financial investment decision. 2Co Energy recommends that further clarity is provided on the precise process and timeline for securing bankable CfDs via the FID enabling process prior to EMR implementations.

5.1.2 Currently the draft Bill proposes a CfD length of 10 years for CCS projects supported under the CCS Commercialisation Programme. Yet CCS infrastructure is capital intensive with a minimum lifespan of 15 to 20 years. The 10 year scenario would risk increased cost being passed on to the consumer. In order to result in a more affordable power price for the consumer it is vital that the CfD length offered is carefully considered. 2Co Energy recommends that the term of enabling CfDs for projects supported under the CCS Commercialisation Programme is commensurate with the economic life of the power generator/capture facility.

5.1.3 The transportation of CO₂ and injection into geological formations for EOR purposes and permanent storage has supported successful commercial operations in the United States, where EOR technology has been proven for over 30 years and accounts for some 5% of oil production. However, this was catalysed by naturally occurring CO₂ formations: the capture of CO₂ from power stations has yet to be proven at scale. As such, traditional sources of finance are uncomfortable with the technology integration risk. To ensure the lowest cost option in regard to the CCS Commercialisation Programme, it is essential that flexibility is offered in relation to the period where the consumer/developer underpins new technology risk. 2Co Energy recommends further clarity is provided at an early stage on risk sharing as part of the FID enabling process. We further recommend that the lowest cost option with regards to the CCS Commercialisation Programme is for the UK Government to underpin technology risk until operations are stable.

June 2012

Written evidence submitted by Which?
presents and the importance of reducing CO2 from electricity and heat. Which? accepts that investment in new generation is needed to replace power plants and to meet climate change targets. Steps are required to lay the foundations for and bring on this investment.

1.3 Since consumers are effectively underwriting this significant investment through their energy bills, affordability must be at the heart of all of the Government’s considerations. The increasing cost of electricity bills is the number one financial concern of consumers, so it is crucial that this investment comes at the lowest possible cost.

1.4 The Government’s recognition of the importance of affordability is welcome. However its statements on the impact on consumers are dependent on a series of high level assumptions that might not be realised. In particular, assumptions are made about future gas prices, which are inherently volatile, and the cost of capital reductions associated with introducing Contracts for Difference (CfDs). We are concerned that the Government’s pronouncements seem over confident when uncertainty remains about the structure of the CfDs and the interim investment instruments.

1.5 The Energy Bill must ensure that external judgements can be made about whether consumers are getting value for money for the contracts negotiated with generators. This means that information about the contracts and negotiations must be put into the public domain, clarity must be given about how contracts will be scrutinised and processes must be put into place to ensure that the Government is held accountable. Further detail is needed in the draft Energy Bill to ensure that this process is transparent.

1.6 Without this, consumers are likely to question whether investment really is cost effective. The Government previously set far too generous support levels under the Renewables Obligation and the Solar PV FiTs regime. There has been a failure to put in effective scrutiny and control mechanisms for the smart meter roll-out and the Energy Company Obligation (ECO). A much more robust approach to protect consumers is therefore needed.

1.7 The lack of a rigorous approach to keeping costs under control could further undermine trust in the energy market. This in turn could magnify the already high levels of consumer disengagement with the energy system, energy efficiency and energy use. Should this result in a consumer backlash, it could create political and policy uncertainty, which may deter investment.

1.8 RECOMMENDATIONS

— Further detail is needed in the Energy Bill about how contract negotiations will be made transparent, how the CfD process and the interim arrangements will be monitored and scrutinised and how the Government and the national system operator will be held accountable.

— The draft Energy Bill states that the Secretary of State must have regard for “the likely cost to consumers”. Further detail is needed on how this will be interpreted and scrutinised.

— The cost of CfDs must be passed through to consumers on a per unit basis to ensure that it has a less regressive impact on household energy bills. Further analysis is needed on the impact of this legislation on vulnerable consumers.

— The most important detail about CfDs will be in secondary legislation. The Select Committee should have a role in scrutinising this detail before Parliament’s final consideration of statutory instruments.

— The Carbon Price Support (CPS) is an unnecessary measure that increases costs for consumers, is unlikely to provide long-term certainty for investors and as a result of the draft Energy Bill represents policy duplication. It should therefore be abolished.

— The impact of Electricity Market Reform (EMR) on consumers’ bills means that the Government must ensure that people can take steps to reduce their energy costs. In particular, comprehensive reform of the retail market is needed so that it works for consumers and an effective energy efficiency strategy is needed to help people to cut their energy usage.

— The Government should use the Bill as an opportunity to reform energy tariffs. Ofgem’s Retail Market Review (RMR) proposals do not go far enough and could institutionalise the existing “two-tier” market. The Government should legislate for a simple, standardised format for all tariffs from all suppliers, so that consumers can work out at a glance which tariff is the cheapest.

2. DECARBONISATION AND LOW CARBON INVESTMENT MUST BE DELIVERED COST EFFECTIVELY

2.1 The impact of policies to support low carbon electricity on consumers’ bills has thus far been fairly small, although by no means insignificant. The Committee on Climate Change (CCC) suggests policies added around £33 to the average annual domestic electricity bill in 2010 and this figure is likely to be similar in 2011. As low carbon generation makes up a larger share of electricity and the carbon price increases, the impact on prices will grow.

— The Government must ensure that people can take steps to reduce their energy costs. In particular, comprehensive reform of the retail market is needed so that it works for consumers and an effective energy efficiency strategy is needed to help people to cut their energy usage.

— The Government should use the Bill as an opportunity to reform energy tariffs. Ofgem’s Retail Market Review (RMR) proposals do not go far enough and could institutionalise the existing “two-tier” market. The Government should legislate for a simple, standardised format for all tariffs from all suppliers, so that consumers can work out at a glance which tariff is the cheapest.

54 Which? online survey of 2,094 adults, November 2011.
55 A fall in the EUA price will have led to a small reduction in the carbon price impact, but the cost of the FIT for micro-generation and RO will have lead to a very slight increase.
56 Committee on Climate Change Household Energy Bills-Impact of Meeting Carbon Budgets, December 2011: 14
the wholesale price of gas. The higher the gas price, the less low carbon support costs will increase electricity prices bills.

2.2 Which? does not favour particular low carbon technologies over others. Fundamentally, there are two reasons for this. First, deliberative research indicates that consumers’ views on different forms of electricity generation vary significantly. Second, there is significant uncertainty at this stage around the relative future costs of the different low carbon alternatives.

2.3 The Government’s ultimate goal for low carbon generation should be grid parity with other generating technologies. As the costs of deployment fall when technologies mature and the EU ETS becomes a more effective price signal, no subsidy premium for low carbon power should be required. However, we recognise that in the interim, the Government needs to put in place policies to provide financial support to encourage investment in low carbon electricity.

2.4 Although we recognise that the Carbon Price Support (CPS) is not under consideration in the Draft Energy Bill, it remains a key part of Electricity Market Reform. We remain unconvinced about the likelihood of the CPS providing the long-term certainty and confidence for investors. The annual CPS rate is only set two years in advance—far shorter than the timescale that low carbon investment decisions are based upon. While the CPS may reduce the level of subsidy required to support low carbon generation with CfDs, this is an unnecessarily complicated approach and represents policy duplication. Simplicity should be seen as a positive feature of the electricity market, and one that the Government should actively encourage.

2.5 We are not setting out specific recommendations with regard to the Capacity Mechanism, however it adds a further layer of complexity. We have concerns that some of the more CO2 intensive fossil fuel plants, which the CPS and EU ETS deliberately seeks to dis incentivise, are at the same time supported financially through the capacity mechanism. Effectively, consumers could end up paying twice—once through the higher electricity prices resulting from the CPS and EU ETS, and then again through payments to keep flexible fossil fuel plants available.

2.6 The Capacity Mechanism’s final design should be compatible with promoting demand shifting as well as demand reduction and new generation. We note that this is not explicitly stated in the Bill. More broadly, the overall reform package should help to support the development of interconnection. This should help to keep down the cost of managing a higher proportion of renewables on the system.

3. CONTRACTS FOR DIFFERENCE AND INVESTMENT INSTRUMENTS

3.1 There is no perfect mechanism for supporting low carbon generation. CfDs could prove a cost-effective way of doing this. The existing Renewables Obligation (RO) has been expensive for consumers. It was particularly generous for landfill gas and onshore wind before the introduction of “banding”, and more recently, in its support for biomass.

3.2 Affordability was one of the key reasons the Government opted for CfDs. Modelling for DECC suggested that continuing with the RO, or moving to a more straightforward Premium Feed In Tariff, would be more expensive than the “two-way” CfD. Generators will have to pay back money to consumers if the market reference price ever rises above the contract strike price.

3.3 Nevertheless, the “two-way” CfD model will make it impossible to predict how much subsidy consumers will give to low carbon generators in any year. This is because the level of support will depend on the market reference price, which is uncertain. As the model develops, the Government must provide further analysis about why the financial benefits associated with CfDs outweigh the uncertainty. The Government must also demonstrate how they are keeping a firm handle on costs.

3.4 CfD strike prices will not be determined until the second half of 2013 and setting these at appropriate levels will clearly be difficult. Developers naturally have the greatest understanding of the costs of these electricity projects. This gives these companies advantages over the Government and other stakeholders, including consumer groups, during any consultative process. Lessons must be learned from the initial rates of support under the RO and the Feed-in Tariff for Solar PV, since both of these proved generous to the benefit of electricity generators and not electricity bill payers.

3.5 Negotiating fair and appropriate strike prices for nuclear will be a particular challenge, given the uncertainty around construction costs. Unlike most CfDs for renewables projects, nuclear contracts will be bespoke. Only a few companies are considering investing in nuclear in the UK and this will undoubtedly give these firms a strong bargaining position during contract negotiations.

57 Programme of qualitative (including deliberative) research with 100+ UK consumers in Autumn 2011, conducted by independent research consultancy Quadrangle. A deliberative research methodology differs from conventional qualitative research in that it gives participants more time, information and opportunity for discussion in order than informed opinions and recommendations can be given. This approach encourages participants to think and act as ‘citizens’ (more rational, logical etc) rather than consumers.

58 In modelling carried out for the Government by Redpoint, the CfD option came out £2.5 billion cheaper than a Premium Feed-in tariff to deliver the same level of investment, DECC, Planning our electric Future, 2011, p.37.
3.6 CfDs contracts must be designed in such a way that they provide robust information on costs. Which? wants transparency around costs and competition between the different low carbon generating technologies in order to drive down costs.

3.7 Which? is therefore concerned about the level of transparency that there will be in this process. The draft Bill has little detail about how the CfD process will be made public and the role of Parliament, Ofgem and other external stakeholders in monitoring these new arrangements. While it is encouraging that the Secretary of State must give regard to “the likely cost to consumers” when making CfD regulations, it is unclear how this will be interpreted.

3.8 The most important detail about CfDs will be in secondary legislation. We would therefore like to see the Select Committee play a similar scrutiny role in advance of Parliament’s final consideration of statutory instruments.

3.9 For example, significant questions still remain about how the CfD repayment model will work and the overall cost of capital reduction; whether CfDs are the most appropriate support for both nuclear and renewables; and how to ensure that there is a clear reference price for each wholesale power market against which CfD strike prices are struck.

3.10 With regard to the interim powers for the Secretary of State to introduce investment instruments, Which? is encouraged by the parliamentary scrutiny that will be required. However, there is also a lack of detail about the precise way that the cost to consumers of these contracts will be made public and scrutinised.


4.1 Estimating and clearly presenting the likely future cost impacts of policies to support low carbon energy is incredibly difficult. However, DECC’s presentation of its modelled data is often unclear and at times disingenuous—for example, by conflating the costs and savings of policies.

4.2 While Government modelling suggests policies to encourage generation and energy efficiency will in total lead to a 27% increase in the electricity price by 2020 and a 28% rise by 2030, it states that overall policy will lead to lower bills due to policies encouraging energy efficiency. Yet, while all consumers feel price increases, their ability to benefit from energy efficiency varies significantly. This depends on a range of factors including property type, tenure and income.

4.3 Messages that suggest that overall policies will not add to bills undermine the case for action on energy efficiency. If such savings do not materialise, it is likely to increase consumer distrust towards energy companies and the Government’s low carbon policy agenda.

4.4 Despite the fact that DECC has looked at the impact of the EMR across income deciles, further analysis is needed on the full impact of these proposals on vulnerable consumers. For example, analysis should be undertaken about the impact for vulnerable consumers who use electric rather than gas heating.

4.5 Which? understands that the cost of the CfDs will be passed through to consumers on a per unit basis. This is welcome and will have a less regressive impact on households than passing costs through on a per household basis or leaving it to the discretion of energy companies how they do this, as is currently the case with CERT and the ECO.

5. Reforming Energy Tariffs

5.1 Which? recognises that this legislation is focused on reform of the electricity market, rather than the retail market. We have been engaging with Ofgem’s Retail Market Review (RMR).

5.2 However, since Ofgem confirmed its proposal for the reform of energy tariffs in December 2011, Which? has been calling for the Government to intervene and ensure that all energy tariffs are simple and fair. With Ofgem now stating that their revised RMR proposals will not be published until later this year, we believe that the Energy Bill provides an opportunity to do so.

5.3 Which? previously set out the case for reforming energy tariffs in our written evidence to the Energy & Climate Change Select Committee’s inquiry into “Consumer Engagement with Energy Markets”. Which? believes that a simple format should be mandated for all tariffs. This would enable people to only look at unit rates to work out which energy tariff is cheapest.

5.4 Our recent experience through running the Big Switch with 38 Degrees has further strengthened the case for reform. Almost 290,000 people signed up for the Big Switch, the UK’s first nationwide collective switch. Co-operative Energy won the Big Switch auction, resulting in average savings of £123 a year for around 200,000 people and a possible collective saving of £25 million on household energy bills.

5.5 The Big Switch confirmed that the vast majority of consumers struggle to get the best from the energy market. People that signed up for the Big Switch were on a total of 1,435 existing tariffs. Furthermore, at present, it is impossible to compare tariffs “at a glance” with a minimum of 98 prices per dual fuel tariff. Most

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59 ‘By 2020, households are estimated to be spending, on average, 7% less to heat and power their homes compared to what they would be paying in the absence of policies’ (Chris Huhne, Nov 2011)
people who switch do so to save money, yet indications are that around 40% do not achieve a saving. This is no wonder when switching sites are the only source of a “whole of market” comparison, yet few use or switch via them.

5.6 Collective switching by trusted intermediaries provides an opportunity for consumers to navigate this unnecessarily complex market. However, Which? remains convinced that a more radical solution would be to extend Ofgem’s proposed simple format for standard tariffs to all tariffs for standard energy meters.

June 2012

Written evidence submitted by Aquamarine Power

SUMMARY
— We welcome the Bill’s intention to provide clarity by mid-2013 around the FIT strike price for marine energy—in line with the Energy and Climate Change Committee’s report on the future of marine renewables in the UK.
— However it is the strike price for marine energy after 2017 which is critical for the growth of the marine energy industry. We remain concerned that early-stage investors will find it hard to make an investment case for early arrays without clear sight of the market towards 2020 and beyond.
— It would be welcome if the proposed Final Investment Decision (FID) facility, where DECC will give comfort to an investor of future strike price, is available to investors in marine energy projects.
— If DECC is not able to give clarity regarding strike prices and operation of the CfD by mid-2013, we suggest the UK and Scottish governments consider extending the current RO/RO (Scotland) to 2020.
— We remain committed to working with DECC to ensure a stable long-term market for marine energy in the UK and will work with others in the industry to give DECC evidence on strike price and expected build out scenarios up to 2020.
— Competitive price setting. We still have fundamental concerns regarding how this will operate in practice. Previous attempts to do this in the UK through the Non Fossil Fuel Obligation in the 1990s were a failure—and were a major contributor to the UK losing its early technology lead in wind energy. Competitive price setting is an academic exercise which does not work in practice.
— We do not agree that the CfD mechanism will inevitably lead to a lower cost of capital. The mechanism is untried and will therefore be viewed as more risky, which may initially lead to a higher cost of capital (and therefore impact on consumers).
— Contracts should be set at 20 years in order to maintain a reasonable return, otherwise investors will discount last five years. A 20 year contract length is in line with current contracts under the RO and the design lifetime on renewable energy technologies.
— The majority of the UK’s marine energy development sites are in Scotland. The Scottish Government retains powers to set the Renewables Obligation in Scotland. It is crucial therefore the Scottish and UK governments work closely together to ensure a coherent, effective and seamless package of reforms will be delivered, fully aligning the respective powers of the Scottish and the UK parliaments. The proposals should ensure the Scottish Government has a statutory role in the EMR and CfD institutional framework, a statutory ongoing role in the governance of National Grid and a statutory role for Scottish Ministers in formulating the Strategy and Policy Statement for Ofgem to better align the work of the regulator with the policy aims of government.

COMMENTS
1. The next ten years will be critical to the success of the UK’s world-leading marine energy industry. The support of the UK and Scottish governments is vital. Making energy from the oceans is a major challenge—both technologically and economically. In order to reach the point where marine energy is competitive with other forms of energy, clear and consistent support is required
2. The swift, clear and successful implementation of Electricity Market Reform is the single most important determinant of whether the industry will succeed in the UK, or develop elsewhere.
3. Investment certainty in the early years is critical, and investors require commercial certainty to outweigh technology risks and uncertainty. It is essential that the well-earned momentum in the industry is not lost. The UK will not get another opportunity to build a marine energy industry. We now know that a minimum investment of £100 million per technology is required, not including the cost of projects. This level of investment required to commercialise a technology would make another start prohibitive. Unless the relatively advanced technologies get over the line this will be the end of the industry.
4. We welcome the support of the UK and Scottish governments to date. It is through this support that the UK has succeeded in taking a global leadership position in a number of technologies. It is worth re-iterating

60 Ofgem Energy Supply Probe 2008:
%20Initial%20Findings%20Report.pdf
that every £1 of grant support to leading marine energy developers has leveraged £6 of inward investment. Companies such as ABB, SSE, Siemens, Rolls Royce, Vattenfall and Alstom have all invested in marine energy in the UK. If Britain is seeking a growth agenda, marine energy offers the prospect of economic growth, inward investment and high value, skilled green collar jobs.

5. We are grateful for the introduction of supportive grant schemes, including the UK Marine Energy Array Demonstrator fund and the Scottish Marine Renewables Commercialisation Fund, and the intent to introduce five ROCs for wave and tidal technology across the UK.

6. But in order to scale up the investment required, clear market signals for 2017 onwards are required.

7. What incentive is there for companies to invest the £10s of millions required to support the first marine energy arrays in the run up to 2017, without a clear idea there will be a clear and consistent market for these technologies in the decades ahead?

8. There are at present a number of developers pulling together equity for the MEAD and MRCF projects. Whilst these will fall before 2017 they will be part of larger projects and therefore for the schemes to work and give best chance of equity coming through clarity is essential in 2013.

9. It is therefore crucial the EMR process not only gives a very clear signal on how the mechanism will work up to 2017, but offers clarity as early as possible on the operation of the market thereafter. If DECC is not able to give clarity regarding strike prices and operation of the CfD by mid-2013, we suggest the UK and Scottish government considers extending the current RO to 2020.

10. The RO is an effective and proven mechanism which has succeeded in delivering significant renewables investment and growth in the UK. Extension of the RO would be considered a very positive signal by the industry and would incentivise investment decisions in the medium term.

11. The implementation of auctions or competitive price setting may have attractions from a theoretical economic standpoint but there is scant evidence to suggest they work in practice. There is a genuine risk the implementation of competitive price setting will result in significant under-deployment and the UK failing to meet its renewable aspirations and the economic benefit to business and consumers which will result.

12. The evidence of the UK Non Fossil Fuel Obligation is testament to this. Auctions incentivise low bids which subsequently do not get built. There were five NFFO tranches offered between 1990 and 1998. Over the five NFFO rounds, contracts for 2,680MW of wind power capacity were awarded; by 2000 only 395MW were operational (DTI, 2001). Why will a policy instrument which failed so spectacularly in the past somehow succeed in the future?

Auctions are Fundamentally Flawed as a Price Discovery Mechanism

13. The auction structures mentioned in the EMR will not lead to reliable price discovery. In competitive market segments there will be a tendency to bid over-enthusiastically, impairing project delivery whilst in uncompetitive markets there is the potential to abuse market power. In pre-commercial market segments, such as marine renewables, there will be a small number of competing firms and a number of other non-financial barriers to be overcome prior to power production—including planning, and project technology. Under such a scenario, a single developer would have the potential to skew the price offered and block the market to all other early-stage developers. It will become a “race to the bottom.”

14. As a medium term ambition the Government has proposed to enter all low carbon technologies into a single auction and hints at penalties for non-delivery. Neither of these options works. The single auction approach overlooks the fundamentally different financing, operational and investment characteristics of different technologies, at different stages of development, whilst the penalty for non-delivery is not suited to the UK’s protracted planning and grid development regimes and significantly increases the risk adjusted development cost as well as acting as a barrier to entry to new market players.

15. It is instructive to examine the experience of using the Non Fossil Fuel Obligation in the UK. The introduction of the NFFO in the 1990s provided a price support mechanism for renewable energy developers to compete for premium priced energy contracts. The NFFO scheme was implemented in 1990s and was originally intended to support nuclear energy as part of a move to privatisate the industry. In total there were five NFFO funding tranches during the decade which attracted bids from renewable and nuclear project developers. Bidders competed primarily on price; the lowest prices received government allocated capacity first. The development of the wind energy sector in the UK is illustrated in Figure 1.
FIGURE 1: Financial Support and Installed Capacity in the UK over Time (DTI, 2001; Elliott, 2005) NB: The higher, consistent ROC prices resulted in an exponential growth in wind power capacity. An approximate electricity market price of £50/MWh has been assumed.

16. Due to the competitive nature of the NFFO scheme, the average price of wind energy reduced from 11p to 2.9p/kWh over the decade (Department of Trade and Industry (DTI), 2001).

17. While the NFFO funding rounds assisted in advancing the competitiveness of renewable energy with fossil fuels, contracts awarded under NFFO 1 and 2 expired in 1998 and therefore developers had a fixed period of time to maximise energy production under premium prices.

18. This restriction put a strain on existing manufacturing facilities, forcing developers to import turbines that could be rapidly installed and commissioned. At the same time, a focus on oil and gas exploration diverted UK attention away from developing a wind energy sector.

19. Foreign wind turbine manufacturers were also reluctant to establish a UK presence due to the inconsistency in allocated wind energy capacity in each NFFO funding round. This insecurity was compounded further by an average three-year consenting period, which reduced the amount of time available during which energy could be produced under contracted premium prices. Over the five NFFO rounds, contracts for 2,680MW of wind power capacity were awarded; by 2000 only 395MW were operational (DTI, 2001).

20. We do not see how an auction system can be effectively implemented, and an ineffective auction system will seriously undermine the ability to deliver the Government’s carbon and renewable objectives.

ABOUT AQUAMARINE POWER

21. Aquamarine Power is a wave energy company, headquartered in Edinburgh.

22. The company is currently installing its second full-scale device—the 800kW Oyster 800 at the European Marine Energy Centre (EMEC), Orkney. The array will comprise three Oyster wave power devices, with two further devices to be installed in 2012 and 2013.

23. The project is being supported through a groundbreaking £3.4 million loan with Barclays Corporate—the first time a UK marine energy project has succeeded in securing bank debt finance. The loan will be repaid over five years from revenue generated by the scheme.

24. The company previously installed a single full-scale 315kW Oyster 1 device at Billia Croo in 2009.

25. Aquamarine Power’s Oyster wave power technology captures energy in nearshore waves and converts it into clean sustainable electricity. In simple terms, Oyster is a wave-powered pump which pushes high pressure water to drive a conventional onshore hydro-electric turbine.

26. Aquamarine Power has raised over £70 million of private and public funding to date including £15 million investment by global power and automation company ABB. Aquamarine Power’s investors also include SSE (Scottish and Southern Energy plc), the UK’s leading generator of renewable energy, Scottish Enterprise and the Environmental Energies Fund managed by Scottish Equity Partners.
27. The company has a clear route to market for its Oyster device. In 2009, Aquamarine Power signed a development agreement with SSE Renewables to develop up to 1GW of Oyster wave farms. In 2010, Aquamarine Power was awarded a 200MW lease option in partnership with SSE Renewables as part of world’s first seabed leasing round for wave and tidal projects. The company also has a 40MW lease option for a proposed wave energy site on the Isle of Lewis.

28. The company’s Chief Executive Officer Martin McAdam and Chief Finance Officer Richard Round would both welcome the opportunity to meet with members of the Select Committee and give evidence if required.

June 2012

Written evidence submitted by the Nuclear Industry Association (NIA)

1. The Nuclear Industry Association (NIA) welcomes this opportunity to provide written evidence to the Committee on this issue.

2. The NIA is the trade association and information and representative body for the civil nuclear industry in the UK. It represents over 270 companies operating in all aspects of the nuclear fuel cycle, including the current and prospective operators of the nuclear power stations, the international designers and vendors of nuclear power stations, and those engaged in decommissioning, waste management and nuclear liabilities management. Members also include nuclear equipment suppliers, engineering and construction firms, nuclear research organisations, and legal, financial and consultancy companies.

3. Some of these companies, particularly the prospective new build operators, may be making their own submissions to the Committee. We recognise that different developers may have specific points of interest, and will restrict our submission to broad industry-wide comment.

Overview

4. The NIA very much welcomes the Bill’s publication as a demonstration of the Government’s commitment to making progress on electricity market reform. As stated in earlier evidence the NIA strongly agrees with Government that the UK needs credible plans to decarbonise the power sector if it is to meet its energy security and climate change targets. With all but one of our existing nuclear stations likely to close in the next decade and a half delays in taking decisions now could result in the UK becoming locked into a high carbon scenario.

5. The Climate Change Committee (CCC) has recommended that if the UK is to meet its emissions targets the power sector be almost completely decarbonised by 2030—with 30–40 GW of new low carbon plant added to the grid. Significantly it also concluded that current electricity market arrangements were unlikely to deliver this cost effectively. Whilst low carbon generation has lower operating costs than fossil generation its higher up front capital costs make it difficult to finance in the current market.

6. Although important details remain to be ironed out we believe that, in principle, the Governments reforms will create a package that could provide investors with the certainty they need to proceed with the construction of new low carbon plant. Importantly it will also provide long term price stability for consumers, protecting them from high or volatile fossil fuel prices. The Government’s view is that electricity bills after the implementation of EMR are expected to be, on average, lower than they would have been in the period up to 2030.

7. In addition to its carbon reduction and security of supply benefits a substantial nuclear new build programme will also of course lead to significant industrial and employment benefits, including major opportunities for the UK nuclear supply chain, a boost for UK manufacturing, regional regeneration, and training and career opportunities. As the CBI recently stated the “multiplier effect” of investment in infrastructure is much greater than that in other sectors. It could therefore be a major engine for growth at a critical point in the economic cycle.

8. That said it is vital that the reforms should be implemented as quickly as possible. As the Committee will be aware the lead nuclear consortium (EDF Energy/Centrica) submitted an application last year to the Infrastructure Planning Commission for a Development Consent Order for Hinkley Point C, and are expecting to take a final investment decision by the end of this year. If this is to happen there will need to be clarity on market arrangements at that point, and therefore real progress in taking forward the legislation. We hope that the pre-legislative scrutiny by the Committee will make a major contribution to this process.

Contracts for Difference (CfD)

9. Turning to specifics we agree with Government that the combination of CfDs and the carbon price floor will provide the stable, predictable returns required to finance long term capital intensive low carbon projects. However as the Government concedes, considerable detail remains to be worked out.

10. As Government recognises industry has “strong concerns” about the current legal framework and payment model. They believe this is insufficiently robust for potential investors. Industry strongly suggest that
a “single counterparty” payment model would be far better suited to meeting the objectives of Government by incentivising the market to invest in low carbon projects.

11. However with regard to the process in general, whilst we applaud government for delivering progress to date; there are a number of issues which are critical to successful progress on a new build programme, such as clarifying the nature of the CFD counterparty, negotiation of strike prices for individual projects, and identifying realistic inflation indices and a transparent and fair reference price. Whilst these are clearly more matters for the new build developers than for the NIA, it is important that negotiations proceed quickly to reach a solution satisfactory to all parties.

TRANSITIONAL ARRANGEMENTS

12. The Government states that is its intention for CfDs to be available from 2014, but that to avoid the risk of an investment hiatus they would work with developers on transitional arrangements. We are aware discussions have begun with EDF Energy and Centrica on this, but given the very tight timescales—EDF’s final investment decision on Hinkley Point C is expected at the end of this year—it is important these are progressed as a matter of urgency. Similarly it is important that any associated necessary state aid approvals are progressed to the same time-scale.

CAPACITY MARKET

13. We agree with Government that, given the growing proportion of electricity generating capacity provided from intermittent sources, a capacity mechanism is an important element in the EMR package. Left to its own there is no guarantee that, over the next few years, the market would deliver an acceptable standard of security of supply.

14. That said the detailed mechanisms for achieving such a capacity mechanism are more a matter for the prospective new build operators than for the NIA. What is important is that the final arrangements are practical, and provide the stable policy framework needed to underpin very large scale investments in new nuclear generating capacity.

ENERGY STRATEGY AND POLICY STATEMENT

15. The NIA supports the Government’s proposals for a new Strategy and Policy Statement setting out Government’s strategic priorities, and describing the respective roles of Government and Ofgem. As the Government states, the role of the regulator is becoming much more complex. It therefore makes sense for Ofgem to have regard to the Government’s policy goals, particularly on energy security and climate change, in taking its independent regulatory decisions.

OFFICE FOR NUCLEAR REGULATION

16. Finally, whilst we note that the Committee is limiting its scrutiny to Part I of the Bill, we very much support the inclusion in Part 2 of provisions consolidating the ONR onto a statutory footing. As the Committee will be aware the nuclear industry, and the NIA, has long supported this reform, which we believe is vital if the UK is to deal effectively with the new challenges resulting from the new nuclear build programme and our growing decommissioning and nuclear legacy activities.

June 2012

Written evidence submitted by the Confederation of UK Coal Producers

1. I am writing to you on behalf of The Confederation of UK Coal Producers (CoalPro) to provide written evidence to the Committee’s inquiry into the draft Energy Bill.

2. CoalPro represents member companies who produce over 90% of UK coal output. UK coal production in 2011 was about 18.5 million tonnes, the great majority of which was supplied to the electricity generating industry and coal produced in the UK generated over 10% of the UK’s electricity supplies. CoalPro therefore takes a close interest in the developments affecting the future of the electricity generating industry, including the proposed Energy Bill, and is therefore pleased to be able to provide written evidence to the Committee’s inquiry.

3. By way of background, coal, indigenous and imported, supplies around 30% of the UK’s electricity supplies, but this proportion increases to over 50% at peak periods in winter. In recent months, coal-fired generation has increased significantly compared with the position twelve months ago and coal-fired generation reached a peak of 52% in the 2011/12 winter. The prime reason for this has been the high price of gas.

4. In fact, coal-fired generation has continued at a high level throughout the spring and even in the recent period of very warm weather was generating over 40% of UK electricity. Again the prime reason was the continuing high price of gas but a contributory factor in the warm spell was a very low level of wind generation in still, anti-cyclonic conditions.
INTER-RELATIONSHIPS WITH OTHER EUROPEAN AND UK LEGISLATION

5. There are complex inter-relationships with other European and UK legislation and CoalPro urges the Committee to carefully consider these and their effects on the Government’s objectives lying behind the proposed Energy Bill. The European Industrial Emissions Directive (IED) will require major investment in the existing fleet of coal-fired power stations, and to some extent the older gas-fired power stations, if they are to continue. If this investment does not take place, there is a real risk of a capacity gap in the latter part of this decade and in the early 2020’s before the transition to low-carbon generation is completed. The Energy Bill should contain provisions to support this necessary investment.

6. A fundamental element of Government energy policy is the introduction of Carbon Price Support (CPS) to ensure a Carbon Price Floor (CPF) with effect from 2013 and with a rising trajectory thereafter. CPS is introduced via Finance Bills and does not form part of the Energy Bill. However, its impact will be so dramatic that the provisions of the Energy Bill cannot be considered in isolation from it. In particular, a rising CPF will make it extremely challenging to justify investment decisions in the existing fleet of coal-fired power stations to meet the requirements of the IED and may lead to widespread premature closures with major security of supply implications. It is essential that the Energy Bill contains robust measures to address this issue.

MEASURES OTHER THAN THOSE RELATED TO ELECTRICITY MARKET REFORM (EMR)

7. In meeting the Committee’s timetable for the Submission of written evidence, I have not had the time to scrutinise the provisions of the draft Energy Bill in detail. I therefore provide only general evidence in respect of most of the provisions of the Bill. CoalPro’s main area of concern relates to the Emissions Performance Standard (EPS) within the EMR provisions. CoalPro has no particular comments to make on the introduction of a Strategy and Policy Statement, the creation of the Office for Nuclear Regulation, the Government Pipeline and Storage System, or the technical change to the Electricity Act 1989 in relation to offshore transmission.

THE EMR MEASURES—CONTRACTS FOR DIFFERENCE

8. At the heart of the Bill is the EMR package of measures. CoalPro strongly favours the proposal to introduce Contracts for Difference (CfD) to support investment in low-carbon generation in order to remove long-term exposure to electricity price volatility. However, in relation to Carbon Capture and Storage (CCS) projects, it is important to have measures in place to also limit exposure to fuel prices which can also be subject to extreme volatility. Beyond that, consideration needs to be given to the need for a Government guarantee for the possibility of leakage, however unlikely, from CO\(_2\) stores. Without such measures to cover these risks, projects may not be bankable.

9. CoalPro understands the requirement to put in place long-term instruments to enable early investment in advance of the CfD regime coming into force and recognises the need for Conflicts of Interest and Contingency Arrangements and Renewables Transitional arrangements.

CAPACITY MARKET

10. The introduction of a Capacity Market is vital to ensure the security of electricity supply during the transition to low-carbon electricity generation. The Capacity Market provisions must be carefully designed to support investment to extend the lives of existing fossil fuel power stations beyond what they might otherwise be. In particular, a properly designed Capacity Market can play an essential role in providing an income stream which will support the investment necessary to meet the requirements of the IED.

11. In general, we do not support capacity market payments being made available to generation plant which will benefit from CfDs. This would seem to be unnecessary if CfDs are properly designed. However, if capacity payments were made available to CCS stations, this would be one way of offsets the risk of fuel price volatility.

EMISSIONS PERFORMANCE STANDARD (EPS)

12. CoalPro fundamentally disagrees with the introduction of an EPS for CO\(_2\) at the level of 450g CO\(_2\) per kWh. The stated intention is to limit carbon dioxide emissions from new fossil fuel power stations but, in practice, this will only apply to new coal-fired plant. It will prevent the construction of any new coal-fired plant without CCS on a significant proportion of its capacity whilst permitting new gas-fired plant to be built unabated. Combined with the extraordinarily generous arrangement to grandfather this EPS through to 2045, this represents an enormous incentive for a new dash for gas. In effect, gas is given a free ride.

13. Elsewhere in Europe, the progression to low-carbon generation will be achieved for coal-fired plant by the replacement of the existing fleet by new, high efficiency plant, followed by the subsequent retrofit of CCS.
Ev w64  Energy and Climate Change Committee: Evidence

This incremental approach guarantees progressively lower carbon emissions whilst maintaining a balanced portfolio of plant and a mix of fuels. The EPS in the UK means the elimination of this middle stage of high efficiency coal-fired plant. As a result, no new coal-fired plant, other than separately funded CCS demonstration plant, will be built in the UK until CCS has been demonstrated on a commercial scale and proven to be commercially viable (with an appropriate CfD regime). No other country is following this approach. A huge amount of state-of-the-art, high efficiency coal-fired plant has recently been built, and is presently under construction, across the globe. This plant will be capable of being retro-fitted with CCS. All new fossil fuel plant in the UK will be gas-fired.

14. At the same time, CPS will make it very difficult to justify investment in modernising the existing fleet to meet the requirements of the IED and will drive generation from coal to gas on a large scale. It may be that the whole of the existing fleet will close by the early 2020’s. It follows that there will be very little coal-fired plant on the system in the early to mid 2020’s.

15. CoalPro is of the view that this will pose huge security of supply risks. By that time, much of the existing nuclear fleet will have closed and there may be very little new nuclear replacement plant. One can envisage a nightmare scenario at peak demand period on a cold, still, winter day—little or no wind, little or no coal, limited nuclear capacity. Dependence on gas may be 70% or more at the very time when gas demand for industrial, commercial and residential use is also at its highest. This is likely to result in extremely high and volatile electricity and gas prices.

16. It would be easy to scaremonger and say that the lights will go out. No doubt they can be kept on if, as a nation, we are prepared to pay to get the gas we need. But security of supply and price are merely two sides of the same coin. If the fuel poor (by then perhaps a significantly larger proportion of the population) are unable to afford to adequately heat their homes, or if gas and electricity prices force the closure, or relocation overseas, of businesses, then, to them, this has precisely the same effect as a supply interruption.

17. If there is doubt that such a scenario might apply, then one only has to look at events over recent months when gas was, and still is, unable to compete with coal. Coal is presently generating about 40% of the country’s electricity and at peak periods over last winter, this proportion exceeded 50%. CoalPro submits that it would be folly to lose the contribution of this uniquely flexible, abundant and affordable fuel, ideally suited to complement and back up the inevitably variable and intermittent nature of renewable generation, and still greater folly to replace it with gas. But that is where the proposed EPS, together with CPS, will lead.

18. This might be acceptable if it were to lead to a genuinely low-carbon electricity future. It will not. A new dash for unabated gas, permitted to continue to generate unabated until 2045, will lead to long-term carbon lock-in.

CONCLUSION

19. CoalPro strongly supports the Government’s objective of a secure, affordable, low-carbon electricity future. Most of the measures in the proposed Energy Bill will help this to be achieved, particularly the introduction of CfDs for low-carbon technologies and the development of a capacity market. However, the proposed EPS, together with the impact of a rising Carbon Price Floor, risks largely eliminating coal from the generation mix and incentivising a massive over-dependency on gas, particularly at peak periods and times of low availability of renewable generation. These measures will increase security of supply risks, result in high, perhaps extremely high, prices and lead to long-term carbon lock-in. They will achieve the exact opposite of what the Government intends.

June 2012

Written evidence submitted by Barrie Murray

1. OVERALL APPROACH

The current status of the proposals in the draft bill includes too much uncertainty and would not enable a potential investor to undertake an analysis of any development proposals. The degree of market intervention embodied within the EMR proposal represents a half way house between a fully competitive market and a centralised single buyer model. The Single Buyer model works very effectively in a number of countries with a central agency purchasing the energy and capacity requirements of all consumers and could work in the UK. Otherwise the mechanisms adopted need to be designed to work in parallel with normal market arrangements and be entirely transparent to facilitate independent new entry.

2. CLARIFICATIONS

Some of the issues that need to be clarified include:

— The capacity mechanism is described as optional and may or not be invoked. The basis for this decision is not defined.
— The question as to how the viability of peaking plant will be maintained given the reduction in its utilisation as a result of wind energy is not addressed.
3. Capacity Mechanism

A capacity mechanism will facilitate new entry by contract but this is likely to deter independent new entry. There will also be concern that market arrangements may change with successive governments. One option is to establish a premium to energy prices based on the prospective plant margin for the four years ahead with costs based on the value attributed to lost load. The mechanism would be self correcting and each market participant could establish their own assessment of likely future conditions. It would also mirror the normal market mechanism where scarcity drives up prices encouraging new entry. The capacity credits could be made technology specific to encourage the development of the optimum plant mix with payments linked to the annual loss of load probability and an assumed value of lost load. The target plant margin would be set to contain capacity shortfalls to typically eight hours a year based on expected plant availability.

4. Peaking Capacity

To establish a practical mixture of base load and peaking capacity the mechanism also needs to recognise that the peaking plant utilisation will be very low with energy displaced by wind energy. The capacity is still required to meet demand on days with little wind output. In a normal market the tight margin at the time of peak would drive up spot prices but this would not compensate for the loss of energy revenue. To reflect this, the energy price premium should be inversely linked to the plant utilisation. By this process base load generation would get a small premium as it would cover its fixed cost through a small increment to normal energy prices. Peaking plant would receive most payment with its premium designed to be higher to recover its fixed costs from fewer generated units. This reflects the normal market approach to determining bid prices to recover costs. It also needs to be recognised that part load operation and regulation have a significant impact on operating costs and this needs to be reflected in the premium. The energy premium would adjust in relation to the expected plant margin.

5. FIT/CfD

The FIT needs to be set to make investments viable taking account of the risks. A fundamental problem with wind generation is the predictability of the wind load factor that has a major impact on the revenues likely to be earned and will vary significantly between farm locations. The mechanism should encourage developments at the windiest sites first. Currently investors take a very conservative view of the prospective load factor using a 90% probability that the value will be exceeded. This risk could be managed by including a premium to energy prices inversely related to utilisation would go some way to meeting this requirement. It would also compensate mid merit plant that will also see a reduction in utilisation as wind capacity increases. The volume of base load generation like nuclear should be related to the annual capacity credit with costs based on the value attributed to lost load. The mechanism would be self correcting and each market participant could establish their own assessment of likely future conditions. It would also mirror the normal market mechanism where scarcity drives up prices encouraging new entry. The capacity credits could be made technology specific to encourage the development of the optimum plant mix with payments linked to the annual loss of load probability and an assumed value of lost load. The target plant margin would be set to contain capacity shortfalls to typically eight hours a year based on expected plant availability.

6. Optimal Plant Mix

There will be an optimum mixture of generation to meet the varying customer demand profile at minimum cost with a proportion of base load, mid merit and peaking plant. These will have different cost characteristics with base load tending to have high capital but low operating costs like nuclear and peaking plant having low capital costs but higher running costs reflecting its lower utilisation. The capacity contracting arrangement needs to be designed to foster the optimum mix. The Bill proposals recognise the need for peaking plant like open cycle gas turbines but do not provide a basis for it to be seen as a viable investment. The arrangement described in paragraph 4 with a premium to energy prices inversely related to utilisation would go some way to meeting this requirement. It would also compensate mid merit plant that will also see a reduction in utilisation as wind capacity increases. The volume of base load generation like nuclear should be related to the minimum demand level and technology specific contracting should recognise this. The overall capacity level would be contained by reducing premiums as capacity reaches the target level.

Very sophisticated generation expansion models have been established and used by state utilities for many years and National Grid, in its role as advisor to the government, should be encouraged to exploit this type of modelling.

7. Economic Assessment & Modelling Results

It is suggested that overall customer bills would in the long term be less than they would without the EMR proposals. This claim needs to be substantiated given that off-shore wind costs with subsidies around £150/MWh whereas combined cycle gas based on DECC fuel price projections and high CO2 prices of £70/t would only reach £80/MWh (less than £70/MWh with CO2 at £30/t). The suggestion that wholesale prices will be less as a result of low carbon generation with a low SRMC is suspect. Marginal prices are likely to be set by expensive peaking generation.
The financial modelling undertaken and reported is inadequate in not describing a range of scenarios and sensitivities with more detail of the process used to simulate the market operation. The modelling process needs to embrace a number of features to fully assess the impact of wind intermittency on system operation and conventional generation. In particular it should describe:

- The modelling approach to identifying the timing and type of generation new entry.
- A full chronological model using actual wind data output profiles in conjunction with a real half-hourly system demand profile to simulate system operation for a year and provide adequate granularity.
- The range of assumptions about how it is proposed to balance wind intermittency using a combination of peaking plant, pumped storage and demand side response.
- The future role of the increased capacity of interconnection and exchanges with Europe and Ireland.
- The approach to assessing the impact of the wind intermittency on the operating costs of conventional generation.
- The assumptions about demand side participation and embedded generation.

The details of the modelling approach need to be available to all potential participants to enable them to make their own judgements about future market conditions. This is essential to creating investor confidence and enabling other stakeholders to challenge assumptions.

June 2012

Written evidence submitted by Drax Power Ltd.

Executive Summary

The draft Energy Bill will implement DECC’s chosen EMR mechanisms. Those mechanisms aim to minimise additional costs to end consumers of providing affordable, sustainable and secure electricity supplies, whilst providing pragmatic solutions to investor concerns surrounding the securing of project finance for low carbon investments. For this reason, Drax supports the introduction of a broad market-based capacity mechanism and the introduction of Feed-in Tariffs with Contracts for Difference (CfD FITs) to replace the Renewables Obligation (RO). However we have a number of issues we believe need to be addressed in order to ensure that the aims of the EMR package are fully delivered:

CfD FITs

- “Bankability” of the CfD arrangements will require there to be a legally enforceable (ie. private law) contract between the scheme developer/generator and a central agency counter-party.
- The CfD contract should ultimately be backed by Government.
- If Government backing is not legally possible, then the counter-party should still be a public body with clear statutory duties and objectives together with a legally robust and enduring recourse to recover the monies required to make the CfD payments from electricity suppliers.
- Arrangements to ensure that CfD FIT payments meet DECC’s Levy Control Framework budget requirements must not undermine the position of existing CfD FIT contract holders.
- The credit/collateral arrangements for generators with a CfD FIT contract need to be minimised.
- The payment model for the recovery of the CfD monies from suppliers should be via a fixed annual levy, set perhaps 12 months in advance.
- Schemes supported under the Renewables Obligation should be granted a one-off, irreversible option to switch to a CfD FIT prior to 2017.
- The length of the CfD contracts should be a minimum of 15 years for all technologies (including CCS), with serious consideration given to 20 year contracts.
- The reference price for the CfDs for flexible plant like biomass should not be the annual forward price, and other more cost-effective options should be considered, including day ahead.
- Like CCS, biomass plant should have the option of having the CfD strike price indexed to its fuel costs.

Capacity Market

- The auctioning of capacity should begin as soon as practicable, and not when deemed to be necessary.
- CfD FIT supported schemes should be ineligible for capacity payments, whereas RO supported schemes should be eligible.
- There should be no differentiation between the treatment of existing and new plant.
Government needs to clarify the interactions between the capacity market and its recently announced Gas Strategy, as well as how the capacity market interacts with the wider EU Single energy market.

The value of capacity should be allowed to collapse if there is an over-supply.

The standard capacity product should be available over multiple tenures, for example, one year contracts may be appropriate for existing plant, five years for plant upgrades and ten years for new investment.

The auction should provide a standard capacity (MW) product, which would allow different types of user (such as Demand Side Response (DSR) and storage providers) to also take part.

**About Drax**

1. Drax is predominantly an independent power generation business responsible for meeting some 7–8% of the UK’s electricity demand. It also owns Haven Power, an electricity supplier serving the needs of business customers.

2. Drax is the owner and operator of the 4,000MW Drax Power Station in North Yorkshire, which is the largest, cleanest and most efficient coal-fired power station in the UK. It comprises six 660MW coal-fired generating units; the largest and most flexible in the country. This capability means that Drax is one of the most significant providers of flexible generation and system support services in the UK.

3. Drax is also highly active in the Balancing Mechanism (BM), providing National Grid with real-time balancing options (via BM Bids and Offers) throughout the year. In addition, the Black Start capability of the plant ensures further network resilience should the UK’s electricity supply be interrupted. It should also be noted that Drax currently has the capability of storing over two million tonnes of fuel on site. All of these factors highlight the significant, strategic role that Drax currently plays, and can continue to play, in ensuring the UK’s security of supply at least cost to consumers.

4. Drax is also committed to playing its part in reducing its carbon footprint and that of UK power generation. To this end, in summer 2010 the largest biomass co-firing facility in the world was commissioned at the power station. With the capability to produce 12.5% of the station’s output from sustainable biomass—equivalent to the output of over 700 2MW wind turbines—Drax is by some distance the largest renewable generating facility in the UK. In 2011, Drax produced around 8% of the UK’s renewable power, more than twice that of the next largest renewable facility.

5. Drax is pleased to have the opportunity to respond to the call for evidence on the draft EMR Energy Bill. As one of the most significant providers of system support services and a very significant investor in renewable electricity generation from biomass, Drax is well placed to comment.

**Contract for Difference Feed in Tariffs**

6. The CfD FIT contractual and institutional arrangements need to be “bankable” for low carbon investors/developers. We do not believe that the Government’s suggested “statutory contract” approach will achieve that.

7. At the very least “bankability” will require there to be a legally enforceable (ie private law) CfD FIT contract between the scheme developer and a central agency counter-party.

8. Clearly, the more secure and robust those contractual arrangements are, the lower the cost of capital, and hence costs to consumers. So, at best that contract should also ultimately be backed by Government, as originally announced by the (then) Secretary of State, and as most recently confirmed in the Regulatory Impact Assessment which was published with the draft Bill.

9. However, we recognise that it may not be legally possible for the contracts to be explicitly backed by Government (eg. if it was determined to be in contravention of EU State Aid rules). If that is the case, then the counter-party should, in our view, still be a public body with clear statutory duties and objectives together with a legally robust and enduring recourse to recover the monies required to make the CfD payments from electricity suppliers.

10. Any arrangements put in place to ensure that CfD FIT payments meet DECC’s Levy Control Framework budget requirements must not undermine the position of existing CfD FIT contract holders.

11. The credit/collateral arrangements for generators who have a CfD FIT contract, and who may have to pay money back to the central agency if the market price is higher than the strike price, need to be minimal. This would reflect a sensible and pragmatic assessment of the risk of non-payment, as well as ensuring that smaller, independent generators were not disadvantaged.

12. The payment model for the recovery of the CfD monies from suppliers should be designed so as to minimise costs to customers and not to disadvantage smaller and/or independent suppliers. In our view a fixed annual levy, set perhaps 12 months in advance, would best achieve those aims. We recognise that this might lead to some over or under recovery between periods which will need to be managed by National Grid. However, without certainty over the CfD charges, suppliers will price in risks to customers and this will raise
overall prices unnecessarily. On balance we believe that the costs of managing the under/over recovery will be less than the costs of suppliers managing the cost uncertainty. Having a charge fixed for 12 months would also smooth the impact of potentially variable and unpredictable CfD payments on customers’ bills.

13. Schemes supported under the RO should be granted a one-off, irreversible option to switch to a CfD FIT prior to 2017. Given that CfD FITs are recognised by Government as a cheaper alternative to the RO, customers would end up paying less for any scheme that exercised the option. Provided that any such switch could only occur at the start of an RO compliance period, and that at least 12 months’ notice was required, this would also have no detrimental effect on the on-going operation of the RO.

14. The length of the CfD contracts should reflect investment timescales and should therefore be a minimum of 15 years for all technologies (including CCS), with serious consideration given to 20 year contracts. This would likely reduce the cost of capital associated with such investments ultimately benefitting consumers.

15. On the CfD reference price, DECC has stated that for intermittent technologies (ie. wind) its preferred option is the day-ahead price; and for baseload plant (eg. Nuclear) it is the annual forward price. However, DECC has not specified what its preference is for plant which is neither baseload, nor intermittent. Such plant potentially includes biomass plant which is likely to be technically and practically capable of flexible, dispatchable operation. That is one of its key advantages over other low carbon technologies, in that it can support and complement the operation of wind and nuclear. The reference price for the CfDs for such flexible plant should not be the annual forward price. An annual reference price would introduce costly collateral requirements, reduce the capability of generators to “capture” the price index to secure their overall revenue stream, and raise liquidity concerns. As a result, other more cost-effective alternatives should be considered, including day ahead.

16. Biomass plant should also be given the option of having the CfD strike price (or at least a proportion of it) indexed to its fuel costs, as is proposed for the other main low carbon technology which has a significant fuel in put cost, CCS plant. This would lead to a lower CfD strike price than would otherwise be the case.

**Capacity Market**

17. If designed correctly, the proposed market-based capacity mechanism will maintain security of supply by delivering continued capacity adequacy, whilst simultaneously encouraging new investment in reliable electricity generation. The use of an auction to enable efficient price discovery will also encourage investment in the most cost effective technologies.

18. We welcome the Government’s recognition that the capacity auction should be possible as early as 2014. However, we believe there is merit in starting the process as soon as it is available rather than only doing so when Ofgem/Grid advise that it is necessary. Our approach would ensure:  
   — the chosen mechanism works as a concept;  
   — the associated IT systems and settlement processes have been adequately tested; and  
   — the mechanism is available to determine the value of capacity in line with investment timescales and demand requirements.

19. The interaction between the capacity mechanism and the CfD FIT arrangements should ensure that generators are not remunerated twice for the provision of capacity (ie via both arrangements). CfD FIT supported schemes should therefore be ineligible for capacity payments, whereas RO supported schemes should be eligible.

20. We can see no economic justification for the proposed differential treatment for existing/new plant in the capacity market. Such an approach will simply increase overall costs to customers by limiting competition for the procurement of capacity.

21. Government needs to be clear about how the interactions between the design of the Capacity Market and its recently announced Gas Strategy will be taken forward. In particular, the latter seems to be looking to address similar issues to the capacity market, but just for gas plant.

22. It will be important to ensure that the capacity market model does not distort the efficient operation of the GB wholesale power market. The Government also need to clarify how the GB capacity market interacts with the wider and developing EU Single energy market.

23. As the mechanism is to be market based, the value of capacity should be allowed to collapse if there is an over-supply. This ensures that consumers do not overpay for a commodity that is in abundant supply. In the event of an under-supply, investors will be incentivised to build the most efficient generation technologies in order to stay ahead of the competition in future auctions.

24. This should provide the most cost effective solution for end consumers over the long-term and reduce the risk of future political intervention. A lower risk of future political intervention may also bring additional advantages, such as a lower cost of capital for new generation investment.

25. When determining the procurement lead time for capacity, it is important to be mindful of the investment timescales surrounding the planning and construction of new plant. The average development lifecycle for new
plant is in the region of seven years. The chosen capacity mechanism must provide investment signals that reflect the time required to develop new plant.

26. It will also be crucial to ensure that the correct products are available for different types of investor. The auction should provide a standard capacity (MW) product, which would allow other types of user (such as Demand Side Response (DSR) and storage providers) to take part. The standard product should also be available over multiple tenures, for example, one year may be appropriate for existing plant, five years for plant upgrades and ten years for new investment.

INSTITUTIONAL AND TRANSITIONAL ARRANGEMENTS

27. Given that the System Operator will take on the role of the central delivery body, careful consideration should be given to the potential conflicts of interest between the System Operator’s existing and new obligations.

28. Not enough information is available yet to identify what these conflicts may be, but particular attention should be given to the potential for perverse outcomes or unintended consequences due to any indirect relationship between the new mechanisms and the existing SO duties and Price Control incentives.

A key challenge will be to minimise the consequential effects of introducing the new CfD and capacity arrangements on existing commercial contracts. In particular, consideration must be given to the potential for adverse effects on smaller independent suppliers, where the majority of customers are on fixed price contracts. Transitional arrangements are required to allow suppliers sufficient time to implement an appropriate mechanism for cost recovery.

June 2012

Written evidence submitted by Peter Jones OBE, Ecolateral Ltd

(I)Credentials

Thank you for the opportunity to contribute to the Committee’s deliberations. For the last 45 years I have operated in large private sector companies facing substantial challenges from change in terms of market demand, technology shift, legislative frameworks and economic structures. These comprise industrial gases, welding, materials handling, parcels and, latterly, waste and resources. In the case of the latter I have been instrumental in creating a locational strategy tool for waste to energy facilities, broadening a general understanding of the relevance of material flow mapping in the UK and (currently) facilitating strategic partnering between waste logistics companies, energy consumers, property companies and conversion technology providers in the “resource conversion” space. This work post-dates my membership of the Sustainable Consumption and Production Taskforce Steering Group examination of Waste to Decentralised Energy which Reported in February 2008 under the Chairmanship of Neil Carson, CEO Johnson Matthey Plc. With sponsorship of DEFRA and BERR.

(II) Executive Summary

We are at a crossroads where we need to confront the inadequacies of the past false dawn of energy market reform which has created a potentially socially divisive transfer payment subsidy driven policy framework. Worse the complexity of instruments has erected barriers to investment with dubious credibility in terms of scientific rigour. We must seize the opportunity to re-establish peer reviewed scientific assessment to enable market based instruments which drive engineering innovation in a high conversion efficiency, low carbon footprint energy infrastructure utilising common denominators of technical and economic measurement.

(III) The Broader Picture

(a) I suggest that there is a need to return to the basics in terms of quantifying the “energy” market around standardised denominators and measurement systems. Lack of transparency in achieving this has created fertile ground for multiplying numbers of ill thought through, inconsistent and incoherent policy and economic instruments often with no foundation in sound science. There is a chronic requirement to measure and quantify energy flows in common unit measurement systems (as Gj/BTUs or similar) instead of the current confusing framework of kilowatts (hours), gallons, therms, megawatts or tonnes. We are where we are because energy supply chains have remained in their respective “chimneys” of thought heavily influenced by historical, engineering influenced criteria.

In reality the UK currently consumes each year c 60 million tonnes of coal, (40 mToe) 70 million tonnes of LNG (93 m Toe) and has at its disposal around 60 million tonnes of carbon based waste (c24 mTOE) and estimated tonnages of farm and forestry residues exceeding 150 m tonnes of material. As a starting point we should have a critical review of whether those balances are both correct and effectively sourced.

(b) These future mix strategies need to be predicated on a common cost measurement basis (as Gj/BTUs etc) in terms of operating and capital costs per common unit across the different types of fossil and non fossil feedstock sourced technologies identified in the current DUKES reporting framework (coal, oil, dual-fire,
CCGT, nuclear, GT, hydro, wind, waste—as landfill, anaerobic digestion etc) Against these accumulated cost “inflows” (some reflecting mature, written down capital and others reflecting market entry levels) can be juxtaposed current revenue flows per standard unit for electricity, gas, petrol, diesel, biomass exclusive of tax as duty or VAT. Finally the construct should identify Government “transfer costs” as taxes and duty per standard unit of measurement. Failure to model this overall framework has led to a rash of financial instruments which have been applied on a technology specific basis to skew supply and demand in ways that have little to do with the original intentions of the Climate Change Act and without foundation in sound science with regard to CO\textsubscript{2} emissions reduction potential. I summarise this approach as akin to “Old McDonald’s Farm” (Here a ROC, there a ROC, everywhere a ROC, ROC) The Contract for Difference regime simply risks taking us back to the NFFO auction process of the 1990’s.

(c) On the assumption of 20% renewables being met by 30% share of electricity supply from renewables the evaluation of recent DUKES data on supply and ROC prices suggests a potential green levy of the order of £8 to £11 billion by 2020. Of course the OPEX and CAPEX cost per Mw of capacity remains shrouded in mystery when seeking to compare nominal as opposed to on line capacity. This figure pushes into insignificance the debate on pasty taxes or charity clawbacks.

(d) Worse still the investment needed to achieve the shift to “renewables” is assumed to be best supported by a subsidy based system of inducements via ROCS and FITs which is funded by transfer payments from the financially poorer sections of society consuming energy (especially as electricity) and transferred to largely middle class price support for energy saving infrastructure. I posit that this is a wholly questionable social as well as economic strategy which carries substantial political risk once the electorate realise how contradictory and perverse the pricing and taxation framework has become. In large part I believe this to be attributable to the lack of a common denominator or an across the board measurement system. Subsidy based systems achieve the exact opposite—they offer investors no long term security of return, especially when Government arbitrarily withdraws the subsidy as a consequence of getting the sums wrong (as with solar).

(e) In the waste sector we are exporting energy (in the form of RDF to the Low Countries and Denmark) because their waste to energy plants have been denuded of feedstock by Germany suffering a supply shortfall due to their nuclear switch-off post Fukushima. International valuations of feedstocks which can be exported as recyclate or energy fuels cannot be embraced in a nationally based subsidy driven mentality.

(f) Consumer education and action (with regard to the installation of new renewables generating equipment, tariffs, energy using equipment) and understanding would come from greater transparency were such common unit pricing systems to be adopted. A start has been made in the electricity and gas billing arrangements but this needs to be top down in the entire statistical reporting framework. In the absence of such initiatives consumers have become at best confused and at worst cynical. Lacking a common comparator they are confronted with tariff frameworks more akin to a medieval Kasbah than a modern low carbon economy.

(iv) Solutions

(a) Instead of the current (aka Osborne) spaghetti of subsidy based instruments the entire structure of renewable energy instruments needs to be replaced by two simple instruments which will provide clarity to financiers, operators, domestic users, half hourly interruptible businesses, NGOs, the public and the international community. Namely....

(i) An input financial (per gigajoule or Btu) single standard levy applied to all energy inputs (as oil, petrol, coal, gas, biomass, RDF, Fuel or any other feedstock ) assessed on the basis of sound science and caloric value appraisal.

(ii) An output tax on CO\textsubscript{2} emissions applied to all energy producing conversion equipment (as heat, cooling, electricity, gas, transport, hydrogen or other fuel gases) regardless of whether the input feedstock is fossil or “short cycle” carbon.

(b) Establish a single Ministry of Carbon and cut through the conflicting priorities of DECC, DEFRA, DCLG, BIS in the energy portfolio.

(c) Review innovative priorities for energy storage alongside distributed energy connectivity issues in relation to grid balancing—in particular in relation to pumped storage on existing water company assets (regulated by OFWAT), the siting of anaerobic digestion plants alongside lock systems to provide waste based renewable pumping capacity when managing water movement via the canal network and a re-evaluation of hydrogen as a fuel store of electricity, gas and transport fuel.

(d) Recognise that by transferring all sewerage undertakings from the water to the waste Regulatory regime via an Auction of the assets some £2 billion windfall taxes could be produced and sites for Resource recovery Parks be available via streamlined Planning processes.

(e) In operating a Nationally based subsidy driven strategy the UK sits outside the UN FCC framework underpinned by the concept of tradeable permits of Assigned Amount Units (AAUs). We need to dump subsidies and rejoin the Clean Development Mechanism to permit the UK Government and Internationally...
scaled Global Brand private sector companies to trade their UK emissions reductions within the Audit framework of the CDM. Taxation (or its doppelganger as subsidies)—will never work as efficiently as a cap and trade system operated via certified, scientifically evaluated Trading platforms. Whilst not absolutely proven it is highly likely that instead of operating a hidden tax based system the UK might derive income and balance of trade benefits by entering the CDM as originally envisaged.

(v) Conclusion

We are at a crossroads. Past economic approaches to energy market reform based around a subsidy mentality have proved confusing, socially regressive, a deterrent to investment and lacking any scientific rationality. Whilst there are clearly political issues and risks they are manageable compared to the opportunities for investment, jobs, innovation and social equity offered by a shift to market determined renewable energy technologies based on sound scientific assessment of their fuel conversion efficiency backed by the prospect of access to traded carbon credits within a Clean Development Mechanism accreditation framework. The proposals set out in the Bill with regard to Emissions Performance Standards and CFDs are a fudge at a time when far more intellectual rigour is called for to safeguard the interests of future generations.

June 2012

Written evidence submitted by the Institute for Public Policy Research (IPPR)

Summary

— IPPR is concerned that the Energy Bill reduces the Government’s ambition on carbon emissions reduction by the power sector. To address this, we believe the Government should set out explicitly on the face of the bill that unabated gas will only be permitted to run at low load factors beyond 2030.

— IPPR is concerned that the proposed CFD arrangements are complex, could undermine investment levels in new generation and could worsen competition in the energy supply market.

— A new Impact Assessment is urgently needed to assess whether the newly proposed contracting arrangements remains the most cost effective revenue support mechanism. The Government should fundamentally rethink the administration of the CFD mechanism and challenge the European Commission if their rules prevent a less bureaucratic of proposals for British industry. If the Government does continue with the CFD mechanism as proposed, absolute transparency must be provided on the agreed strike price and the interim “letters for comfort”.

— The Energy Bill misses an opportunity to improve Britain’s unilateral Carbon Price Floor. It should also do more to improve energy efficiency for homes and businesses.

Principles

1. IPPR’s submission examining the Energy Bill is based on three principles. First, the carbon budgets set out in the Climate Change Act 2008 are sacrosanct. The Act requires the UK to achieve a reduction in greenhouse gas (GHG) emissions of at least 80% by 2050 and 34% by 2020, based on a 1990 baseline. Achieving these commitments should be done at the lowest cost to consumers while ensuring security of supply.

2. Second, in delivering its goals, the Government should be neutral towards low carbon technologies and ensure that different technologies have the opportunity to flourish. But Britain should be mindful of where its present and future comparative advantages lie and look to benefit from growing global markets in clean technologies. Recent research from Pew (2012) shows that the market for clean energy has expanded 600% since 2004.

3. Third, it is vital that Government provides long term certainty to investors and industry, which is insulated from the political cycle. The Government has laid out a very ambitious timetable for the Bill yet there are still many details to be finalised. Given the long-term significance, it is vital that the process is not rushed. EDF’s decision to explore the possibility of extending the lifetime of its existing plants with the Office for Nuclear Regulation could result in less urgency for bringing forward new generation. The Government should factor this in to its timetable.

Meeting the Carbon Budgets

4. The level of ambition in the bill does not appear to be commensurate with the advice laid out by the Committee on Climate Change (CCC) for achieving the carbon budgets. The CCC has stated that meeting the 2050 emissions reduction target “will only be achievable if electricity generation is almost completely decarbonised by 2030” (CCC 2008: 197). More specifically, the CCC have stated that “the carbon intensity of power will need to fall from around 500g/kWh today to 50g/kWh in 2030” (CCC 2010: 293). Worryingly, the Energy Bill includes a change of tone and timeline. It states that “power sector emissions need to be largely
decarbonised by the 2030s” (HM Government 2012: 10). The impact assessment for the Emissions Performance Standard, meanwhile, outlines that carbon emissions intensity from the power sector will effectively be double in 2030 at 100gCo2/kWh (DECC 2012a: 12). We are particularly concerned that the grandfathering clause in the Emissions Performance Standard does not include sufficient safeguards to ensure UK emissions will not exceed the carbon budgets.

5. The bill should be explicitly tied to the carbon budgets by setting a target to reduce the carbon intensity of the grid to 50gCo2/kWh by 2030. This is the most important step the Government can take to provide certainty to industry about the direction for the energy market. This would mean placing a legal requirement on government to demonstrate at specific intervals, for example every five years, that the implemented revenue support mechanism would result in a scale and mix of new generation that is consistent with a pathway to 50gCo2/kWh carbon intensity in 2030. The CCC should play an integral role supporting the government to determine potential decarbonisation pathways, based on criteria such as cost-effectiveness and risk, and evaluating the government’s eventual decisions.

EMISSIONS PERFORMANCE STANDARD WITH GRANDFATHERING

6. As set out above, meeting the carbon budgets in line with the CCC’s recommendations requires an “almost completely decarbonised” power sector by 2030. The Government has stated that it wants to introduce emissions performance standard (EPS) grandfathering for new power stations at 450gCo2/kWh until 2045. The effect of this policy will be to allow new gas plants to operate unabated throughout this period. The only way IPPR can conceive that unabated gas could play a role beyond 2030 is if it is to run at very low load factors and provide capacity only at times of low renewable generation or peaking demand.

7. The emission level and grandfathering rights in the EPS must be set on a pathway which is consistent with the near decarbonisation of power generation by 2030 rather than the far vaguer “by the 2030s”. The Government should set out explicitly on the face of the bill that unabated gas will only be permitted to run at low load factors beyond 2030. The government should provide revenue support through the proposed capacity mechanism to ensure that investors in gas plants get sufficient and predictable returns.

8. If the government proceeds with EPS grandfathering to 2045 as proposed then it must retain the power to change the emissions level and time period without recourse to primary legislation.

FEED IN TARIFFS WITH CONTRACTS FOR DIFFERENCE

9. IPPR believes that a well designed Feed in Tariffs with Contracts for Difference (CFD) mechanism could be a viable option for bringing forward investment in a range of low carbon generation technologies. The problem with the Government’s proposal is that the design is flawed. The proposed arrangements are complex, could undermine investment levels in new generation, and could worsen competition in the energy supply market.

10. The July 2011 Electricity Market Reform Impact Assessment implied that the Government would be the contracting or counter party and that all price risk would be “borne by Government balance sheets” (DECC 2011:9). Contrary to these earlier proposals, Annex B to the May 2012 “EMR Overview Document” specifies that the CFD mechanism will not involve a single counterparty, such as the Government, and will instead place “obligations on suppliers and generators” (DECC 2012b).

11. Evidence given by Right Honourable Charles Hendry MP to the Energy and Climate Change Select Committee on Tuesday 15 May when questioned as part of the “Building new nuclear: the challenges ahead” inquiry, appeared to suggest the new approach had been adopted in order to conform with EU State Aid rules. Specifically he said:

“We have put forward the proposal that we think is most likely to deliver the investment and also be comfortable with European State Aid rules … What we need to be clear of is the system that we put in place is one that will satisfy the European Commission. We believe that the approach we are taking is most likely to be acceptable under the rules on State Aid.”

12. This change in contractual liabilities is a major alteration to the design of the CFD. As a result the impact assessment on which the government based its decision in favour of the CFD is now outdated. A new impact assessment must urgently be carried out to examine whether the CFD remains more cost effective than the premium feed-in tariffs (PFIT) in light of the newly proposed arrangements. There are reasons to believe the proposed change will be detrimental to the government’s ambitions.

13. The new approach is likely to add huge complexity to the CFD system. It is vital that the arrangements are simple and robust if they are to provide confidence to industry and do as intended by reducing financing costs for new low-carbon generation. Industry is understandably concerned.

14. The proposed arrangements will also place greater pressure on the balance sheets of the major utilities, which will restrict the level of investments in new generation capacity they are able to make.

61 http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenergy/uc117-1/uc11701.htm
15. The arrangements may also be detrimental to the competitive operation of the supply market. The level of exposure that smaller suppliers are likely to face could result in a negative impact on their credit rating and is likely to raise the cost of capital. Without a strong balance sheet to stand behind, smaller operators may find the survival of their business at stake.

16. This would run contrary to the action that Ofgem is taking to improve competition, remove barriers for smaller suppliers, and encourage new entry to the supply market. These concerns are similar to those set out in IPPR’s report “The True Cost of Energy” (Platt 2012), which concluded that measures to remove barriers for smaller suppliers and new entrants to the market were needed.

17. The Government should fundamentally rethink the administration of the CFD mechanism and challenge the European Commission if their rules prevent a less bureaucratic of proposals for British industry. The CFD mechanism should not be specified in the title of the bill to ensure parliament is able to engage in full and proper debate on alternative options, including a system of PFiT, by parliament.

18. If the Government does continue with the CFD mechanism as proposed, absolute transparency must be provided on the agreed strike price and the interim “letters for comfort”. It is important that these arrangements retain the principle of technology neutrality and ensure that intermittent sources are not unduly penalised. Government must be wary that its policy regime is not skewed by the desire to achieve 18GW of new nuclear generation despite recent events which have left the possibility of a single supplier.

**Carbon Price Floor**

1. The Carbon Price Floor (CPF) has already been enacted but the Energy Bill presents an opportunity to amend this flawed scheme. IPPR’s report “Hot Air” (Maxwell 2011) details how unilaterally introducing a CPF in Britain will undermine the economic efficiency of the EU Emissions Trading Scheme and could waste up to £1 billion. Because the market is EU-wide, a higher price in the UK due to the CPF will lead to a lower price elsewhere and to the same amount of carbon being emitted.

2. The Government’s own data shows that the CPF will push up to 60,000 more UK households into fuel poverty as energy companies pass on the additional costs of paying the tax to consumers. By 2020, the number of households in fuel poverty is likely to be rising by 50,000–90,000 per year as a result of the CPF.

3. IPPR’s report “Europe’s Next Economy” (Straw et al 2012) outlines how a superior approach to meet low-carbon industry concerns for a higher and less volatile carbon price, without disadvantaging British business, can be delivered through the creation of a European central carbon bank to regulate the price of carbon in a symmetrical fashion. If prices were seen as too low to achieve EU-wide emissions reduction targets, the carbon bank could hold back allowances. By contrast, it could issue allowances if prices rose too high.

**Energy Efficiency**

4. As well as missing the boat on improving the carbon price floor, the Energy Bill contains no new measures on energy efficiency. This should be a central aspect of any decarbonisation policy, with emissions from buildings accounting for over a third of UK carbon emissions. Improved energy efficiency and increased deployment of renewable heat will be vital for the UK to meet its legally binding commitments for 2020 and 2050 as well as improving security of supply and the affordability of energy bills.

5. There are concerns about whether the government’s Green Deal initiative and the Energy Company Obligation (ECO), which replaces two energy efficiency policies—the Carbon Emissions Reduction Target (CERT) and Community Energy Savings Programme (CESP)—and the Warm Front fuel poverty programme, will be sufficient to meet statutory carbon and fuel poverty targets. If the Government is to achieve its policy goals, it is likely that the Green Deal and ECO will need to be enhanced by additional schemes.

6. Notwithstanding IPPR’s concerns, if the CPF is introduced in 2013, it will generate significant additional revenues. HM Treasury estimates that it will generate £740 million in 2013–14, £1.07 billion in 2014–15 and £1.41 billion by 2014–16. Phase III of the EU ETS will all increase revenues from £700 million this year to over £2 billion. These new revenues should be used for additional spending on energy efficiency, prioritising the homes of the fuel poor and vulnerable.

7. A targeted Green Deal should also be introduced for manufacturers. At present, there are few positive incentives for conventional manufacturers to reduce process emissions and retrofit their plants and premises. Those that have done so tend to be large multinational firms with strong balance sheets and the ability to raise capital. The secretary of state, Ed Davey, has expressed a desire to expand the green deal to businesses but few details are currently available. He should do so initially by targeting small and medium-sized manufacturing businesses with the highest energy costs relative to total costs, with a view to rolling out the scheme on a wider basis if it is successful. In addition, 100% capital allowances for two years should be made available

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62 Since the upfront costs of any green deal measure would be paid by the finance sector and paid back by the recipient over time through the savings on their energy bills, the scheme would not require public funding. However, the government may wish to introduce limited, time-bound incentives to encourage take-up. One option would be to set aside funds for early adopter incentives, perhaps offered in the form of a temporary cut to business rates for firms that sign up during an initial introductory period. This approach would mirror proposals for the current green deal scheme for homeowners, for which the Treasury has set aside £200 million for early-adopter incentives.
to manufacturers looking to invest in a broader array of clean-energy-supply technologies and more energy-efficient production equipment and processes. The additional costs could be funded by a small allocation of ETS revenues.  

June 2012

REFERENCES


Written evidence submitted by Energy UK

1. Energy UK has been formed by merging the Association of Electricity Producers, the Energy Retail Association and the UK Business Council for Sustainable Energy. With over 70 members we cover the broad spectrum of the energy industry and include companies of all sizes working in electricity generation, energy networks and gas and electricity supply, as well as a number of businesses that provide equipment and services to the industry. Our members generate more than 90% of UK electricity, supply up to 26 million homes and last year invested £11 billion into the economy.

2. Energy is the lifeblood of modern society. In the UK a massive increase in investment is required in the next decade and beyond:
   — to replace ageing plant;
   — to provide the UK with security of energy supply;
   — to move towards a low carbon economy; and
   — to bring long term affordable energy to consumers.

3. For these imperatives to be achieved, Energy UK seeks to work closely with government, regulators and our members at all times. In this context we believe that the draft Energy Bill is a critical step on the road towards a low carbon, secure and affordable energy future for the UK, which in turn will be a driver for economic growth, a creator of jobs and of opportunities.

4. We welcome the opportunity to respond to the ECC’s Select Committee Inquiry and call for evidence on the draft Energy Bill. Alongside the bill, DECC has also published a series of policy updates in the form of annexes aimed at providing clarity on the electricity market reform proposals being considered and implemented through legislation. The draft Energy Bill is complex and we are still assessing it and the
accompanying policy documents before coming to a final view on all of the specific issues. For the purposes of this evidence we have therefore set out general points and issues for which further clarity is needed.

5. We have engaged with the Electricity Market Reform (EMR) policy development from its outset and early in the process identified eight guiding principles by which EMR proposals should be judged:

- Consistent with EU ETS and compatible with EU law.
- Durable and long-term framework.
- Practical and implementable within timescales required for investment.
- Reduces political and regulatory risk.
- Avoids undue complexity.
- Compatible with open, dynamic and competitive wholesale and retail markets, supportive of new-entry.
- Safeguards against impacts on committed future investment.
- Reasonable cost to customers.

**Summary**

- Energy UK welcomes the publication the draft Energy Bill legislating for the reform of the electricity market. It is crucial for investor confidence that momentum for reform is maintained and timely progress is made to develop the details of the policy that the framework legislation aims to implement.
- Central to attracting much needed investment in low carbon generation to the UK is the introduction of a stable, robust and durable support mechanism.
- Members generally are supportive of the CfD mechanism and welcome the progress that has been made. Important details remain to be resolved in order to provide the essential and appropriate level certainty through primary legislation. Therefore, there are some companies that believe the legislation should be flexible to enable an alternative premium feed in tariff mechanisms to be considered in the future should this be appropriate.
- A clear, fair and transparent process for agreeing support levels and allocation of CfDs must be developed taking into account the Levy Control Framework (LCF).
- It is essential that a robust and enduring payment model for securing the CfD revenue stream be in place which enables market participants to manage any risks economically and efficiently. The issue of ensuring that there is a robust counterparty to the contracts remains critical.
- It is also crucial to ensure a smooth transition from the existing RO regime to the new CfD mechanism so as to avoid an investment hiatus.
- Members recognise that the Government is proposing to develop concepts for a “capacity market”. In so doing it will be necessary to consider the range of issues that stem from the different structures and business models of those who will be affected by this development. We will be providing further thought on the capacity market proposition through a paper that highlights the key matters and options that need to be taken into account.
- Companies support the approach taken by the Government towards the EPS. In particular, the commitment to grandfathering the EPS level of 450g/kWh (set as an annual limit) and to enshrining this principle in primary legislation. This is an essential aspect of securing investor confidence.
- It is vital to understand and manage the impact that reform of the electricity market will have on consumers. The impact assessment should be updated to reflect policy proposals as they stand. Government and industry should undertake a consumer engagement campaign to explain the energy story, provide transparency on the costs and benefits of moving to a low carbon economy, and help individuals, businesses and communities understand the role that they could play, particularly in terms of energy efficiency and distributed generation. Energy UK would be keen to inform such work.

**Energy UK’s Response**

**Timescales**

6. We welcome the publication of the draft Energy Bill legislating for the reform of the electricity market and see this to be a pivotal step. The Government has also set out a detailed delivery timetable and, given the need to avoid any investment hiatus, it is crucial that they meet this. It follows that reforms should be implemented within the expected legislative timetable with the Bill being introduced early this autumn and completing its passage through Parliament during within the session, with a view to achieving Royal Assent as early as possible in 2013.

7. Considerable work is still needed to develop the various elements of the package especially the design of the Contracts for Difference (CfDs) and the Capacity Market and the Institutional Arrangements Framework.
It is therefore crucial that timely progress is made to develop the details of the policy that the framework legislation is designed to enable.

8. The overall aim must be to improve long-term confidence for investors. Investors need early clarity on the proposals underpinned by the primary legislation. The terms of the primary legislation must be clear so as to give proper effect to the proposals without unintended consequences. There is much work still to be done and we must see a step up in the progress being made. Any slippage on the current delivery timetable would undermine confidence, and impact on the delivery of low carbon energy, not to mention supply chains and potential jobs.

9. The draft Bill gives extensive enduring powers to the Secretary of State to change, amend or modify the elements of the EMR package, which contrary to the intent, could introduce significant political and regulatory risk and uncertainty for investors. In similar past circumstances, for example the introduction of the New Electricity Trading Arrangements, Government directed that a scheme be introduced, raised the required licence and code changes and then left the market to deliver. This is not the case in the draft Energy Bill, which will allow future energy market interventions by the Secretary of State, on an enduring basis. Any such interventions should be governed by clear criteria and objectives. Discretionary powers might be subject to appropriate time limitation provisions or indeed limited to use on a single occasion. If interventions take place then the process should be transparent with full consultation of affected parties, and any changes implemented on sensible timescales with transition periods to avoid cliff edge.

10. Companies have also highlighted the need for consistency of timing on the EMR proposals and Ofgem’s work on market liquidity and cash-out reform. There needs to be greater recognition of the interdependencies between these areas of work by the Government and the Regulator. Energy UK is working to develop a paper outlining key interactions and interdependencies within the EMR package and with broader energy policy goals including the work of the regulator.

Contracts for Difference (CfD)

11. Energy UK members welcome the Government’s commitment to supporting low carbon technologies. Central to attracting much needed investment in low carbon generation to the UK is the introduction of a stable, robust and durable support mechanism. Members generally are supportive of the CfD mechanism and welcome the progress that has been made. Important details remain to be resolved in order to provide the essential and appropriate mix of certainty through primary legislation, therefore there are some companies that believe the legislation be flexible to enable an alternative premium feed in tariff mechanisms to be considered in the future should this be appropriate.

12. Companies agree that Government must develop a clear, fair and transparent process for support levels and allocation of CfDs. Companies recognise the need to limit the total cost to customers of the proposed measures, provided that the level of investment is consistent with delivering the UK Government’s legal obligations to meet the 2020 renewable target and to comply with its carbon budgets.

13. Whilst we recognise the importance of an overall levy control framework, this must be carefully designed and implemented to maintain investor confidence. The HMT Levy Control Framework (LCF) has the effect of limiting expenditure under the CfD and potentially the capacity market regimes over the spending review period. This creates significant risk that projects which have been developed at considerable cost will either not be awarded a CfD or will be subject to a lower than expected strike price, once they have reached the point of a final investment decision. An important requirement here is to devise a system in which companies developing projects in response to the CfD framework and the available strike price can be confident that their project will be rewarded as expected when they get to the point of making a final investment decision.

14. In designing a system that might address this, companies (at this stage in their thinking) would highlight three main areas:
   — A levy control framework over a longer period than the Spending Review could provide more certainty.
   — In calculating the cost of a CfD for levy control purposes, it may be helpful to use a notional rather than an actual wholesale price.
   — Having specific volume caps for each technology looks particularly difficult as an option.

15. Through the levy control framework, the Government will need to find an appropriate balance between supporting energy investment in the UK and limiting costs to consumers. It is essential that the EMR Delivery Plan and design of mechanisms are consistent with meeting allowed budgets under the control framework, without negatively impacting investor confidence. Energy UK is committed to working with Government on how this can be achieved.

Payment model

16. To make the CfD viable there is strong agreement amongst companies that a robust and enduring mechanism for securing the CfD revenue stream must be in place. It should not adversely impact on the balance sheet or credit rating of any participants or transfer undue risk to suppliers and their customers. It must provide
confidence to banks and other sources of finance resulting in a lower cost of capital for low carbon projects thereby offering best value for money for consumers.

17. It is essential that the arrangements enable market participants to manage any risks economically and efficiently. When CfDs were first proposed there was a shared expectation that they would be backed by the Government63 however this proposal has now been withdrawn. The issue of ensuring that there is a robust counterparty to the contracts remains crucial. The Government needs to urgently update the analysis in its impact assessment to ensure that there is robust evidence based policy making.

18. We have been working with the Government to understand how the current payment model proposal would work in practice and give investors the assurance they need. Companies are concerned that the proposal outlined in the draft Operational Framework and draft Energy Bill lacks clear legal precedent and there are significant concerns that it might not be enforceable.

19. In particular, as DECC itself notes in the draft Operational Framework, the multi-party nature of the current payment model means that dispute resolution procedures may not be as straightforward as in the case of ordinary bilateral contracts where the number of parties are limited. We therefore welcome the Government’s recognition of industry’s strong concerns and support the opportunity to engage further on the detailed design work through pre-legislative scrutiny.

20. In addition, we also welcome that the Government is in parallel considering an alternative payment model which would include a single counterparty under a bilateral contract. It is important to fully consider the range of possible options. Under a bilateral contract model the question of the identity and robustness of the counterparty to the contracts remains crucial. The Government needs to urgently update the analysis in its recognition of industry’s strong concerns and support the opportunity to engage further on the detailed design work through pre-legislative scrutiny.

21. In short, further details on both of the models being considered are needed to facilitate a full and effective assessment. However, we would like to emphasise that there are important issues that need resolving for any payment model to be workable including:

(a) Cost recovery:—Investors will need assurance that both contract terms and cost recovery mechanisms will be maintained in the long-term. The Government must legislate for the entitlement of the cost recovery process. Legislation should explicitly allow for suppliers to collect revenue from consumers to pay generators under the CfDs (and vice versa).

(b) Dispute resolution:—As stated above it is important to note that it is critical for investors to have a clear understanding of the dispute resolution process under the CfD.

(c) Change of law:—Investors will need to understand what provisions there are to protect against future changes in law and/or material tax changes. Change in law provisions will be critical in enabling parties to manage risks. The terms of the contract that enable and help parties to manage a change in circumstances (eg effective market indexation for the reference price) will also need to be developed.

(d) Strike price:—A robust and transparent process for setting the strike prices under the CfD will be essential. Strike prices will vary for different technologies and companies. Companies support the proposals in the draft Energy Bill to include provision to set strike prices for the CfDs through an administrative process initially. Potentially, at a later stage, moving to a competitive process. Under the administrative process, early visibility on strike prices will be critical for investment, so the Government must stick to its timetable of early notice of draft rates by mid-2013 and final rates by late 2013.

(e) Allocations/penalties:—There needs to be a clear and transparent framework under which the CfD allocation process runs. Whilst we fully recognise the need for fiscal constraints on the overall level of support for low carbon generation, we wish to note that the concepts of allocation rounds (with implicit volume caps) and development penalties cause significant concern. Developers incur significant costs in taking a project to financial close, so the risk of not then being allocated a CfD due to over-subscription will increase risks and associated costs for developers. Likewise, the introduction of penalties for late commissioning will add further risk to the process for developers without any apparent benefit for overall fiscal management.

(f) Accountancy treatment:—We are concerned about the impact of the accounting treatment of the CfD on both generators and suppliers. Should the contracts be classified as a financial instrument then the accounting treatment will create a significant burden on balance sheets. Industry, accountants and DECC need to have a common view on the accounting treatment of the CfD and capacity mechanism on suppliers and generators. Energy UK can assist Government in convening appropriate experts to understand accountancy treatment. DECC might also consider establishing an expert group which considers the implications of proposals on suppliers.

22. The issues outlined above will need to be fully addressed to make the CfD mechanism viable and help deliver investment. Investors need to understand, and be satisfied with, provisions dealing with these. Energy
UK will continue to engage with Government on this, we are developing a paper exploring the payment model options and how to address the above issues.

**Investment instruments**

23. Companies generally welcome the intention to provide support to investors making early investment decisions, in order to prevent a hiatus. However, with the opportunity to introduce investment instruments before the full detail of the CfD is in legislation, we would like to emphasise the importance of this being a fully transparent process. The Final Investment Decision (FID) enabling process will set the precedent for future CfDs, so there must be sufficient visibility of the process and outcomes, including for developers of future projects.

**Capacity Mechanism**

24. Companies recognise that the Government is proposing to develop the concepts for a “capacity market”. Although companies do not have a single view on the need for or timing of such a mechanism, because of the diverse business models which they operate, they are committed to helping to develop an effective model through Energy UK.

25. Companies understand that the draft Energy Bill scopes out the capacity market design in general terms, leaving much of the technical detail to secondary legislation provisions. We understand this provides sufficient flexibility to develop the design as work progresses through engagement with industry experts and stakeholders. That said, early clarity on scheme design and timely decision-making on its introduction are needed to facilitate cost-effective, optimal investment decisions in terms of both existing and new plant. It is important to avoid undue complexity in scheme design so as to ensure consistency with the existing market (including features such as forward trading).

26. It is also important to fully explore the opportunities for the involvement of Demand Side Response (DSR) and electricity storage in the Capacity Mechanism, recognising the potential environmental benefits and also any limitations, especially on duration of its availability and the challenges in establishing a counterfactual.

27. We will be providing further thought on the capacity market proposition through a paper that highlights the key matters and options that need to be taken into account.

**Conflicts of interest**

28. We welcome the Government’s recognition of the need to consider potential or perceived conflicts of interest between the delivery of the EMR functions by the System Operator and National Grid’s other businesses. We are engaging with DECC via the EMR Expert Groups to improve our understanding on emerging developments in this respect and consider possible mitigating actions as appropriate.

**Renewable Obligation: Transitional Arrangements**

29. Concerns have been raised that any surprise outcomes on DECC’s Banding Review proposals for wind, or indeed further delay in the confirmation of the new rates, would be very damaging for investor confidence in wider Government energy policy.

30. It is crucial to ensure a smooth transition from the existing RO regime to the new CfD mechanism so as to avoid an investment hiatus. We therefore support the Government’s commitment to the use of grace periods for the planned closure of the RO. It is essential that this is designed properly to allow for flexibility on delivery issues such as grid connections and radar installations which are outside a developer’s control. It has been suggested by some that at least 18 months would be appropriate to deliver the necessary flexibility.

31. Companies agree that an appropriate mechanism for reducing uncertainty is to provide an early notice of a clear transition process. Some companies are concerned about the potential for delay to the current anticipated timetable for the introduction of CfDs. Should this occur, then RO would need to be extended to reduce the risk of a hiatus in renewable investment, which if it happened would in turn have an adverse consequence in respect of meeting the EU 2020 renewable target.

32. Companies would like to convey their support for the Government’s intent in the Bill to provide confidence regarding future RO incomes in the final years of the scheme. In particular, the proposals enabling the fixing of the price of RO certificates (ROCs) issued between 2027 and 2037. However, it is felt that to provide the certainty required for continued investment under the RO, Government should confirm the formula that will be used to calculate the fixed ROC value. The EMR Technical Update provided this, confirming details of how headroom and the buyout price would be set. However the draft legislation does not convey this, with there being wide reaching powers that do not describe the process set out in the Technical Update and give the Secretary of State power to modify ROC values at any future date.
Emissions Performance Standard (EPS)

33. Companies support the approach taken by the Government towards the EPS as set out in the EPS policy update Annex. In particular, the commitment to grandfathering the EPS level of 450g/kWh (set as an annual limit) is very important in terms of providing the necessary investor certainty for new build CCGTs. The commitment to enshrining this principle of the EPS proposals in primary legislation is also welcome as an essential aspect of securing investor confidence. The running hours of gas plant will be constrained by the level of the carbon price in the 2030’s and beyond, so the new gas plant required to ensure security of supply in the next decade is unlikely to be generating unabated at high load factors post 2030. It will be important to review the draft Bill provisions to ensure that they give full effect to the Government’s intent.

Costs to consumers

34. It is vital to understand and manage the impact that reform of the electricity market and the implementation of other Energy Policy such as smart meter roll out will have on consumers. As part of this, steps to update the impact assessment of the policies must be taken as the process of finalising policy details continues.

35. As we make progress in decarbonising the electricity sector, government should be transparent about the costs and benefits of energy policy in order to gain the trust and buy-in of consumers. It will also be important to ensure that there is support available to the vulnerable in society. Energy UK has will continue to work with government to identify and implement ways to tell the energy story to consumers and will continue to work with the relevant departments and consumer groups to devise effective ways to engage with consumers.

Enhancing Ofgem’s regulatory accountability—the requirement for merits-based appeals

36. A stable and predictable regulatory regime is vital to investor confidence and the competitiveness in the UK energy sector, bringing benefits to consumers. Part of this is ensuring that the regulator’s enforcement decisions are subject to an appropriate level of independent scrutiny.

37. The Energy Bill will add to the large number of obligations given to energy companies. In many cases, Ofgem acts as enforcer of these obligations; it is able to impose sanctions for what it judges to be non-compliance, including the power to levy financial penalties of up to 10% of global turnover.

38. Energy UK believes that existing checks on Ofgem’s enforcement decisions should be strengthened by giving regulated firms the right to appeal on the merits of the case. This would align Ofgem’s level of accountability with that of Ofcom.

39. The Select Committee on the Constitution recommended this change in its 6th Report of Session 2003–04. The arguments are even stronger now: (a) since 2004 more relevant obligations have been imposed on energy companies, (b) in 2011 Ofgem acquired the ability to make licence modifications without the approval of a qualified majority of licensees and (c) DECC is currently consulting on giving Ofgem new powers to secure redress that would not be subject to a financial cap.

Notes

This response represents a broad consensus of Energy UK members’ views. Some member companies may hold different views on particular issues and we would point out that National Grid was not a contributor to this response.

June 2012

Written evidence submitted by Scottish Renewables

Scottish Renewables

1. Scottish Renewables is Scotland’s leading renewables trade body. We represent 320 organisations involved in renewable energy in Scotland. Further information on our work and membership can be found on our website www.scottishrenewables.com.

2. Scotland is making a disproportionate contribution to the UK’s renewable energy targets, with hundreds of millions of pounds being invested in the industry each year and employment estimated at 11,000 full time jobs. In 2011, it is estimated that renewable electricity output was equal to around 35% of total annual electricity demand.

64 The narrow grounds of appeal are provided by s.27E subsection (4) of the Electricity Act 1989 and replicated in the Gas Act 1986. Subsection (8) states that “Except as provided by this section, the validity of a penalty shall not be questioned by any legal proceedings whatever.”

65 S.195 (2) of the Communications Act 2003 states that “The Tribunal shall decide the appeal on the merits and by reference to the grounds of appeal set out in the notice of appeal.”


67 http://www.decc.gov.uk/assets/decc/11/consultation/4975-consultation-on-a-proposed-new-power-for-ofgem-to-.pdf
3. The draft Energy Bill will radically alter the existing support mechanism for renewable electricity generation and therefore has the potential to dramatically impact on the development of the renewable energy industry and on progress towards the country’s renewable energy targets.

4. The Bill and the wider Electricity Market Reform (EMR) programme are designed to reduce the level of risk and uncertainty over the return on long term investments in renewable energy developments. This would in turn encourage greater investment in the industry and reduce the cost of capital, pushing down costs of development and therefore electricity prices for consumers.

5. However, the complexity of the EMR proposals, the risks of timetables slipping and the introduction of new risks to investors could all potentially run counter to these aims. We believe that the key focus of the committee’s inquiry should therefore be to assess how and whether EMR can deliver its intended outcomes of greater levels of investment at lower costs, given the significant challenges to implementation.

6. At this stage Scottish Renewables is firmly committed to working with the Department of Energy and Climate Change to address the concerns of our members over the detail of the Contracts for Difference (CfD) and to develop the frameworks and processes required to underpin the CfD; however, given the tight timescales for completion of this work, we would urge ministers to keep an open mind on the need to extend transitional arrangements and even on the need to leave other options open at this stage.

7. We recognise that the draft Bill sets out enabling powers for the Secretary of State and support this approach to the implementation of the CfD mechanism.

8. Given the recent publication of the draft Bill and the need to engage in a more thorough process of engagement and consultation with our members on some of the key aspects of the Bill, we have restricted our response to a high level summary of the key areas that impact upon the renewable energy industry in Scotland, namely CfD and offshore transmission. We aim to follow up with more detailed information and policy positions as the Electricity Market Reform process develops further over the summer.

9. Given the strong debate on renewable energy within Parliament and elsewhere, there are five strong messages from Government in the draft Bill which Scotland’s renewable energy industry very much welcome:

(a) Explicit commitment to the UK’s 2020 renewable energy targets and wider climate change targets.

(b) The need for government intervention in the electricity market to ensure that the country does not become overly dependent on gas generation, which would:

(i) lessen energy security;

(ii) leave us exposed to price fluctuations in wholesale gas markets; and

(iii) increase climate change emissions.

(c) The need for some form of revenue support for low carbon electricity, including renewables, nuclear and carbon capture and storage (CCS) in order to overcome the “barrier to entry” of the capital intensive nature of these technologies.

(d) The huge potential economic and employment benefits from future investments in renewable energy development and its supply chains.

(e) Supporting investment in renewables and other forms of low carbon electricity will keep bills down for domestic and commercial and industrial consumers in the longer term.

10. Together these constitute a welcome statement of support for the renewable energy sector.

11. The introduction of the CfD is the main way in which the Bill will impact our industry. Our members support the general principle of greater certainty over long term revenues in exchange for lower levels of revenue support.

12. However, the CfD may be a simple concept in theory, but it is incredibly difficult to design a framework with which to implement the mechanism in practice. It will mean the creation of a hugely complex set of arrangements and processes to underpin its implementation, and there are still many fundamental aspects of the CfD mechanism where thinking is at an early stage with concrete proposals to be developed over coming months. Our members are nervous that at this stage there is still little detail on many of the key aspects of the CfD mechanism.

13. The key features of the CfD and the areas where significant levels of detail are still to be developed are summarised in Table 1, which is taken from the relevant Draft Operational Framework.
### Table 1

**KEY FEATURES OF THE CFD AND “EMERGING PROPOSALS” (SOURCE: FEED-IN TARIFF WITH CONTRACTS FOR DIFFERENCE: DRAFT OPERATIONAL FRAMEWORK)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Emerging proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price setting and allocation</strong></td>
<td>Administrative price setting: How strike prices will be set for different technologies.</td>
<td>Renewables: similar to RO banding review process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CCS: initially through the CCS Commercialisation Programme competition in conjunction with the FID Enabling process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nuclear: initially on a project by project basis, through the FID Enabling process.</td>
</tr>
<tr>
<td>Competitive price setting</td>
<td>When and how strike prices will be set using a competitive process.</td>
<td>Move to competition as soon as market conditions allow; this could be 2017 for certain renewable technologies.</td>
</tr>
<tr>
<td>Eligibility</td>
<td>Which technologies will be eligible for support under the CFD regime.</td>
<td>Minded that new low-carbon technology plants that are not eligible for the small-scale FIT will be eligible for a CFD.</td>
</tr>
<tr>
<td>Allocation</td>
<td>How developers can apply for a CFD before the move to a fully competitive process.</td>
<td>Renewables: through allocation rounds run every six months.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CCS: initially through the CCS Commercialisation Programme or the FID Enabling process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nuclear: initially through the FID Enabling process.</td>
</tr>
<tr>
<td>Managing financial exposure</td>
<td>Ensuring costs of CFDs remain affordable.</td>
<td>Minded to instruct the System Operator to remain within an agreed budget when issuing CFDs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Considering whether further controls are required for particular technologies.</td>
</tr>
<tr>
<td><strong>CfD terms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-commissioning</td>
<td>The arrangements for monitoring the development of plant after CFD award.</td>
<td>Minded to place obligations on developers to build within agreed timescales, with proportionate penalties to incentivise compliance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermittent: Hourly Day Ahead Auction Price for the GB Zone (as established under North West European Market Coupling).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baseload: Year Ahead, price source to be determined.</td>
</tr>
<tr>
<td>Reference Price</td>
<td>The market price for electricity that is referenced in the CFD for the purpose of calculating CFD payments.</td>
<td>Minded to pay the CFD on the basis of metered output unless the price in the reference market is negative, in which case to pay on a measure of availability.</td>
</tr>
<tr>
<td>CFD Volume</td>
<td>The definition of the volume of electricity for the purpose of calculating CFD payments, and the resulting metering requirements.</td>
<td>Minded to base suppliers’ payment obligations on market share (as defined by “supplier cap take”).</td>
</tr>
<tr>
<td>Allocation of supplier payments</td>
<td>How suppliers’ payment obligations/entitlements are calculated.</td>
<td>Minded to base processes on Balancing and Settlement Code processes.</td>
</tr>
<tr>
<td>Settlement</td>
<td>Process and timing for invoicing and administering CFD payments.</td>
<td>Minded that settlement periods will be monthly or possibly shorter.</td>
</tr>
</tbody>
</table>
### Energy and Climate Change Committee: Evidence

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Emerging proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFD Length</td>
<td>The length of the CFD from the payment start date as defined in section C.</td>
<td>Initial view that CFD length for renewables should be 15 years. 10 years (subject to negotiations) for early stage CCS project(s) supported under CCS. Commercialisation Programme. Nuclear and long-term CCS-equipped plant to be determined.</td>
</tr>
<tr>
<td>Inflation indexation</td>
<td>Arrangements for adjusting the CFD strike price in line with inflation.</td>
<td>Minded to choose CPI as a standardised and established inflation measure that is familiar to international institutional investors.</td>
</tr>
<tr>
<td>Fuel Price indexation</td>
<td>Arrangements for adjusting the CFD in order that payments reflect a generator’s input fuel costs.</td>
<td>Minded not to link the CFD strike price to fuel costs for biomass. For the first CCS project(s), minded that the CFD should provide indexation needed to hedge against long term fuel price variability.</td>
</tr>
<tr>
<td>Credit and Collateral</td>
<td>The requirements on generators and suppliers to provide credit/collateral.</td>
<td>Minded to place a collateral requirement based on an estimate of likely settlement amounts due in a given trading (settlement) period.</td>
</tr>
<tr>
<td>Amendment of the reference price and other CFD parameters</td>
<td>The arrangements for amending CFD parameters in response to changes which might impact the validity of the indices used.</td>
<td>Minded to include an “independent expert” role in the CFD framework to manage any review of CFD parameters and determine any amendments required.</td>
</tr>
<tr>
<td>Change in Law</td>
<td>Arrangements for adjusting the CFD in response to relevant changes (eg regulatory) that materially affect the value of the CFD to either party.</td>
<td>Minded in principle that the CFD should contain change in law provisions, the form and scope of which remain to be determined. Further detail will be set out in the autumn.</td>
</tr>
<tr>
<td>Dispute Resolution</td>
<td>Procedures for resolving any disputes arising under the CFD.</td>
<td>The Government will seek further legal advice in this area before engaging with stakeholders later in the year.</td>
</tr>
</tbody>
</table>

### Legal Framework and Payment Model

| Legal status of the CFD       | The arrangements for promoting investor certainty.                        | The draft Energy Bill outlines that the CFD will be an instrument created by statute that sets out obligations on suppliers and generators. However, Government is considering industry concerns around whether a conventional contractual model would be preferable. |

### Route to market and liquidity

<table>
<thead>
<tr>
<th>Route to market</th>
<th>Independent generators are often reliant on Power Purchase Agreements to secure project financing.</th>
<th>The Government plans to issue a call for evidence in June 2012 to set out understanding of the issues, the evidence that is needed to move forward, and to outline initial options that may address market concerns.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity</td>
<td>A liquid electricity market is an important factor underpinning the operation of the CFD.</td>
<td>Government welcomes recent positive developments in the markets, but believes further measures are necessary and will work with industry and Ofgem to ensure liquidity strengthens.</td>
</tr>
</tbody>
</table>
14. These questions will effectively “make or break” the implementation of the CfD and the industry is investing significant time, resource and energy to working with officials to develop more concrete and practicable proposals in all these areas.

15. It is vital that all these questions are answered in a way which is legally robust, practicable and transparent, which sets out the obligations on all relevant parties and which delivers certainty to investors. There is a sense that the Government must be in a position to provide clear answers to questions in all these areas by the time of the publication of the final Energy Bill if it is to count on the renewables’ industry’s support at that time. Likewise, future investment in the sector is dependent on contracts being seen as “bankable”, so it is vital that banks and other investors are comfortable with and understand the mechanism and its impact on revenues and liabilities for renewable electricity projects.

16. We would urge the committee to look at as many of the areas set out above as possible within the time constraints that it is working to, but the key issues that we would ask the Committee to focus on at this stage are:

   (a) Allocation.
   (b) Amendment of the reference price and other CfD parameters.
   (c) Legal status of the CfD.
   (d) Counter Party.
   (e) Route to market.
   (f) Liquidity.

17. Scottish Renewables would be happy to provide more information on the challenges to be overcome and our emerging thinking in any of these areas. We would also urge the committee to seek not just the views of those taking forward projects, but also the views of organisations which may be the counter party to these contracts and the views of investors in order to assess how government can ensure that the provisions will satisfy the needs of these parties.

18. We would also urge the Committee to assess how the provisions of the Bill will interact with other ongoing reforms of the electricity market, including Ofgem’s Retail Market Review.

**Offshore Transmission**

19. The other area of the Bill where we wish to comment at this stage is the provisions on offshore transmission.

20. Scottish Renewables supports the general principle of greater coordination of the offshore transmission network. This is of particular importance to Scotland, where there is the potential to integrate not just offshore wind farm connections, but also inter-connectors between parts of the Scottish mainland, the Scottish islands and between Scotland and other parts of the UK.

21. For example, the proposed offshore transmission hub in the Moray Firth would connect Shetland, Caithness and the Beatrice and Moray offshore wind farms with Moray. This would have the benefit of reducing costs, complexity and the visual impact of associated onshore works. However, at this stage it is unclear if the project will proceed due to the location of the hub and whether it is compliant with the licence of SHETL.

22. Similarly, there may be significant merit in connecting offshore developments in the Firth of Forth and Tay directly to the proposed inter-connector between the north east of Scotland and the north east of England. However, it is not yet clear if the current rules on offshore transmission and the differing roles of National Grid, SHETL, and Scottish Power Transmission would facilitate this option.

23. We would urge the Committee to ensure that appropriate mechanisms and powers are in place to allow rational decisions to be made on the integration of offshore grid connections in the north east and east coast of Scotland in order to ensure that the optimal solutions for generators, the environment and for consumers are taken forward.

**Scottish Issues**

24. There are a number of other issues which have a particularly Scottish dimension, including the transition from the RO, the high transmission charges paid by Scottish generators and the higher levels of constraints within the Scottish electricity transmission network.

25. We would urge the Committee to ensure that these issues are properly examined during its inquiry.
CONCLUSION

26. Scottish Renewables welcomes this opportunity to contribute to the Committee’s and DECC’s thinking on the draft Energy Bill. We are committed to working with both Parliament and Government to develop a set of arrangements for the electricity market which meet our shared ambitions for greater deployment of renewables and lower costs for consumers. However, we are concerned at the lack of detail on many aspects of the Contract for Difference mechanism at this stage, and further development of more concrete proposals which meet the needs of developers, suppliers, and investors is essential to ensuring that ministers meet their desired outcomes for the Bill.

27. We are keen to provide oral evidence on any of the issues outlined above to the Committee and aim to follow up in more detail on many of these points during the inquiry.

June 2012

Written evidence submitted by Somerset County Council, Sedgemoor District Council and West Somerset Council

1. SUMMARY

1.1 Somerset County Council, Sedgemoor District Council and West Somerset Council are calling for Community Benefit to cover the operational phase of new nuclear power stations via the local retention of business rates. The key points are that legislation should;

(a) Take into account all new low-carbon generation projects, including nuclear power. Apart from the need to achieve the 2020 renewables target, the same justification for eligible renewable energy technologies applies to new nuclear; namely the need to:
   — decarbonise the energy sector;
   — make energy supplies more secure;
   — help protect customers from fossil fuel price fluctuations;
   — drive investment in new jobs and business;
   — keep the UK on track to achieve carbon reduction objectives; and
   — accept that the best way to win public acceptance of new nuclear is to reward and compensate the local communities hosting the necessary infrastructure.

(b) Recognise that communities which host nationally significant projects (including new nuclear) which meet national need should be allowed to benefit:
   — This concept is already well-recognised by Government for specific projects in the UK in relation to renewable energy, oil and gas, and nuclear waste storage. It also supports localism.
   — By their nature, new nuclear developments will be substantial, and, while bringing some UK wide and regional benefits, they will also result in impacts on local communities of a scale that is much greater than most renewable energy projects.
   — Not to include nuclear power within the definition of eligible energy technologies is inconsistent and unfair for communities which host new nuclear developments.
   — The planning system alone cannot address the entire scale, scope and impact on local communities as a result of hosting new nuclear developments.
   — The Government has already accepted the principle of Community Benefit in the National Infrastructure Plan 2011.

2. INTRODUCTION

2.1 Somerset County Council, Sedgemoor District Council and West Somerset Council (“the Councils”) welcome this opportunity to provide written evidence to the Committee on the draft Energy Bill.

2.2 Somerset is situated in the South West of England and is likely to play host to the UK’s first new nuclear development—Hinkley Point C.

2.3 The Councils are responsible for the administrative areas affected by proposals currently being developed by EDF Energy for Hinkley Point C, on a site immediately to the west of the existing Hinkley Point nuclear power stations in Somerset.

3. KEY POINTS

3.1 The Councils’ welcome the Energy Bill as it is clear that steps need to be taken to ensure that the right mechanisms are in place to attract the level of investment that is necessary to ensure that secure, low carbon sources of electricity are developed at the required pace. The Energy Bill must ensure that the stable conditions
are created so that the right incentives are in place which will provide the appropriate level of certainty enabling all those involved to play their respective roles including regulators, investors and industry.

3.2 The Councils’ would urge the Committee not to overlook the key role local communities’ play in the delivery of new facilities that will generate the low carbon energy that the UK requires. The Councils believe that it is vital that host communities of new nuclear developments see direct benefits from hosting these vital projects in the short and long-term.

3.3 The National Infrastructure Plan 2011 issued by HM Treasury states at paragraph 3.81: “…. Engage with developers and local authorities on community benefit and bring forward proposals by 2012 for reform of the community benefit regime to provide greater certainty for all parties.” It is the firm belief of the Councils that the means by which this could be achieved is, in part, through an appropriate legislative framework that enables host communities to retain a proportion of the financial benefits that would be generated from a new operating nuclear power station.

3.4 The Councils recognise the importance of the Energy Bill to all those concerned with new, low carbon energy development in the UK. Whilst it is appreciated that the matter of a legislative framework associated with Community Benefit may not be a direct matter for the Energy Bill itself, we are keen to ensure that the Committee is aware of this issue and are able to consider this matter when making recommendations which could then be taking forward in relevant legislation. As the Bill intends to provide certainty to ensure that the required long term investments can be made we believe that the same principle should be made available to local communities that will host these developments. Any retention of Community Benefit should be independent of Government review, providing certainty to local communities so that they are able to make long term plans of how best to use community benefits to support local economic growth and enable the creation of a UK supply chain to support the development of new energy generation facilities.

3.5 We would like to draw attention to comments made by EDF Energy in their evidence submitted to the Building New Nuclear: The Challenges Ahead discussion, that: “it is absolutely critical that the Government continues to make steady, tangible progress with its Electricity Market Reform (EMR) plans and the framework for enabling investment decisions for early projects.” Speaking to the Nuclear Development Forum on May 15 2012, EDF Energy CEO, Vincent de Rivaz stated: “It is also important that host communities appreciate and see direct benefits from hosting these vital projects. I hope we will see this principle enshrined in regulations.”

3.6 The Councils remain supportive of the development of new nuclear energy infrastructure and the investment in the area, as well as the potential jobs and additional training and skills that are to be provided by the developers. However, this support is conditional upon the development not being to the detriment of our local communities, businesses and the environment.

3.7 Whilst the planning system ensures that direct impacts of nationally significant infrastructure are mitigated, it will not go far enough in the case of new nuclear development. We believe a Community Benefit Contribution scheme could be used to reflect the longevity of a new nuclear build development, including construction, operation and waste storage/decommissioning phases.

3.8 We see Community Benefit as designed to recompense communities outside of the Section 106 Agreement, ie outside the direct negative impacts that are quantifiable and evidenced before development starts. This is because the Section 106 regime is limited in its remit and solely related to planning impact.

3.9 The purpose of Community Benefit is to reward and compensate communities for significant infrastructure projects that they host. This is recognised both in the business rate retention proposals for renewables as well as the Community Benefit protocol already agreed for that sector. The Renewables sector already has a commitment for business rate retention which is wider than just wind farms. Whilst wind farms intrinsically may be of a low rateable value and therefore potentially less significant in funding terms, other renewable provision envisaged by business rate retention like biomass generators, will be more significant in scale.

3.10 This would have a significant financial impact in regard to business rate retention and lead to inequality of treatment. Why should a community that hosts a biomass generator benefit from the potentially significant sums generated by 100% retention of the business rate, whilst the new nuclear power station host communities receive no such reward and compensate?

3.11 All the criteria used in the Government’s Consultation on Business Rate Retention—including “creating a diverse energy mix; decarbonising our economy; creating energy security; protecting consumers from fossil fuel price fluctuations; driving investment and jobs; meeting carbon emissions reductions commitments; and incentivise development for growth”—are equally applicable to new nuclear development.

3.12 Community Benefit funds can be used to stimulate and sustain wider economic growth and indeed tackle barriers to growth, which cannot be met by existing Central Government or private sector finances. An example might be critical infrastructure required to enable UK businesses to participate more fully in the energy supply chain.

3.13 In summary, in order to enable sustainable economic growth there is a need to invest early in the construction programme so that the negative economic effect can be counter balanced. In addition, there
are likely to be impacts that could not be captured by the planning regime given the scope and scale of the development.

3.14 Somerset’s residents and business, or any other community expected to host new nuclear development, are likely to be significantly affected by the proposed new nuclear development, should new nuclear development be approved. While the Councils welcome the potential for UK wide economic growth and associated benefits a development like this may bring to an area, we are equally aware of the potential negative impacts and burden it could have on host communities.

3.15 Therefore, we see Community Benefit as the means by which local communities can be fairly and reasonably recognised for hosting an infrastructure proposal which will have a transformational effect upon a local community. Given the scale of the development proposed, particularly during construction, the planning system will not address all of the potential long term and far reaching effects (both positive and negative).

3.16 The following matters could not be achieved through a series of planning obligations;

— Creating sustainable economic growth to support the delivery of new nuclear in Somerset and the UK. Also ensuring that the locality continues to attract other investors.
— Scale and duration of disturbance.
— Residents’ perceived impacts.
— Impacts on those that will not receive any direct benefits such as employment opportunities.
— Long-term well being of an area.

4. Recommendations

4.1 The Councils respectfully request that the Committee consider recommending that the concept of Community Benefit be considered through a suitable legislative process. The matters which we wish the Committee to consider including in their recommendations are;

— That a clear framework is created which enshrines the concept of Community Benefit in appropriate legislation.
— That any legislative framework addresses the inherent inconsistency between renewables and other low carbon energy generation technologies.
— That Community Benefit in relation to the UK’s New Nuclear Builds recognises the role communities play in hosting such developments morally, politically and practically.
— That as Community Benefit is a common and well established practice in the UK in relation to the renewables, oil and gas sectors and is under consideration in respect of waste, it is equitable and consistent that Community Benefit schemes should apply in relation to the UK’s New Nuclear Builds.
— The size of a Community Benefit scheme associated with New Nuclear Builds should reflect the overall scale, nature and national significance of the development and the particular local circumstances of the host communities.
— A Community Benefit scheme should provide short and long-term benefits to host communities. Any scheme should reflect the longevity of a New Nuclear Build development and assurances should be provided regarding any timescales for any review of associated legislation.

June 2012

Summary

— ABB is a global leader in power and automation technology, proving products and systems for low carbon power generation, for example components for wind turbines, grid infrastructure and control systems.
— We are concerned that the EMR timetable continues to slip and feel that Government should consider extending the RO transitional period.
— The Energy Bill is drafted broadly and leaves a lot of discretion for Government to establish the detail of EMR at a later date. We feel that adequate controls should be placed on the Secretary of State in the exercise of those powers.
— The term of the FiT CfD should more closely relate to the economic life of the generation technology, which is longer than proposed by Government.
— We need to see the detail of the capacity mechanism quickly if we are to be ready to respond to issues.
— Statutory definitions of transmission, offshore transmission and interconnectors need to be revisited to ensure compatibility with an offshore grid.
INTRODUCTION

1. ABB is a global leader in power and automation technologies and the ABB Group of companies operates in around 100 countries and employs about 135,000 people worldwide. Much of our innovation and new technology is focused on the twin challenges of increased energy efficiency and facilitating a more sustainable green energy supply. We provide a number of products, systems and solutions that are integral to the development of renewable energy projects, such as components for wind turbines, grid infrastructure and control systems. ABB has also recently made a major investment in Aquamarine Power, a wave energy company, which is developing a major wave energy array off the coast of Scotland.

2. We have committed to an ongoing programme of investments to support the growing demand for low carbon energy. In the UK and Ireland, ABB employs around 3,000 people and continues to invest in jobs, training and facilities to help build a low carbon economy. The successful delivery of Electricity Market Reform is therefore critical to the continued growth of our business in the UK. We are committed to working with Government to develop a workable package of Electricity Market Reforms to deliver a secure and affordable low carbon energy future.

3. We welcome the opportunity to provide evidence to the pre-legislative scrutiny inquiry for the draft Energy Bill 2012. We recognise that the Energy and Climate Change Committee has an important role in examining the detail of this critical piece of legislation. Our written evidence mainly focus on the proposed Electricity Market Reform package set out in Part 1 of the draft Bill. However, we also touch upon the offshore transmission provisions of the Bill set out in Part 4.

GENERAL OBSERVATIONS ON EMR

Market context

4. The growth of the low carbon economy has the potential to secure local jobs, establish key skills and deliver economic prosperity, while meeting the UK's binding renewable energy and carbon reduction targets. Fundamental to the success of EMR is the need to maintain investor confidence throughout the sector. In particular, the supply chain will require the confidence to invest to enhance capabilities necessary to meet future growth, while delivering the much sought after cost reductions that will ensure the long term sustainability of the UK power industry.

5. It is important to set EMR within the context that the UK is currently competing in global markets for capital, equipment and skills. The global power market is experiencing a sustained period of rapid growth as several countries embark upon ambitious investment programmes to deliver low carbon energy for the 21st century. The recent acquisition of Seajacks International, a major installer of offshore wind turbines, by Japanese investors highlights the level of competition that the UK now faces from international markets. The EMR must therefore play a critical role in providing a robust long term policy framework that is sufficient to attract and maintain interest from the global investment community in UK opportunities.

Timely delivery of EMR

6. We consider that the publication of the draft Energy Bill is an important step in the EMR process. However, we have real concerns that a number of detailed issues remain unresolved. The lack of clarity and certainty around the EMR has already had an adverse impact on investment in the low carbon economy. We note that several major offshore wind developers have stated that they will delay investment decisions for many projects that were previously expected to complete in 2016–17. The lack of clarity over the FiT CfDs framework and risk of project overruns taking their projects beyond the RO cut off point have already been cited as significant factors in these decisions. The ongoing uncertainty in the UK market was also cited as a major contributing factor underpinning Doosan’s recent decision not to invest in Scotland.

7. We believe that too little has been done to send the right signals to the industry to enable them to secure the investment that will ultimately be required. At present, the draft Bill creates an enabling framework, with much of the specific policy detail to be finalised at a later date and implemented through subsequent secondary legislation. This approach is understandable given the challenging timescales for delivering the primary legislation. Nevertheless, we do not expect that all of the detail of the market reforms will be finalised in detail by the time of Royal Assent.

8. We recognise the significant consequences of failing to deliver workable market reforms and therefore support a flexible approach that enables the details of the EMR to be considered fully. However, the approach leaves a number of open questions that will not be addressed for some time. We need firmer assurances and clearer mechanisms providing industry certainty for the long term, including supportive messaging from across Whitehall. Without this it is unlikely that the industry will have sufficient confidence in a bankable package of reforms until 2014.

9. Since the Government White Paper was published in July 2011, the EMR timetables have continuously slipped. In the latest timetable, Royal Assent has been pushed back by a further three months. There are a number of outstanding issues that will be challenging to resolve. As such the timely delivery of workable
reforms remains a major area of concern. There is no apparent “slack” in the plan making the current timetable look like a big challenge with significant delay risk attached.

10. We feel that Government could maintain investor confidence and manage the risk of further timetable slippage by extending the transitional period during which the renewables obligation remains in force by up to two years. We believe that the impact on consumer bills would be offset by the stimulus to the wider economy from investment across the supply chain and the creation of long term jobs and growth.

DETAILED COMMENTS

Energy Bill Drafting

11. The Energy Bill has been drafted very broadly and a number of open ended powers are being taken by Government. This leaves a number of questions about how much detail will be captured under secondary legislation. Moreover, the change control framework appears to offer limited comfort to investors that they will have a long term government commitment. For example, developers and investors that have committed significant resources to progressing projects may find the economics undermined by changes that are implemented at short notice. Such a risk is likely to undermine investor confidence in the long term and lead to higher risk pricing. This could be mitigated by placing more onerous requirements on the Secretary of State when bringing about changes to key parameters of the regulations, for example a minimum 18 month lag before any change to the terms of the CfD can take effect. Such an approach would provide greater transparency and certainty to the market.

FIT CfD allocation & operation

12. The introduction of the FiT CfD support mechanism is a central element of the EMR framework. We are concerned by the lack of clarity in the process by which FiT CfDs will be allocated across projects. It is likely that the number of applicants will exceed the number of contracts available each year. It is important to recognise that for project developers and the supply chain, a significant resource commitment is made to progress a project to financial close. The consequences of not securing a CfD in a timely manner could have significant consequences, particularly for technologies that rely upon a constrained supply chain. The principles and process for allocating contracts must be transparent, fair and subject to independent review. It is also important that applicants have an appropriate route of appeal.

13. Decisions being made regarding the institutional design of the CfD counterparty are critical to whether future projects will be bankable under the proposed FiT CfD. In the absence of a direct counterparty, investors will need to be educated on the detail and reassured regarding the enforceability of the contract. In this regard, funders will want comfort that the legal framework offers appropriate protection to their investment.

14. We note that DECC propose a CfD term of 15 years for renewable technologies, as representing an effective balance between the need to attract finance and ensuring that the support mechanism remains affordable. In contrast, the approach for global infrastructure projects has been towards longer term contracts (30 years) in order to ensure that projects remain affordable year on year. We consider that longer term contracts offer more flexibility in terms of financing options and are potentially more consistent with the goal of keeping bills affordable.

15. Investors will aim to have achieved an appropriate return on their investment within the period of the contract. As such, shorter contracts will generally have a higher initial cost to customers and will be potentially more burdensome at the beginning whereas longer contracts can be more affordable year on year but a little more costly overall.

16. We would prefer to see an approach where contract lengths are related to the economic life of the generating plant. For many renewable technologies this is 20 to 25 years. This approach is consistent with the principles underpinning the existing RO. It should also be recognised that adopting a similar approach has been successful in attracting new sources of capital into the OFTO tender process, providing flexibility over raising both debt and equity finance.

17. The Government has stated that the EMR framework is intended to reduce risks and encourage investment. However, the proposal to hold auctions as a means of allocating CfDs appears counter to this aim. Auctions are extremely difficult to design effectively and are often subject to gaming by small numbers of bidders. We consider that an auction framework for CfDs is therefore likely to discourage some investors and slow project development, leaving large project developers to ration their projects in order to maximise returns. Such an outcome would be damaging to development of the UK supply chain. We therefore urge the Government to find an alternative mechanism for allocating CfDs in the longer term.

Capacity Mechanism

18. We support the rationale for the development of the capacity mechanism which recognises the potential role of demand side response. We note that the capacity mechanism is relatively underdeveloped at present and a substantial amount of policy development is still to be progressed.
19. DECC has acknowledged that under certain assumptions the UK may experience tight capacity margins in the middle of this decade. The draft framework document published alongside the draft Energy Bill highlights the need to give an appropriate lead time for industry to commit to capacity contracts. Given the potential risk to security of supply before 2020, it is important that the details of the capacity mechanism are resolved quickly so that the industry can respond in a timely manner.

20. Energy storage technologies potentially have an important role to play in managing capacity requirements. Having deployed the UK’s first battery energy storage device, we appreciate that there are significant legal challenges to be overcome in relation to the treatment of the energy offtake and energy then resupplied to the grid. The integration of non-generation technologies within the capacity mechanism potentially provides an opportunity to address some of these issues.

**Offshore Transmission provisions**

21. We welcome the intention set out in the draft Bill to enable offshore renewable developers to carry out, during the commissioning phase of their project, certain transmission activities prior to transfer of their project to the selected Offshore Transmission Operator. This had become a major concern for the offshore wind industry. The proposal will provide investors and contractors with the assurance that they can undertake commissioning tests prior to transfer of the offshore transmission assets without acting unlawfully. This is a pragmatic approach which should ultimately avoid unnecessary cost.

22. We believe that Government should adopt a similar pragmatic approach in relation to the internal conflict inherent in the statutory definitions of transmission, offshore transmission and interconnectors. DECC and Ofgem highlighted in the Offshore Transmission Coordination Project conclusions report that the conflict was a barrier to the development of a meshed offshore network. The conflict arises because the legal definitions of offshore transmission and interconnectors were developed in the early 2000s at a time when the likelihood of a meshed offshore grid was a remote proposition. As such, the definitions are intended to be applied exclusively. The potential development of meshed offshore networks now creates an overlap and the potential for transmission infrastructure in offshore waters to “flip” between regulatory regimes. This issue has already had significant impacts on projects in the Moray Firth and appears likely to become a significant risk to the proposed developments of the East Coast HVDC links and nearby offshore wind farms.

*June 2012*

**Written evidence submitted by Statkraft**

— Statkraft is a committed investor in the UK electricity sector and a significant new entrant in the wholesale market. Our strategic ambitions for expanding our investments and market activities in the UK are built on the following requirements:
  — A stable, transparent policy regime and low levels of political risk exposure.
  — An investment framework for renewables (offshore and onshore wind in particular) that delivers manageable risks and a balanced risk-reward picture.
  — Effectively functioning wholesale markets which enable us to manage our commercial risks.

— We fully and actively support the UK Government in its objectives of cost effective growth in renewables, decarbonisation and security of supply. However, Statkraft is not yet convinced that the current proposals will deliver the Government’s stated objective of vastly increasing investment in low carbon energy generation at least cost to the consumer.

— There is an urgent need for improved transitional arrangements for renewables support when introducing EMR—the logical solution is to prolong the RO to 2020 in parallel with introducing the CfD:
  — The RO is successful, well understood and bankable, has attracted Statkraft and other major utilities to invest in renewables in the UK and has supported significant growth in renewables generation.
  — Nuclear and CCS projects may clearly benefit from an introduction of the CfD as there have not been any significant support mechanisms available for these technologies. In addition, levels for the CfDs for nuclear and CCS will be negotiated on a project by project basis. For renewables the advantages of the shift to a CfD are less apparent. We see significant challenges related to the introduction of CfD for renewables investors in particular.

— Challenges related to the introduction of CfD for renewables may be solved, but improved transitional arrangements are urgently needed to avoid an investment hiatus. The logical solution is to prolong the RO to 2020 alongside introduction of the CfD.

— There are significant challenges related to allocation, strike price setting, and counter party risk that need to be solved before introducing a CfD:
  — Although the conditions for competitive price discovery for renewables support may be met in the long term, this is not the case for offshore wind in the short or medium term. We do not believe that auction or auction-like mechanisms for setting the strike price levels for offshore wind should be introduced before the mid 2020s.
Ev w90  Energy and Climate Change Committee: Evidence

— The process and timing for allocation of CfD contracts to renewable projects is a serious risk factor that could destroy investor confidence if not properly addressed. It is our belief, especially for large complex projects like offshore wind, that there is a need for allocation of contracts well ahead of Final Investment Decision (FID) as currently proposed. Instead, allocation of CfDs should be made at consent stage. This will partially reduce risk, but investors still need visibility on contract allocation at an earlier stage. A transparent system for allocation with clear and stable criteria is therefore needed.

— To avoid “stop and go” and a lack of predictability on contract availability we believe a longer term (multi-year) approach for CfD contract allocation in relation to the Levy cost control framework is necessary. Allocation should not be heavily influenced by annual wholesale price fluctuations for example.

— The legal status and the counterparty risk are serious challenges with making the CfD model acceptable for investors. A model that eliminates any significant counterparty risk is a prerequisite for introduction of the CfD.

— Given the large and diverse project portfolio of offshore wind resulting from the different Crown Estate rounds there should be more than only one strike price level for offshore wind. We believe that round specific levels would be much more appropriate. For the round three offshore wind projects—which have significantly different characteristics—there should be a provision for project specific strike price setting in line with the approach for nuclear and CCS.

— For intermittent renewables, there will be an additional cost compared to baseload generators in balancing the position in the within-day market and through the cash-out mechanism. This additional cost must be taken into account when setting the strike prices. For times when a plant is constrained off or prices are negative, we believe the payment must be based on availability instead.

— A well functioning wholesale market is essential. The introduction of a capacity market may have significant negative market impacts:

   — Despite recent measures by incumbents, liquidity and transparency issues remain in the UK wholesale markets, which we hope Ofgem and DECC are going to address through appropriate measures.

   — We are sceptical of the need for and the desirability of a capacity mechanism due to its potentially negative impact on the power market and total overall costs

\textit{Statkraft is a successful entrant into the UK electricity sector and a committed investor}

1. Statkraft is Europe’s leader in renewable energy and is a major player on the European energy exchanges. The company is wholly-owned by the Norwegian state and has 3,300 staff in more than 20 countries.

Generation projects

2. Statkraft is currently involved in four on-shore wind farms in the UK (200 MW) and, together with Statoil, is investing around £1 billion in constructing the Sheringham Shoal offshore wind park (317 MW) off the North Norfolk coast. Sheringham Shoal is already generating power and will be completed later this year. It will provide power to more than 200,000 UK homes when fully operational. The project employs 500 workers in the field and provides significant indirect employment.

3. Statkraft is also a partner in the Forewind consortium which has the licence to develop offshore wind projects at Dogger Bank off the East coast of Yorkshire. Forewind has a target of 9 GW installed capacity in the zone, which could require up to £30 billion of investment. The project could provide more than 10% of the UK’s electricity needs, create thousands of jobs, and reduce CO2 emissions by 13.7 million tonnes per annum.

Trading

4. The company is active in trading and origination in the power market. Our entry strategy for trading in the UK was to offer long term PPAs to independent developers of renewable electricity generation in the UK, facilitating their participation in the market. Statkraft is a leading provider of PPAs for other independent generators as well. Almost all entrants in the UK have had to become vertically integrated such that 85% of the players are now in this position. Statkraft will be the only pure energy retailer and we will concentrate entirely on larger industrial and commercial customers. By doing this we will benefit from being able to mitigate the problems of low liquidity in the power market and achieve better value for the ROCs and LECs from the PPAs than we get from selling them to the Big Six.

5. Our existing and planned investments in the UK electricity sector and our market activities are substantial. These will make a significant contribution towards the UK objectives of cost effective decarbonisation, penetration of renewable energy, inward investment, and security of supply. Given the significant pressures on the balance sheets of the incumbent Big Six, entry by non-vertically integrated investors into the generation sector is essential for attaining the Government’s objectives.
The RO regime has provided a sound basis for investment. Better transitional arrangements are urgently needed when moving to a new regime

The Renewables Obligation

6. The Renewables Obligation (RO) has delivered significant investments in renewable energy. The share of renewable electricity has increased from 4.1% in 2005 to 9.5% in 2011 (normalised according to Renewables Directive) with growth picking up in the later years. Installed renewables capacity grew by 32% from 2010 to 2011. UK is now is the leading market for offshore wind, with a capacity growth of 37% from 2010 to 2011.

7. The RO is well understood and bankable. The process of RO banding is based on objective factors such as developments in technology costs and is well-established. The drivers for the ROC prices are well-understood. The UK Government’s proven commitment to the principle of grandfathering means that the risk of asset stranding is low.

8. The fact that under the RO, market participants remain fully exposed to wholesale market price signals preserves overall market functioning. There is a risk for investors related to the wholesale power price development, but Statkraft, like other major utilities in the UK, is well positioned to manage this risk provided that UK wholesale markets are transparent and liquid and allow for effective competition. Indeed, our wholesale market entry strategy for the UK is based on taking on the commercial risks of other new entrants through the provision of PPAs.

Transition from the RO to CfDs

9. A key element of Electricity Market Reform is a change from renewables support in the form of the RO to a new CfD mechanism covering both renewables and other forms of low carbon generation. There are a number of unclear and unresolved issues around the CfD and wider EMR proposals. These need to be solved before investors will trust the new scheme and be willing, and able, to make investments under it.

10. The EMR proposals represent a comprehensive and complex package of reforms. The timeline for introduction of the EMR is very tight indeed given the number of complex issues that need to be resolved. The policy and legislative process already lags behind the original schedule. This fact, combined with the long lead times and significant up front cost for offshore wind projects ahead of FID means there is an urgent need for improved transitional arrangements. A legislative option for the premium FiT as alternative to the CfD should also be kept open if the challenges with the CfD mechanism cannot be duly resolved.

11. It is important that remaining issues are resolved in way that is workable, stable and do not need to be redefined and changed frequently. If not, this would expose investors to political risk and the policy development to significant lobbying. Compared to new entrants and smaller market participants, large incumbents will always have an advantage in lobbying Government and managing political risks.

12. The investment instruments and FID enabling process suggested in the Draft Bill to ensure a smooth transition from the RO remain opaque and not able to underpin the necessary investor confidence. The simple and logical solution to avoid a further hiatus in investments and enable the 2020 renewables target to be met is to prolong the RO towards 2020 alongside the introduction of the CfD.

13. Nuclear and CCS projects may benefit from an introduction of the CfD as there have not been any significant support mechanisms available for these technologies. In addition, levels for the CfDs for nuclear and CCS will be negotiated on a project by project basis. For renewables the advantages of the shift to a CfD is less apparent. Support for technologies such as nuclear is more challenging than for renewables from a State Aid perspective, and it is possible that this could delay or block the introduction of a CfD.

Risk of an investment hiatus

14. Under the current timetable, an offshore project would have to reach final investment decision (FID) in 2014 at the latest to have a chance of being accredited under the RO. Given the supply chain, network connection and technical challenges these projects face, it is unlikely that this deadline would be met on many existing projects. Therefore, in the near future, all FIDs would have to be taken on the basis that the project is likely to fall under the CfD regime. However, it is not yet possible to assess whether CfDs will provide an acceptable risk adjusted rate of return and understand the overall risk exposure. It will be difficult to start allocating significant pre-FID capital before CfD levels are transparent. Many companies will be unable to reach a positive FID on major projects, unless the RO is extended towards 2020.

15. The current proposal of prolonging the RO to 2017 only, endangers the project pipeline of significant offshore and onshore wind power investments which are absolutely essential for the UK to be able to meet its 2020 renewables and decarbonisation targets and also for the UK to maintain the momentum it is building up as a key centre for renewable technology deployment and development in Europe.

16. We see significant challenges related to the introduction of CfD for renewables investors in particular. They may be solvable, but improved transitional arrangements are urgently needed. The logical solution is to prolong the RO towards 2020 alongside introduction of the CfD.
The allocation of CfD contracts is a serious risk factor that could destroy investor confidence if not properly addressed

Allocation risks

17. Under the CfD regime renewables and nuclear power would be covered by one subsidy regime, with the political and cost risks associated with nuclear power directly influencing the prospects for renewable investors. The CfD contracts will also be subject to Treasury’s control framework for DECC levy-funded spending. This approach raises both political risks with respect to (a) the volume of CfD-contracts available for that year; and (b) the volume of contracts available to renewables projects as opposed to nuclear and CCS.

Timing of CfD allocation

18. Offshore wind projects typically have long lead times; project evaluation and the consenting process prior to FID will take three–five years and may cost significantly more than £100 million for a large zone. Further time and cost needs to be spent post consent prior to a FID. It is therefore not acceptable to investors to have such uncertainty related to whether a project will actually be offered a CfD contract when reaching the stage of final investment decision. It is our belief that large complex projects like offshore wind there is a need for allocation of contracts well ahead of FID. Instead allocation of CfDs should be made at consent stage. This will partially reduce risk, but investors still need visibility on contract allocation at an even earlier stage. A transparent system for allocation with clear and stable criteria is therefore needed.

Levy control framework

19. The uncertainties surrounding the levy control framework means that long-term business planning becomes challenging for investors. A “stop and go” pattern of project development related to annual levy control framework decisions would not only result in higher risk and associated cost for investors but also hinder the development and expansion of supply chains and hence raise cost levels in the sector in the medium term.

20. To avoid “stop and go” and a lack of predictability on contract availability we believe a longer term (multi-year) approach for CfD contract allocation in relation to the Levy cost control framework is necessary. Allocation should not be heavily influenced by annual wholesale price fluctuations for example.

21. The legal status and the counterparty risk are additional, serious challenges with making the CfD model acceptable for investors. A model that eliminates any significant counterparty risk is a prerequisite for introduction of the CfD.

Strike price setting should be transparent and not based on auctions at this stage—strike price levels for offshore wind should be round or zone-specific

Strike price levels for offshore wind

22. Although the conditions for a competitive price discovery for renewables support may be met in the long term, this is not the case for offshore wind in the short or medium term. There should be no provision for introducing auction or auction-like mechanisms for setting the strike price levels for offshore wind before well into the 2020s.

23. Corresponding to the banding principles for the RO, we understand the intention with the CfD is to set technology-specific strike prices. This approach should encourage investment in projects from a range of available technologies, whilst at the same time avoiding unnecessarily high levels of support. This principle is sensible.

24. However, we note that for offshore wind—by far the largest technology by expected growth to 2020—there is however only a single banding factor in the RO. Given the large and diverse project portfolio of offshore wind resulting from the different Crown Estate rounds, round-specific levels would be much more appropriate. Having only one strike price for offshore wind level may mean superprofit for the projects with the lowest cost of energy, and differentiated levels will deliver more for the same money spent.

25. It is proposed that nuclear and CCS projects can expect a specific strike price level per project. We see no reason why there should not be a provision for individual setting of strike prices for round 3 offshore wind projects given their scale and uniqueness.

National Grid’s role

26. National Grid will have a key role in administering the CfD and capacity mechanism, including setting strike prices. In this respect there needs to be strong ring-fencing of the National grid body that will act as delivery agent for EMR, and there needs to be complete transparency into the decision-making process taking place at National Grid.
Reference price for renewables

27. Setting a reference price for renewables with intermittent generation is very different from doing so for baseload technologies. Whereas a baseload generator can expect to achieve the average market price, an intermittent renewables generator will tend to generate when prices are low. This is partly mitigated by using hourly day-ahead prices as reference price, as put forward in the draft Bill. This does however not mitigate the additional cost of balancing the position in the within-day-market and the cost of handling unbalances through the cashout-mechanism. This additional cost should be taken into account when setting strike prices for intermittent renewables.

28. For times when a plant is constrained or there are negative prices, we believe the payment must be based on availability instead.

To incentivise investment by non-vertically integrated companies and market innovation effective wholesale markets are key

Market liquidity

29. To meet the Government’s objectives of security of supply, decarbonisation and affordability, the electricity sector will have to attract significant investment and facilitate commercial and technological innovation.

30. Given the significant calls on the balance sheets of the incumbent Big Six, entry by non-vertically integrated investors into the generation sector is essential for attaining the Government’s objectives. To facilitate such investment, the wholesale market has to generate price signals along the curve which are transparent, cost reflective and resistant to gaming.

CfDs and liquidity

31. The implementation of CfDs relies on highly liquid wholesale markets to generate robust reference prices. However, true liquidity in the UK wholesale market continues to be too low to support effective market functioning in both retail and wholesale. High levels of vertical integration have resulted in a situation where incumbents mostly trade at the margins.

32. The CfD should underpin liquidity in the Day Ahead Market as there is an incentive to holders of CfD to sell into this market to hedge their position. At the other hand the CfD could reduce liquidity of trading along the power market curve. To manage our current PPA exposure (based on the RO) we have to trade power several seasons ahead to fix prices, as well as the month and week ahead to hedge volumes and prices and the day ahead and on the within day market to balance final generation as the weather changes. With the CfD there is not a corresponding need to trade along the power market curve

33. Despite various recent measures by incumbents, liquidity and transparency issues remain in the UK wholesale markets, which we hope Ofgem and DECC are going to address through appropriate measures.

A capacity mechanism will impact on the wholesale market and blur signals to generation investments and demand response

34. Maintaining security of supply is clearly essential. However, we do not believe it is clear that the proposed capacity market is a necessary measure. Statkraft’s view is that there should be a high threshold for introducing such a measure due to its potential negative market impacts.

35. A capacity mechanism will blunt price signals by depressing average wholesale price levels and flattening them at peak. The mechanism is likely to impose significant overall costs on consumers as wholesale price reductions are likely to be more than outweighed by capacity payments, with a highly negative NPV for the scheme overall.

36. The impacts on security of supply are unlikely to be highly valued by customers. Any security of supply benefits of a capacity mechanism are likely to be back-loaded (ie they will occur from the mid-2020s onwards) and constitute improvements on already high levels of security of supply. In addition, increasing interconnection, improved storage technologies and better demand responsiveness are all technological innovations which are likely to occur in this time-frame and which are likely to remove any need for, and benefits of, a capacity mechanism. Wide-spread implementation of smart metering technology is one example. It is not clear what demand will respond to if wholesale prices are going to be both depressed and flattened at peak as a result of the capacity mechanism. It is also less likely that there will be effective price signals for investment into interconnector capacity under a capacity mechanism, even if this could be a more cost effective and flexible way of obtaining security of supply benefits than the mechanism itself.

37. If a capacity mechanism is introduced, cross EU harmonisation should be sought, and the mechanism should be open for participation through cross border interconnectors.

June 2012
Written evidence submitted by the Banks Group Ltd

1. SUMMARY

1.1 The Banks Group is a private company operating in both coal and renewable energy sectors and is concerned that the arrangements in the draft bill/EMR and future policy announcements will:

— Lead to a second dash for gas that will undermine the carbon reductions targets and investment in low carbon technologies.

— Create significant uncertainty for IPP’s, such as Banks, developing new renewable capacity which will result in a reduced investment appetite for new projects because the Coalition Government consistently sends out mixed messages about its commitment to renewable policy and then introduces the EMR which creates a framework for frequent government intervention. This is most acutely apparent through:
  — Uncertainty in the CfD strike price setting mechanism, and the frequency that prices can be amended.
  — The introduction of volume targets for different renewable technologies that could change significantly during the typical five year development/investment cycle for a wind project, without any clear mechanism to ensure lowest cost renewable options that attain planning are prioritised over more expensive technology options.
  — An environment where there appears to be little incentive on suppliers to enter into PPA’s at reasonable rates for IPP’s.

— Lead to higher cost forms of renewable energy, such as offshore wind being placed ahead of the lowest cost and most proven technology- onshore wind, at a significant higher cost to the consumer.

— Not protect valuable jobs, skills, assets and much needed existing generating capacity in the coal sector.

2. BANKS GROUP OVERVIEW AND APPROACH

2.1 Banks are a medium sized business based in Durham, founded in 1976 employing c360 and operating in three key divisions

— Surface Coal Mining.
— Renewables—Onshore Wind.
— Property.

2.2 A supply chain of over 1,000 suppliers is associated with the business.

2.3 Wherever possible our supply chain is locally sourced and the benefit to the local economy cannot be underestimated. During the construction of our Marr windfarm near Doncaster in 2011, of the £32 spent on material supplies during construction we used 16 materials suppliers, with the majority being within the immediate Doncaster/Barnsley area, and all from the Yorkshire region. Similarly 12 jobs were directly employed on site during construction.

2.4 Our business model is based on identifying projects for sustainable development, bringing local communities along with us, and being able to secure planning permissions for large scale developments using our Development with Care philosophy.

2.5 During the period Sept 09 to Sept 15, Banks Renewables is planning to invest some £65 million in new onshore wind farm projects, from inception through planning and consenting to financial close. Our portfolio totals just under 1GW of capacity. We are intending to construct some 250MW in the period to 2015 with an investment of £332 million and have planning permission and consents in place on a further 564MW. This demonstrates the significance of our forward investment plans, both in economic terms in the areas where our sites are based, but also the ability for onshore wind to deliver now.

2.6 We are a north east private company looking to make major investment in the UK in long term infrastructure assets. An archetypal company for what the UK economic recovery needs to look like. We are prepared to place significant risk capital in new developments throughout the UK currently having a portfolio of 60+ projects.

However:

— We are only willing to invest so long as we can see there will be an appropriate equity return for the risks we take.
— The equity return needs to take account of the cost of planning & development failures.
— If the combination of energy policy and planning policy results in an unacceptable risk framework for continued investment—we will not invest in the UK.

68 The coalition government is due to announce in the autumn further policy on gas fired power stations
2.7 Banks are concerned that the Draft Energy Bill, and associated policy overview on EMR will have a significant negative impact on both our onshore renewables and coal mining businesses, at a time when we are investing considerable capital in new projects development work of circa £10 million pa and over £50 million in new plant and equipment in our mining business. This investment is helping to secure and creating new jobs across our energy business streams.

3. General Energy Policy Comments

— The Bill significantly increases the level of complexity and risk of government intervention—making it more difficult for independent developers to assess the risk to their programmes.
— We would encourage the government to work much harder with European Governments to deliver a carbon cap and trade scheme which would price the cost of carbon more effectively—and then let markets, not government interventions, determine effective capacity solutions.
— The Bill provides no real guidance on the future of “Opted in” Coal Plant, policy seems only certain to deliver closure of coal plants and no guarantees that sufficient thermal and intermittent will be constructed to replace it.
— The recent announcements from RWE and EON indicate just how difficult the decision is to develop nuclear capacity.
— The market is signalling that gas plants are not economically viable.
— With dark spreads at currently levels, Opted Out coal plant will be closing sooner than expected.
— A number of the “Big Six” generators have constrained balance sheets and a preference for investing capital in other global markets. Is there sufficient capital in the debt markets to fund the proposed modernisation of European generation capacity.
— The debt markets for IPP funding are getting tougher, in part reflecting energy policy uncertainty, as well as the wider challenges and stresses of the European banking system.

4. Coal

4.1 The key areas of concern are as follows:
— Coal is an important part of the energy mix and should remain so. The Draft Energy Bill provides no positive view on the continued use of this indigenous energy resource. Whilst the bill and EMR policy refers to CCS equipped plants as being a key part of the mix, the exemption of new gas fired generation from being CCS equipped is signalling clear policy towards an uneven playing field which any new coal generation linked to CCS would have to operate, and will lead to 2030 and 2050 targets being missed.
— We suspect that failure in government policy outlined in section 3 now requires it to develop yet another option to incentivise a second “dash for gas”, as signalled by George Osborne in his budget statement. This reflects concerns over the looming capacity crunch and a CCGT build programme is now potentially the only option left to government to mitigate a failed energy policy.

However:
— we fail to see why the EPS requires a 450g/kwh level until 2045; and
— we fail to see how the government can comply with its carbon reduction targets if it encourages a second unabated dash for gas.
— The bill should recognise the importance of coal and indigenous suppliers to the energy security and generating mix in the foreseeable future. There needs to be a mechanism to allow coal fired generation to continue during the transitional period until CCS is fully established in order to maintain current capacity and avoid premature closures which will increase the risk and scale of an energy supply gap.

5. Renewables

Current issues affecting IPP’s and developers

5.1 The issues affecting development of onshore wind developer s such as Banks at the current time are:
— A costly, long and lengthy development process to get to planning with a low industry success rate (35%), the average cost of a planning permission £1,000,000
— Even after achieving a planning permission there can be a number of conditions that will either delay or prevent build out e.g., aviation and grid constraints.
— A general lack of project finance funding in the market for small—medium scale wind farms.
— The terms and conditions of funding packages have grown more onerous since the economic crisis
— Increase in the equity contribution required so putting pressure on our balance sheet.
— There are increasing lead times on critical path items as components are competed for globally.
— A lack of appropriate labour skills in the UK.
— The PPA market is very limited with little competition and minimal interest from the Big 6 suppliers, and therefore terms are increasingly onerous.

Implications for IPP’s—the move from RO to EMR CfD

5.2 Our overall assessment of the draft bill, is that by moving from the arrangements under the RO scheme to the new EMR arrangements, there are several key investment drivers under the RO scheme that would be lost, and would consequently inhibit or prevent investment for IPP’s. The issues are:
— Certainty in the CfD strike price.
— Introductions of technology related volume caps into the EMR.
— There appears to be no significant incentive for suppliers to provide PPA’s to IPP’s.

5.3 Original Renewable Obligation Scheme
— Under the original ROC regime, key features included:
  — Long term certainty of ROC prices.
  — Penalties for suppliers if they did not procure sufficient ROCs.
  — No ROC Banding for different technologies.
— Features of this scheme included:
  — The deployment of the most efficient forms of low carbon energy occurred first—ie Onshore Wind.
  — No significant deployment of other forms of low carbon energy was possible because the ROC subsidy was too low.
  — The difficulty in securing planning permissions for onshore wind, the lack of alternative forms of economically viable renewable energy and the effect of penalties on suppliers for not securing sufficient ROCs encouraged the major utility companies to enter into long term offtakes with IPP’s.
  — Utilities were prepared to underwrite IPP projects by taking the imbalance risk associated with the intermittency of Wind Farms in exchange for securing long term ROCable energy.
  — This enabled the development of an IPP model within a non recourse project debt framework.
  — This framework provided an appropriate risk/reward framework for The Banks Group to invest significantly in onshore wind development.
— For an IPP the key features included:
  — A ROC regime sufficient to underwrite onshore wind.
  — A framework that encouraged suppliers to procure IPP energy.

Key points
The original ROC regime provided sufficient certainty to an IPP developer that:
— onshore wind was economically viable;
— it could compete fairly with alternative low carbon energy; and
— there would be a buyer for the energy and the supplier would take imbalance risk in exchange for ROCs at an appropriate price discount.

The original ROC banding did not provide sufficient low carbon capacity quickly enough.

5.4 Introduction of ROC Banding

5.5 The government recognised that the difficulty of securing planning permissions for onshore wind combined with the price levels for one ROC prohibiting more expensive forms of renewable energy, meant the UK was way behind in delivering its low carbon targets.

5.6 Creating ROC banding was designed to ensure significant progress could be made towards this target.

5.7 However a consequence of this has been:
— As Offshore Wind became economically viable through a doubling of the subsidy level for offshore energy, the “Big 6” Utilities focussed increasingly on offshore wind.
— “Boutique” to “Industrial” is the phrase used by one utility.
— Natural barriers to entry exist for non utilities due to technology risks/financial scale.
— Significant offshore capacity is being developed at twice the cost of onshore capacity.
5.8 The “Big Six” now see they are more likely to be able secure the ROCs they need through their own offshore capacity. Consequently we have therefore seen a significant withdrawal of willing buyers of onshore wind energy through the IPP model.

5.9 There is no certainty that sufficient off shore capacity will be built by 2020 due to lack of liquidity in the financial markets coupled with technical and construction risk and constraints.

5.10 The Banks Group has continued to invest in Onshore Renewables under this revised regime on the basis that:

- There was no constraint in terms of targeted capacity by individual technology.
- Onshore wind being the most affordable of the low carbon technologies should be the most robust to changes in the electricity market.
- Onshore wind still was able to secure the same financial rewards as under the original ROC regime.
- Non Big Six Offtakers emerged as willing offtakers (Statkraft/Smartest).
- The market has become significantly harder in recent years for small-medium sized wind farms.
- Funding packages have become more onerous—in part reflecting wider macroeconomic issues.
- Lead time for equipment/components have increased.
- PPA market lacks competitive tension.

**Key points**

The revised ROC regime provided enough certainty to an IPP developer that:

- onshore wind was economically viable;
- it could compete with alternative low carbon energy; and
- there would be a buyer for the energy the revised ROC banding saw big six utilities significantly shift their focus to offshore wind to the detriment of the onshore IPP market.

Market conditions are tougher and PPS’s becoming more difficult to secure.

5.11 IPP’S need certainty from a framework to continue to invest. The banks group do not feel the proposed changes from RO to EMR provide certainty because:

- The level and frequency of government intervention possible from the draft Energy Bill creates significant uncertainty for any developer. This will no longer be a market subject to market forces.
- Developers need long term certainty that trading arrangements will remain in place over development life cycles that can be 10 years or longer prior to securing planning.
- The Bill gives Governments the ability to amend capacity volume targets and strike prices raising concerns that capacity mix targets and value propositions could change significantly every five years with the election cycle and therefore put significant investment at further risk.
- The incentives for the suppliers to purchase power under PPA’s from IPP’s have been lost under EMR.

5.12 The following must be addressed in the drafting of the energy bill:

- Measures to ensure onshore wind continue to be an economically viable proposition—as the subsidy to the taxpayer is significantly lower than alternative technologies.
- Ensuring onshore wind is able to compete fairly with alternative low carbon generation.
- Ensuring there is a buyer for the energy and imbalance costs associated with the intermittency of wind.

5.13 Conclusions and matters to be addressed in the final energy bill and EMR policy.

- There is uncertainty in respect of ROCs in the forthcoming review and depending on the level that it is set at will have a impact on the investment we will place in this sector in the future.
- Lack of clarity for CfD price setting now, means we cannot assess the returns on new and existing sites we already have that will fall into the new regime, five years is not a long time in the lifecycle of a wind farm development.
- The proposals for the CfD arrangement under EMR for CfD contracts to be awarded using a “technology/renewable sector” related series of “caps” using parameters set by government will have a significant negative impact on investment decisions to commence new projects, particularly if there is bias or discrimination against new onshore wind.
— A simple value proposition is needed, that makes it clear the returns and criteria that developers will receive under the new CfD arrangement. Similarly if the CfD pot is carved into a series of technology specific caps that creates further uncertainty about whether a consented project will be able to gain CfD support in the future. The ability to bring forward onshore wind projects, that represent the lowest cost form of renewable generation, will be seriously compromised. How can an IPP secure finance with the uncertainty of a subsidy tap that turns off when required to meet Government interventions—based on new, policy, budgetary or political objectives?

— The EMR does not make it clear that the focus is about developing the lowest cost forms of renewable energy first,—ie onshore wind, and this should be a key part of the EMR proposals to deliver renewables capacity in the most cost effective manner for the consumer.

— The above creates a lack of clarity in respect of whether there will be sufficient CfD allowances in the future and will also impact on new investment decisions on starting what is a long and costly development process for new renewables projects.

— A key issue at the present time is the difficulty of being able as an IPP to secure PPA agreements. The original unbanded ROC regime provided a “stick” for electricity suppliers to contract with IPP's (in the form of financial penalties if suppliers were short of their ROC targets).

— The introduction of ROC Banding, enabling the “Big Six” to focus on large offshore windfarm developments (with twice the subsidy level of onshore) has diluted the need for the “Big Six” to contract with more efficient onshore wind IPPs—and consequently the IPP market has become much harder in recent years. Under the CfD regime, the stick appears to be removed completely, and it is difficult to see why any supplier would contract for intermittent power from an IPP at anything close to the CfD reference price. IPP’s will simply not be able to get PPA arrangements, and therefore will not be able to invest or get finance to deliver needed energy capacity.

— We would encourage a system that also permits the system operator the ability to grant CfDs from one technology pool to another if that transfer can result in a lower CfD strike price being procured.

— We would encourage a system of transparency that requires the system operator to publish an annual report based on government proposals for CfD volumes that discloses the planned level of subsidy by technology, so that customers can see how much they are being asked to fund for relative technologies. There is very little liquidity in the market and therefore EMR needs to set out what transitional measures will be used to incentivise PPA liquidity and allow IPP's to invest?

— There is a perception that cost of finance is a critical aspect in determining cost and attractiveness of the investment. At current levels of cost and certainty this is not a critical issue, however the following are far more important considerations.

— Availability of Funds.
— Equity requirements.
— Term of funding.
— PPA attractiveness.
— Lack of clarity on CfD price setting and a cumbersome process full of government intervention which may or may not be transparent and efficient.
— Cost of turbines.
— High risk of securing planning permission.
— Availability and cost of grid connection.
— No political drive to ease the “selective engineering” and lack of resources of the MOD to remove technical constraints on investment.

— There is a lack of detail about how EMR will be rolled out in the devolved administrations.

June 2012

Written evidence submitted by Air Products

INTRODUCTION

Air Products, a leading global provider of industrial gases and equipment, energy and environmental systems and an inward investor in the UK, welcomes the opportunity to input into the Energy and Climate Change Select Committee’s pre-legislative scrutiny of the Draft Energy Bill published last month.

Air Products has gained planning permission to build a 49MW advanced gasification energy from waste plant in Teesside, with development intended to start later this year. This will create up to 700 construction jobs, over 50 permanent jobs, divert up to 350,000 tonnes of waste from landfill per year and produce enough
predictable, controllable, clean electricity to power up to 50,000 homes. If successful, four further projects of a similar size are possible with a total capacity of roughly 250MW of renewable electricity and a significant potential investment potential.

As a large international investor in a global market for energy products and services the UK’s combination of low carbon political commitment and predictable and comprehensive policy framework, most notably the Renewables Obligation (RO), has historically appealed to Air Products. However, more recently there has been a steady and worrying increase in delays, uncertainty and perceived (if not real) political interference in energy policy which has caused a growing concern amongst our US-based investment management team. The perception is that UK policy is becoming more uncertain and more unpredictable, particularly concerning the future of renewable energy post-2020. It would be very helpful if Government could declare their long-term interest in renewables and low carbon energy in legislative form to demonstrate the rationale and commitment to renewables that is driving this revised legislation. Whether this is based on a revised renewable target or a low carbon target, it would be helpful to have some aspect of these drivers written into the legislation. We are still very keen to do business in the UK but it is crucial that Electricity Market Reform (EMR) is as simple, transparent and expeditious as possible to avoid losing the confidence of potentially large investors such as ourselves.

With the new EMR mechanism set to come into force in 2017, it is envisaged that our first two proposed projects will fall under the current RO scheme. However the following three will likely be subject to the new EMR mechanism. Air Products was initially in favour of retaining the RO, as it has proved to be a workable and reliable system of support which has increased renewables deployment in the UK. However, given the Government’s intention to move away from the RO to a new Contracts for Difference (CfD) mechanism for all forms of low carbon technology, Air Products is looking to constructively work with Government to ensure the new system works for the sector, and in particular for new technologies for Energy from Waste.

Therefore, as a prospective large investor in the UK with potentially three out of the five projects looking to come on-line after 2017, the new system of support must provide certainty, longevity, and transparency in order to maintain confidence, bring these investments forward and help the Government meet their own 2020 targets. A timely delivery of EMR is also critical to Air Products’ ability to invest in these additional projects. If the proposed timescales slip further, it is vital that a “Plan B” is put on the table, such as extending the RO deadline from 2017 to 2020, in order to continue our development effort.

Overall, Air Products believe that the Draft Energy Bill is a positive step but some alarming gaps remain, with further detail and clarification on several key aspects of the Contracts for Difference (CfDs) mechanism urgently needed. Air Products would therefore recommend the following four points, which are explored in more detail in the next section:

— The contracting counterparty must be revealed as soon as possible and must be a tangible, credit-worthy, legal entity.
— The contracts themselves must be legally robust, be based on firm or indexed pricing, and run for the lifetime of projects.
— Contract allocation needs to provide early certainty in the project development process.
— The process and detail on the strike price must be revealed as soon as possible.

**The Contracting Counterparty**

From the Draft Energy Bill, it is not clear who will play the critical role of the contracting counterparty. From looking at the White Paper published last Summer and from the Impact Assessment published thus far, it seems that the CfD arrangements were originally designed with one contracting party in mind—the Government. However, it now seems that the Government is unwilling to take on this role, as is National Grid, with concerns around state aid implications. This opens up the question of who is going to carry out this important role.

If this entity is not well defined, it is impossible to make any serious judgment about the legal enforceability of the contracts themselves and the dispute resolution process. The counterparty must therefore be clearly defined, legally established, credit worthy and have the ability to write bilateral contracts with generators. A contract with one supplier versus multiple suppliers versus an entity like National Grid could have radically different consequences, especially if the entity was to have any financial difficulty in meeting the contract terms. This begs the question of what entity (if any) will backstop each of these contracting parties if they can’t honour the contract. Without a legally robust backstop, it will be difficult for investors to take any decision on developing a project. If the intent is to stay with the CfD, the only model that seems to address these issues is to have the contracting counterparty be an individual supplier with the group of suppliers and/or the Government back-stopping the individual supplier. In this way, the risk can be spread but the contract would still be with a single entity.

In addition to this, although DECC believes that National Grid is well qualified and would have no conflict of interest in fulfilling the role of System Operator, we have concerns over their ability to effectively carry out this role. It is difficult to see how a commercial entity deeply involved in the energy space should have access to highly sensitive information which may be required to be shared in the submission of a request for a CfD.
In addition, we are unsure that National Grid has the necessary resource and expertise to carry out this administrative function. An alternative solution could be to have a CfD contract selection committee which is comprised of members from National Grid, DECC, and Ofgem (and potentially others) so that the potential commercial interests of National Grid are counter-balanced by other committee members.

THE LENGTH OF CONTRACTS

The current proposals suggest that the length of contracts for renewable energy generators should be 15 years. We strongly believe that, in order to recover the cost of capital for a project such as ours, 20 years should be a standard contract length. This would cover the economic life of the plant and would be consistent with the approach currently undertaken under the RO. To sign a contract that covers less than the economic life of the facility presents a “contract-matching” problem. In order for a project to be bankable, the CfD will have to be of the same length as the life of the project; if not, the bankability of the plant is only as long as its shortest contract, shortening the economic life of the whole development. If the returns for a project are tight to begin with, the only two remaining choices if the life is diminished to 15 years are to raise the strike price of the CfD or not go ahead with the project at all.

Furthermore, in a similar way to the lack of clarity on the contracting counterparty causing too much uncertainty to invest, a lack of clarity on key contracting terms other than the contract length may also halt development. Without the answers to such fundamental questions such as what recourse might a company have for non-payment, what liabilities they will have to sign up to or how a force majeure is defined, it is equally impossible to spend any significant money developing a project.

We propose that once the contracting counterparty has been defined, that model agreements for different classes of technologies be developed in conjunction with DECC and some developer and supplier representatives to define must-have terms on both sides and options on nice-to-have terms that can be defined and potentially later refined. There will likely need to be at least two versions, one for intermittent technologies and one for baseload technologies, but this would at least give developers a sense of what terms they could be signing up to so that they can decide if those terms meet their business needs.

CONTRACT ALLOCATION

Our understanding of the CfD proposal as defined in the Energy Bill is that a developer will need to take their project to the point of financial close, or Final Investment Decision (FID), before applying for a CfD. This will add another layer of risk and uncertainty to the process with a developer having to commit significant amounts of capital towards a project in the development phase (front end engineering, planning approval, environmental permits, etc…) without any guarantee of being a allocated a CfD at the end of the process.

The issue that we and other investors are likely to have with this allocation process is that it varies quite significantly from the RO in the level of certainty that one can have at an earlier stage of a project where less money has been invested. Under the RO scheme, if a project obtains pre-accreditation at an early stage (post-planning permission receipt but pre-financial close), an investor can be fairly certain that they will be fully accredited and receive ROCs as long as they continue to build what they say they are going to build. In a case like ours, this might equate to a multi-million pound investment. However, if we waited until FID and then applied for a CfD, we could easily have spent three times that amount and still be unsure that we will get a CfD. Under such a scenario, we would quite likely not proceed or even consider investing in the UK for projects burdened by such a spend with no guarantee of a renewable power contract. We, in turn, propose that DECC consider adopting a pre-accreditation procedure to allow developers to “hold” a CfD commitment for a set period of time (eg 18 months) which can then be secured at FID.

The allocation must also be technology specific to take into account early stage technologies such as ours where the number of players in the market will necessarily be smaller. Whilst auctions may be attractive for more mature technologies such as onshore wind, where the market is more competitive, they should not be introduced to earlier stage technologies such as advanced gasification until the technology has had a chance to develop and make improvements based on some operations history. Auctions are a component of EMR which are not very applicable for developing technologies and will also increase the chances that contracts can’t be signed.

The Government is also proposing to allocate contracts every six months. We believe that this will unnecessarily increase risk and the likelihood of delay with the prospect of a project that has met all the other requirements failing to sign a CfD if they narrowly miss the allocation window. If conditions are met, then CfDs should be awarded as applications are received on a first come, first served basis rather than having windows which will simply create bottlenecks creating peaks and troughs in the project development process. This would, however, necessitate either more frequent reviews of renewable energy projects being awarded CfDs or a matching of those projects with the caps that are established on a periodic basis.
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THE STRIKE PRICE

It is the Government’s intention to have the first CfDs signed in 2014. Therefore it is critical that the current timeline of having draft strike prices published as early as April 2013 is kept in order to allow for a year lead in time before they become live.

In order to accurately set the strike price, a new cost assessment of all technologies will have to be carried out, replacing the previous ARUP study which we believe didn’t reflect the reality of the market place for earlier stage technologies. With the ARUP study, only a very few number of respondents actually submitted cost data in certain segments, which skewed the results of the evaluation by 30–50% or more in their first round of evaluations. We do not want to see a similar process for any new cost assessment carried out without the opportunity for input being sought from project practitioners and developers.

Finally, strike price reductions or contract term penalties (when projects are built) will make investment riskier and increase the cost of capital. Developers could invest significant resources and money by submitting an application and going through the development process, which is sufficient incentive to get the project completed as early as possible without having to pay a fine for delays, especially minor ones.

June 2012

Written evidence submitted by Combined Heat & Power (CHPA)

1. Introduction

1.1 The Combined Heat and Power Association (CHPA) is the leading advocate of an integrated approach to delivering energy services using combined heat and power and district heating.

1.2 This memorandum sets out concerns that the Electricity Market Reform process has almost exclusively focused upon a narrow suite of low-carbon power generation technologies, which taken together have limited prospects for deployment at scale within the next ten years. This situation risks compromising prospects for development of a suite of technologies and approaches that are deliverable today and which offer the greatest prospects for maintaining the security and affordability of energy supplies without compromising climate change objectives. The memorandum addresses those “deliverable” approaches on the supply side of the market, identifies the current and emerging constraints on their development, and sets out simple recommendations for a remedy that could be pursued within the scope of the Energy Bill.

2. Limitations of Electricity Market Reform in Securing Policy Goals

The scope of EMR is wider than three low-carbon generation technologies

2.1 The scope of the UK’s Electricity Market Reform (EMR) is wider than consideration of what appears to be the three “key” technologies that Government wishes to encourage: Nuclear, Offshore Wind and Carbon Capture and Storage. The EMR process is going to have major impacts across all areas of the electricity market. Despite this, discussion of EMR focuses primarily around DECC’s three key generation technologies. The profound nature of the impacts of EMR presents both risks and opportunities.

2.2 Some of the potential risks of EMR include:

2.2.1 Fundamental changes to the traded electricity market with new trading behaviours around the references prices possibly creating artificially low wholesale electricity prices and a fundamental reduction in market liquidity.

2.2.2 Increased costs and risks for small scale generators due to greater market price volatility and the costs applied for offsetting that risk to a third party (through a Power Purchase Agreement).

2.2.3 Security of supply risks as development of a capacity market causes new investors to delay investment until those rules have been established.

2.2.4 Increased cost to consumers by creating “obligated sellers” in the market. Generators will need to generate electricity to receive FiT payments which could create a very powerful incentive to sell electricity at a low price to ensure payment under the CfD. The resulting increased payments under the CfD would fall on consumers.

The Electricity Market Reform process is increasingly unlikely to deliver on all key objectives

2.3 The stated aim of the EMR process is to achieve three key objectives: decarbonisation of electricity generation, maintaining security of electricity supply and ensuring affordable electricity prices for all consumers. A combination of evolving circumstances now suggest that the EMR process, as set out in the draft Energy Bill, is unlikely to address these objectives within the approximate timescale of the next ten years.

2.4 Carbon emissions reductions—the fundamentals of deliverability: A number of factors suggest that the original timescale for the commissioning of new nuclear power generation must be in doubt. These include the sale of the “Horizon” consortium, delays in the site preparation works for Hinkley Point B as well as a
shift in the public statements made by EdF Energy, the principal investor in Hinkley Point. Secondly, delays over the carbon capture and storage (CCS) demonstration project means that CCS plant capturing emissions from all fuel inputs are unlikely to be delivered in the near term. Finally, the uncertainty over the EMR means that large scale renewables investments such as Round Three offshore wind projects are now on hold as they cannot be sure of commissioning before the 2017 date when the current support regime (the Renewables Obligation) will close to new entrants. For these projects the lack of certainty surrounding the CfD FiT combined with uncertainty over the timing of offshore transmission infrastructure development means that large developers and banks will not risk funding the development of a project, which, if not commissioned by 2017, has no certainty over its CFD revenue stream and its value. This combination of technical, commercial and regulatory factors that is resulting in major delays to the deployment of these three technologies means that their capability to deliver emissions reductions in the immediate decade will be severely impaired.Whilst this suite of technologies, as a whole, may be deployed in the following decade, an approach that maintains momentum in investment in technologies that are deliverable today and in the immediate decade appears to have been largely eclipsed in current energy policy.

2.5 Security of supply—the problem of the Capacity Mechanism and the Carbon Price Support: The maintenance of secure electricity supplies is vital for the economy. The build time constraints for new low carbon plant highlighted above will exacerbate a recognised medium term risk to secure supplies. The Carbon Price Support policy in 2013, coupled with a low European carbon price, has incentivised coal plant to run as baseload rather than mid-merit plant. The result is that they are using up limited run hours (under the Industrial Emissions Directive) and, therefore, are likely to be legally obligated to close during 2013, rather than being able to run until 2016. In addition, the proposed capacity mechanism has created a hiatus on all new build of gas plant. The uncertainty as to how gas plant will be rewarded under the mechanism and how new and existing plant will be treated, effectively creates a high risk for new investment. Finally, the removal of Levy Exemption Certificates (LECs) from Combined Heat and Power (CHP) plants from 2013 discourages power export from CHP. As CHP accounts for 7% of UK power generation (and 13 million tonnes of CO₂ abatement per annum), the decision by Government to discourage operation of existing CHP plant at a time of concern over generation capacity is a surprising one.

2.6 Affordability for Consumers—the problem of the CfD FIT: The CHPA has fundamental concerns over the underlying analysis of the CFD FiT and the resultant belief that it reduces investor risk and reduces the cost to consumers. The fundamental concerns are:

2.6.1 The Government’s assumptions for future energy market prices appear strongly at odds with commercial offerings for those same futures. Government energy modelling indicates persistent high electricity wholesale prices and relatively low wholesale gas prices. This model would lead to two assumptions:

— That gas power plants would be attractive to build and operate now and in the future.
— That the cost to consumers of the CFD FiT, which is based on the difference between the market electricity price and the agreed “strike-price”, will be relatively low.

2.6.2 In reality, however, such wide differences between wholesale gas prices and wholesale electricity prices do not exist (gas plant are currently standing idle due to the high gas price relative to the electricity market price) and, even if they were to exist they would not persist as suggested by the Government models: in practice these circumstances would result in the commissioning of new plant would be commissioned and operate thus increasing electricity generation and reducing the wholesale electricity price. The result of such operations would be that the cost to consumers of the CFD FiT would be higher than modelled with the accompanying risk that the consumer would be locked in to those higher prices. Under the fixed value of the CFD, falling energy prices could not be passed on to the energy customer as lower electricity prices would lead to a higher pay out under the CFD. Given that Government modelling does not account for such a falling price scenario, the EMR analysis would never reveal this affordability risk for consumers.

2.6.3 The creation of a counterparty other than the UK Government: By creating a Contract model for the FiT, the Government has created the need for a contractual counterparty, in contrast to the current small-scale FiT where contract law does not require a counterparty. Initially, it was widely assumed that the CFD counterparty would be the Government. This arrangement, however, appears to risk falling foul of EU state-aid rules if applied to nuclear generation. The Government’s response has been to seek to create a new counterparty which is currently expected to be a conceptual electricity “supplier base”. The Government, as counterparty would have had a top AAA credit rating, but a different counterparty may not have such a high rating. A lower than AAA rating would increase credit risk for investors and, therefore, the cost of capital. Given that the original justification for the selection of CFD FIT model was the effect of reducing the cost of capital for investors and therefore the cost to consumers, this change of counterparty has profound implications for the defence of the CFD model on cost grounds.
2.6.4 Additionally, if the Government places an obligation on suppliers to be counterparty to an unknown number of new generation stations, each with an unknown credit rating delivering an unknown quantity of electricity on an unknown timescale against an unknown market price, and where such an obligation may be singularly or jointly met, this situation is likely to cause deep concern among Risk Managers and Risk Committees of those companies. If suppliers were obligated to remain in the market it is reasonable to expect that they would seek to increase their profit margin through the retail electricity price so as to manage the risk of any potential defaults and open ended obligations.

2.6.5 The risk of creating obligated sellers in the electricity market and the resulting impact on price: The CfD FiT will only be paid out to an eligible generation station if that generation station were to generate power. The right to generate power is only granted once that power has been sold (in advance of generation). The result is that, to ensure revenues from the FiT (in addition to revenues for electricity) CfD FiT generators must ensure that their power has been sold onto the market. Unlike the current Renewables Obligation, the CfD provides no incentive for any of the major suppliers to purchase CfD electricity. By creating an effective obligation to generate on one side of the market with no corresponding incentive to buy on the other side of the market, generators risk becoming distressed sellers of power. Under these conditions purchasers will have the opportunity to dictate lower prices to CfD generators. This may have a twofold impact:

2.6.6 Artificially reduce the electricity market price reducing the CfD reference price and increasing the payouts to CfD generators

2.6.7 Causing developers of new CfD based plant to require a higher strike price under the CfD to compensate for the anticipated discount in the price secured for electricity generation and the corresponding loss of revenues. For market players with no supply-side business to operate as an effective hedge, this risk may put them off investing entirely.

2.6.8 In either case, these circumstances suggest that society faces a risk of a greater cost of the CfD policy than has been assumed. Any assumption that the competitiveness of the supply market will ensure that any fall in CfD traded power prices will be translated into a lower cost for the traded electricity component in consumers bills must be tempered by the reality that a major proportion of electricity will continue to be sold bilaterally. Under these circumstances there may be a lack of transparency that affords the Government or regulator little visibility to assess the efficient functioning of the market in the interest of consumers.

3. DEVELOPING A SOLUTION—A PHASED APPROACH TO EMR

Overview

3.1 As circumstances surrounding the EMR have evolved, it appears increasingly unlikely that the EMR will achieve the energy policy objectives for the coming ten years. This situation determines that a more comprehensive approach to market will be required. The factors outlined in Section 2 suggest that whilst the principal elements of EMR are seeking to create conditions that will yield outcomes in the mid 2020s they are likely to fail to address issues facing the energy system in the critical period prior to this. Hence, whilst there may be substantive value in retaining the existing EMR work streams there is also a clear need for a focus on what can be done now to ensure that the energy system is affordable, secure and reducing in carbon intensity whilst longer term solutions are in development.

3.2 Intervention is needed to ensure that the market will deliver for the shorter term. To meet this shorter term need, the CHPA recommends that DECC needs to develop a focus on deliverable pathways to achieve affordability, emissions reduction and security of supply. The current electricity market will not however deliver these aims without intervention: since the formation of the current electricity market system which operates on a short run marginal cost basis, an absence of intervention policy will lead to the construction of the lowest cost, lowest risk generation assets. In the current situation, that plant is a combined cycle gas turbine (CCGT) power station. Hence, if the Government does not want an electricity market almost entirely reliant on default investment in CCGTs then some intervention is likely to be required. The interventions may be for reasons of security of supply, carbon emissions or other concerns. To deliver government intentions, therefore, necessitates the development of either subsidies or regulation. As creating a low carbon and secure electricity system requires regulation and/or subsidy, it is vital that DECC develops a considered approach to these three key areas identified above. Without such a strategic approach, the Government is likely to see a new dash for gas which, whilst addressing security of supply concerns, will fail on sufficient emissions reduction and renewable energy deployment.

3.3 Recognising that neither the current market nor the current EMR proposals will deliver on the key aims of energy policy in the appropriate timescale, DECC needs to develop a focus on three areas of progress for the shorter term:

(1) Renewable electricity generation.
(2) Energy efficiency.
(3) Optimum deployment of new gas generation.
3.4 Correctly approached, this combination of technologies could continue to see emissions reductions and increased renewables whilst the EMR process for larger-scale, low-carbon generation technologies persists.

3.5 Combining delivery of gas generation, renewables and energy efficiency. There are two key actions that need to occur to deliver gas, renewables and energy efficiency:

— Drive the development of the most efficient gas generation possible.
— Maintain simple and accessible support for renewable generation past 2017.

Drive the development of the most efficient gas generation possible

3.6 Ensure the most efficient gas plants are built and operate. With government recognition that there is a need for more gas generation on the system, the lead option to continue to reduce carbon emissions whilst facilitating new gas build should be the development of new gas fired combined heat and power (CHP) generation, whilst securing the operation of the existing fleet of plant.

3.7 CHP represents the optimal use of any input fuel and will reduce emissions by up to 30% compared to separate generation. The UK currently obtains 7% of electricity supplies from CHP, reducing emissions by some 13 million tonnes of CO₂ per annum and reducing UK gas imports by 5%. Despite the benefits of CHP the chancellor saw fit to remove the operational subsidy for CHP from 2013 and the industry anticipates a reduction on CHP outputs (and a consequential increase in CO₂ emissions and gas imports) from 2013. In addition, the removal of support has all but halted new CHP development. The timing of the confirmation of removal of support for CHP came days after the announcement of the new Gas Generation Strategy in which Edward Davey the Secretary of State stated “we can’t take our foot off the gas for some time yet”. The removal of support for CHP works directly counter to both the UK’s security of supply and carbon commitments.

3.8 CHP is a proven, reliable, cost-effective energy-saving approach, capable of delivering a step-change reduction in an industrial site’s primary energy demand of up to 30%. Investing businesses benefit from enhanced competitiveness through improved efficiency, whilst Government (which foresees a potential doubling of CHP capacity to 2020) reaps the benefits of cost-effective CO₂ abatement and greater energy security.

3.9 As an energy efficiency technology, CHP reconciles major issues including: the apparent tension between emissions reductions and industrial competitiveness; the need for gas to maintain security without compromising emissions reductions goals; and the need to minimise the risk of rising energy prices.

Ensure bankable support for renewables to prevent a hiatus in investment

3.10 Substantial deployment of renewable energy is needed but the lack of bankable support for renewable generation commissioning after 2017 and for renewable CHP post 2015 means that large scale projects are on hold as developers cannot be sure that they will be commissioned and operating in time to secure eligibility for the present subsidy regime.

4. UNDERSTANDING THE MARKET LIMITATIONS

4.1 As noted above, an unconstrained electricity market will tend to bring forward only CCGT plant. Interventions are needed to move away from the default. Under these circumstances any interventions should be targeted to address the specific factors that act to constrain development and operation of efficient gas fired CHP does and which may also constrain new renewable generation during the period when Government is developing a new incentive scheme. These are both addressed below.

Constraints on CHP development

4.2 As an energy efficiency technology that makes optimum use of expensive fuels, CHP might be expected to be the default choice for consumers with a heat and power demand; often reflected in the query “if CHP is so efficient why does it not get built?” Recent experience demonstrates that this truism is evidently not the case: heat users often preferentially choose simple boilers and the power industry routinely develops power-only generating stations. The case for policy support reflects the need to bridge this gap between opportunity and practice.

4.3 The principal reason for CHP remaining outside of the mainstream of energy investments lies in a combination of market failures and market distortions. The Government’s Electricity Market Reform proposals introduce a complex set of changes that will add further layers of intervention and distortion onto a market which already suffers from a lack of transparency and liquidity. Any support for CHP must be targeted to
address these market distortions and recompense the CHP operator or developer to ensure that CHP is a viable commercial proposition for investment and continuing operation. There are four key areas where the market today does not function effectively:

4.3.1 **Existing sites for power generation have a competitive advantage over new sites.** New power generation stations are generally proposed on existing or legacy sites where power stations have previously operated. These sites, generally in place before privatisation, have existing infrastructure in place (power lines, fuel supply routes etc) thereby minimising development costs. In addition, the existence of a power station ensures that the likelihood of planning barriers and costs being an issue are minimised. By contrast, new CHP plants are sited based on heat demand not electricity infrastructure. Sites of new CHP plant are often in areas where the electricity grid—configured to meet the needs of mid-C20th Britain—is limited in its ability to accommodate new generation assets, further increasing project complexity and costs. In addition, the prospect of a new power station at an industrial site may be subject to greater planning challenges, adding both cost and risk to the development.

4.3.2 **The balance of cost and risk is weighted against CHP developers.** This cost and risk balance arises in two areas: electricity market interaction and heat off-take.

4.4 Developers of new power plant do so purely to supply electricity to the market or sell bilaterally to energy suppliers. The electricity market and its regulations are central to their business model. Unlike the developer of a power station, a CHP plant primarily operates to meet the heat and power demand of manufacturing a product such as paper, soda ash, sugar or petrol. To ensure maximum CHP efficiency and emissions reductions, plant design will usually result in the export of excess power generation to the electricity grid: a major step that requires active engagement with the electricity market rather than simply passive consumption. For a CHP operator, therefore, electricity market interaction is a secondary activity and the electricity market viewed as inherently risky and “foreign” to business-as-usual. By contrast, the electricity market is fundamental to the business of large-scale centralised plant and vertically integrated companies (with generation and supply businesses). The vast majority of smaller market operators are only present due the incentives such as the Renewables Obligation. Without incentives, smaller generators simply cannot compete in the market as structured currently.

4.5 Where a CHP plant is developed by a 3rd party ESCO, heat supply represents a major revenue line. The credit risk of the industrial site, and ultimately the risk that the industrial consumer may cease operations, present costs and constraints for new projects.

4.5.1 The additional capital cost of investing in CHP and the substantial risk of selling a secondary product into an unknown, complex and illiquid market discourages many potential CHP operators from investing.

4.5.2 **Emissions reductions benefits do not accrue to CHP operators.** CHP reduces emissions compared to separate generation by at least 10% and commonly up to 30%. The practical effect of CHP operation is to displace the emissions from grid electricity—emissions which arise at a central power station, far away from the industrial site. Whilst UK net emissions fall as a result of CHP installation, gross emissions at the CHP site will rise as a new process (electricity generation) now occurs on-site. The emissions reductions of CHP are recorded in Government statistics but, without express support, the value of these reductions accrue to the wider UK economy not the CHP operator.

4.5.3 **Security of supply benefit does not accrue to CHP operators.** As with emissions reductions, the more efficient use of fuel to meet heat and power demand reduces primary energy demand. Reducing primary energy demand directly improves security of energy supply but, once again, the benefits accrue to the wider UK economy. CHP utilisation currently reduces gas demand by around 3.5bcm, equivalent to 5% of net imports. As noted above fuel consumption will rise at a site that installs CHP and, therefore, it is vital that the security of supply benefit is credited to the CHP operator to ensure a fair market.

4.6 There is now a pressing requirement to address these market failures. If these failures are not addressed then the pattern of generation that we can expect to see in the period of the next 10 years will compromise emission and security (efficient use of resources) goals; EMR presents the only timely opportunity to do this. Furthermore, gas CHP on industrial sites can, subject to design, offer highly flexible capacity services at far higher efficiencies than other peaking plant.

4.7 **A simple incentive for both new and existing CHP today can also ensure efficient flexible generation for the future.** Countries such as Germany and Belgium have substantive support in place for CHP and this is leading to a major deployment. In the case of Germany a time limited feed in tariff for CHP is in place to achieve a target of 25% of total electricity generation by 2020.

4.8 It is important to note that the Government’s modelling of CHP uptake is consistently over-optimistic as is borne out by the actual CHP data in the Government’s statistics. Whilst there may be a number of causes for this, a key factor may be the same concerns raised previously in this submission regarding the energy price assumptions used by the Government in their modelling in Section 2 of this paper.
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Why there is a risk that new renewable will not be built

4.9 The Government needs to ensure bankable support for renewables to prevent a hiatus in investment whilst the CfD is developed. Substantial deployment of renewable energy is needed but the lack of bankable support for renewable generation commissioning after 2017 and for renewable CHP post 2015 means that large scale projects are on hold as developers cannot be sure that they will be operating in time.

4.10 The development of the CfD is complex making it both slow and of significant concern to smaller scale developers of renewable generation projects. Working in collaboration with other parties as part of the Ministerial Distributed Energy Contact Group, the CHPA has identified a number of concerns facing the development of smaller scale renewables under the CfD FiT proposals. The overriding concern is that the substantial additional risks associated with operating within a CfD FiT will need to be transferred to a third party better able to manage that risk. The result of the transfer of risk will be an increase in cost (or reduction in revenues) to the developer and reduction of project viability.

4.11 The combination of challenges for larger renewable projects commissioning before the RO expires and for smaller developers having concerns over the CfD mechanism, creates a strong case for ensuring simple support is available whilst the CfD is developed and implemented. The Government’s proposed overlap of three years (2014–2017) is insufficient as this will reduce if there were delays to the CfD development and because it will take time for developers to become accustomed to the CfD following its implementation. The current proposals will cause a hiatus in development when deployment is needed.

5. Recommendations

5.1 As already noted the circumstances surrounding the EMR have evolved so that the what had been envisaged at the start of the EMR process, in terms of build times and the cost effectiveness of the proposals are not necessarily the case now. As a direct result, the present EMR proposals are not addressing the immediate challenges facing the energy system and may risk creating a hiatus in low carbon and renewable investment over the coming ten years. To address this risk an alternative approach is needed to deliver the near-term goals in a coordinated and efficient manner that is nonetheless consistent with longer-term policy goals.

5.2 The urgency of the situation demands that whatever is proposed be a simple and workable solution. To achieve Government’s aims any solution needs to specifically incorporate both renewable and gas fired CHP. The CHPA, therefore, recommends that Government gives urgent consideration to a proposal for extending the current small scale FiT, as the most effective means of achieving these criteria.

5.3 The current small-scale feed in tariff already has provisions for supporting gas-CHP and renewables but these both have capacity limits of 5W and 5MW respectively. A very simple change to primary legislation could remove these capacity limits. The procedures for funding the FiT are already in place and so little, if any change would be required there. In terms of levels of support, the Government already has support levels for renewables determined under the RO and is in the process of reviewing support for CHP ensuring that support should be relatively simple to determine.

5.4 Such a change for the current Feed-in-Tariff need not distract from other elements of the EMR process. The change would, however, provide the framework needed to ensure that energy security, affordability and emissions reductions were all pursued during the 2010s and early 2020s rather than creating a hiatus.

6. Concluding Remarks

6.1 The CHPA would welcome the opportunity to explore these ideas at an oral evidence session to the committee.

June 2012

Written evidence submitted by Calor Gas Ltd

1. What is the size of the butcher’s bill?

1.1 The Secretary of State for Energy in his Foreword to the Draft Energy Bill talks of the need for investment of £110 billion in electricity generation and transmission this decade alone. He does not estimate the cost beyond that in the Foreword. The Draft Energy Bill is designed to engineer “electricity market reforms to incentivise this investment efficiently” (Foreword).

1.2 Ofgem’s figure is nearly double that: “Ofgem’s Project Discovery, published in October 2009, highlighted the likelihood that energy bills will increase further over the next 10–15 years. We estimated that up to £200 billion of investment might be required by 2020 alone.” (Energy Affordability, published by OFGEM, 30 March 2012). This £200 billion is the most commonly—if rather loosely—used figure for the investment required in the UK’s energy infrastructure.

1.3 This £200 billion figure is consistent with OFGEM’s Project Discovery projections and with the original Draft National Policy Statements for Energy and was based on what we would regard as an optimistic view that grid peak demand would remain flat at 60GW to 2020. But, in the Revised NPS (October 2010), postdating
Project Discovery, the full implications of a pure electricity play including the electrification of transport and heat were glimpsed for the first time: “Generation capacity will need at least to double to meet this demand and, if a significant proportion of our electricity is supplied from intermittent sources, such as wind, solar, or tidal, then the total installed capacity might need to triple” (para.1.66).

1.4 This is an astonishing admission, with no doubt a similarly astonishing, and not yet revealed, cost. We believe that the commonly quoted £200 billion figure relates to the original target and not to the doubling or tripling of existing capacity. If energy companies do find the resources to invest in doubling to tripling the generation capacity ultimately they must hope that the consumer of their electricity will pay for the increased cost of their electricity. We should have transparency as to what that will mean for the consumer and taxpayer by way of increased bills and subsidies.

1.5 In February 2012, David Clarke, the Chief Executive Officer of the Energy Technologies Institute in giving the Biennial Lecture to the Worshipful Company of Engineers stated that the country’s electricity use was generally between 30GW and 50GW in winter and summer. However, the amount of gas used for heating reaches a peak six times that level in the winter. He said that meant that a switch to electric heating would mean building an electricity distribution network six times larger than the existing one. “That would cost much more than six times the £95 billion cost of replacing the current network,” he said.

1.6 So, can The ECC Select Committee extract from Government the true likely total cost of the requisite energy infrastructure by 2050 under current policies? Is it £200 billion, £570 billion or more? This is a critical figure to know when addressing the problem of energy affordability. Unless we know how much energy infrastructure is going to cost we are lacking the most basic information. The Government must come clean on the size of the bill needed to underpin its energy and climate policies.

2. To what extent, and with what damage does the Draft Bill move away from competition as an instrument of policy?

2.1 Paragraph 80 of the Draft Bill refers to the energy policy of the 1990’s “successfully using competition to drive down energy prices”. Clause 41 of the Bill, as the Explanatory Notes indicate, refers to the duty of the Secretary of State and the Gas and Electricity Markets Authority (GEMA) to carry out functions in the manner best calculated to protect the interests of existing and future consumers, wherever appropriate by promoting competition. There are two aspects of Government policy being deployed which are by the nature, and by explicit intent, anti-competition—the use of subsidy and the cherry-picking of technologies. We can see a role for limited subsidy, particularly where there is market failure, but subsidies can be so distorting that they can kill true competition. The Select Committee may be minded to establish how far Government subsidies, costly in themselves to fuel consumers since they largely fund them, are anti-competitive. The cherry-picking of Government of very expensive technologies such as offshore wind—a report for DECC by Mott MacDonald, “UK Electricity Generation Costs Update” (June 2010) estimated the levelised cost of offshore generation to be £157–186/MWh, roughly twice that for onshore wind (£94/MWh). Offshore wind was by far the most expensive technology that MacDonald compared with gas (£80/MWh), coal with CCS (£104.5/mWh), nuclear (£99/MWh) and onshore wind (£94/MWh). Offshore wind has high and uncertain capital costs, carries high technology risks and high operational and maintenance risks—all admitted by HMG in a recent consultation paper. Why are we subsidising such poor value for money in such a risky and intermittent technology?

2.2 Government is indirectly cherry-picking technologies in other ways, such as enforcing changes in the Building Regulations. Indeed, HMG appear set on a pure electricity play in rural areas, gambling that heat pumps will prove to be sustainable (when all the experimental evidence collected by Government to date indicates they will not for the most part), and that the grid can be decarbonised. Insofar as fuels are removed from the market by Government policy (no more coal or oil power stations are likely to be built; and, LPG may be expelled from the new build market in 2013, for example). The Select Committee may also be minded to establish the extent to which Government cherry-picking certain technologies, and excluding others, indirectly reduce competition and thereby increases prices.

3. How badly will consumers be hit?

3.1 The first paragraph of the Secretary of State’s Foreword to the Draft Bill states, “It is essential to minimise the cost to the economy, to consumer bills and to taxpayers”. The self-inflicted bill is not insignificant. DECC’s own estimates for the impact on electricity prices in 2010 arising from its energy and climate change policies is +27%. The sticking plaster on this otherwise crippling blow to family finances was the claim by Mr Huhne in 2011 that by 2020 on average households would be paying on average 7% less to heat and power their homes because of policies taken in the round. Unfortunately, this average hides a big variation between households, and using DECC’s own questionably optimistic figures the Renewable Energy Forum calculated that 65% of households would be net losers from the policies ie the few will be gainers at the expense of the many (“Shortfall, Rebound, Backfire”, published by the Renewable Energy Forum, 21 May 2012).

3.2 In its January 2012 Research Note, Policy Exchange came to the same conclusions—two thirds of households will be worse off because of DECC policies. Policy Exchange estimated the full impact of renewable energy subsidies on an average household by 2020 (through bills, tax and costs of products and services) to be £400 per year—equivalent to 2.5p on VAT. This implies that by 2020 the total net cost (not just...
through energy bills) to the average household of carbon and renewable policies will be equivalent to around 15% of the (without policies) energy bill.

3.3 We are concerned about the potential economic impact of the Government’s energy and climate policies on social cohesion within the UK. OFGEM states there were 5.2 million households living in fuel poverty in 2009 in Great Britain (Energy affordability, op.cit). Despite a raft of measures under successive Governments the trend has been remorselessly upwards from 1.2 million in 1994. Whatever measures applied by Government to date, they are clearly ineffective. The going is, if anything, getting tougher. OFGEM has predicted a rise of up to 60% domestic fuel bills (Evidence to Energy and Climate Change Committee 2 December 2009). The Renewable Energy Strategy admitted: “Poorer households are likely to spend a higher proportion of their income on energy and so increases in bills will impact more on them”.

3.4 Professor Hills in his recent Fuel Poverty Review has proposed a new definition of fuel poverty to reduce this embarrassing figure, but redefining it will not lesson the eventual quantum of misery inflicted by a Government begging sections of its electorate. As Hills states, “In our central projections, the key fuel poverty gap indicator will rise by more than 50% between 2009 and 2016”. Such policies risk social unrest, and run against the Prime Minister’s pledge that green energy “must be affordable” (25 April 2012). Redefinitions may ease political pain, but not the practical experience of people struggling with their energy bills.

3.5 Redefining the parameters will not hide the damage done to large numbers of households. This is specified in two paragraphs of OFGEm’s “Energy Affordability” (op. cit):

2.2 Difficulty affording fuel bills can have a number of impacts on households, including having to limit the amount they spend on other essentials such as food and living in a cold home because they fear the cost of putting the heating on. The worry of meeting fuel bills can also have psychological effects. This can be compounded where low income households have other concerns to deal with such as ill health, infirmity and disability, caring responsibilities, poor housing conditions and isolation.

2.3 Difficulty affording fuel bills can also have more extreme consequences. There were approximately 25,700 excess winter deaths in England and Wales during winter 2010–11. Excess winter deaths have a number of causes including, for example, levels of influenza during a particular winter. Estimates therefore vary as to how many of these are related to fuel poverty. The World Health Organisation (WHO) has estimated that around 40% of excess winter deaths relate to inadequate housing leading to cold homes while the Hills interim report recognises that even if it was only 10% that would still be 2,570.”

RECOMMENDATIONS

— The Select Committee should establish an estimate of the total cost of the required energy infrastructure under current energy and climate change policies by 2020, 2030, 2040 and 2050, revising the now apparently outdated Project Discovery figures.

— The Committee may also wish to clarify how far Government subsidies are anti-competitive and drive up fuel prices; and, how far Government cherry picking certain technologies and in effect excluding otherwise viable technologies from the market are having an inflationary effect on fuel pricing.

— The regressive nature of the Government’s energy policies should be re-assessed. Redefining “fuel poverty” may save a degree of political embarrassment, but the current trajectory of fuel bills is such that it will bring misery for millions more, and even death for at least thousands.

June 2012

Written evidence submitted by Tom Greatrex MP, Shadow Energy Minister

In response to your call for evidence, we would like to provide, in outline terms, the perspective of the Official Opposition on the Draft Energy Bill, to contribute to the pre-legislative scrutiny work which is being carried out by the Energy and Climate Change Select Committee.

The Official Opposition recognises the need to reduce our carbon emissions and secure the UK’s energy future in an affordable way. We will work constructively with all interested parties in scrutinising the Draft Bill, holding the government to account for the measures it contains and will seek to improve the Bill presented to Parliament following pre-legislative scrutiny by amendment where appropriate.

However, we have a number of concerns about the omissions from the Draft Bill, which the government may or may not intend to include in the Bill to be laid before Parliament later this year, and where further detail is required to provide the clarity and predictability that many potential investors in all forms of technology indicate are required before those decisions are able to be taken.

Further, we are concerned about the timetable to which your Committee is being asked to work to complete the pre-legislative scrutiny of the draft Bill. Given that the Department for Energy and Climate Change initiated a consultation on electricity market reform (EMR) 18 months ago, it is unfortunate that it seems the Committee
will only have five sitting weeks in which to hear evidence and complete a report on a set of proposals that are both complex and of crucial importance to the pressing need to meet energy policy challenges. Given there are guidelines in place for the amount of time to be given to scrutinising draft legislation, and the likelihood of the need to take detailed oral evidence from a number of sources, we hope that your Committee feels able to complete its task in the time available and seek further time, including possibly in the September sitting, if a number of concerns arise during the process of your scrutiny.

**Reform of the Energy Market in the Interest of Consumers**

While a significant proportion of the Bill is ostensibly designed to reform the electricity market, we remain concerned that there is scant content in the Draft Bill to reform the way the electricity market operates from the perspective of the interaction of the consumer with electricity retailers.

We do not believe that reform of how electricity is generated can be separated from how this is supplied to consumers.

As you know, at present the main energy companies dominate the market by generating, trading and retailing electricity. Ninety-nine percent of consumers’ electricity and gas is supplied by just six firms. These same companies also generate up to two-thirds of the UK’s electricity. This lack of competition means that the large energy companies continue to make significant profit whilst hard pressed consumers and businesses face rising bills.

We believe that a system should be introduced which imposes an obligation on energy generators to sell their electricity into a pool where it can be bought through an auction. This would allow new entrants to participate in the market and end the dominance of the largest companies at the expense of both the consumer and smaller companies.

In addition to a pooled system, if the consequence of the mechanisms described in the draft Bill is that there will be further pressure on retail prices paid to consumers by energy suppliers, then energy companies should be required to provide more transparent information about the relationships between their generation and supply businesses and the commercial interaction between those elements of their businesses. Consumers should be able to know the cost to the energy company of electricity generation and supply, the cost per average consumer to the company, where the profits made by energy companies come from, and where these profits go—whether to pay shareholders, executives or to be reinvested in our energy infrastructure. There should therefore be a statutory obligation on energy firms to be fully transparent in the relationship between the different areas of their operations. For example, opaque contracts between the retail and generating arms of the same energy company should be clarified to ensure higher margins are not hidden through transfer pricing.

Further, we believe there should be consideration given to a statutory obligation on energy firms to simplify tariffs so that they are easier for consumers to scrutinise. We propose a two pronged approach to tariff simplification: a daily standing charge and a cost per unit of electricity charge. A daily standing charge would cover the cost of delivering the energy to consumers’ homes. This is the cost of being connected to the gas pipes and electricity cables. This cost would be set by Ofgem and would be the same for all energy companies. The cost per unit element covers the amount of gas and electricity consumers use, and includes any discounts they get for direct debit. Energy companies could decide their own unit price, meaning consumers could easily compare by unit price which was the cheapest deal for them. The ‘daily charge plus unit rate’ model has already been proposed by Ofgem for standard/evergreen tariffs—we believe it should be extended to cover all products in the market. This should also force suppliers to be as efficient as possible in providing a service, as they won’t be able to recover a large amount of their costs through charges that consumers cannot avoid.

We believe that in the draft Bill the government has missed an important element in their desire to fundamentally reform the way the energy market works in pursuit of stated policy objectives, so that reforms work in the interests of the consumer as well as providing impetus for investment in energy infrastructure.

**Contracts for Difference (CfD)**

Given the prominence given by the government to the Contract for Difference mechanism described in the draft Bill, there is a concerning lack of detail as to how it is envisaged that intervention will work in practice, and the associated fundamental issues of the strike price(s) and explanation for how the contractual relationship between generating companies and the counterparty will work, or even who the counterparty is and how that will be underpinned in legislation. While we note this is an issue which has been the subject of earlier discussion between your Committee and the Energy Minister, we are concerned that the lack of clarity in what some have described as the most important element of the Draft Bill will impact negatively on imminent and future investment decisions across the full range of energy technologies.

For example, on the length of CfD for different technologies, Annex B published alongside the Draft Bill merely sets out DECC’s ‘emerging thinking’ and notes that “analysis is currently being done”. Given that the Department for Energy and Climate Change launched a consultation on EMR in December 2010, your Committee published a report on EMR in May 2011, the government published a White Paper on EMR in July 2011, and then published a technical update on EMR in December 2011, we would have thought the government has had ample opportunity to clarify its thinking and conclude its analysis.
Further information is also required on how the reference and strike prices will be determined, how often these will be reviewed, the length of contracts and how contracts will be implemented.

This lack of information could be off putting for potential investors in low carbon technology in the UK. While we note that EDF Energy has publicly indicated that a final investment decision on Hinkley Point C will need to be made before the end of this year, there is similar concern amongst companies considering investment in other low carbon technologies and those institutions from which they will seek to secure funding for those investments. While it is unsurprising that much of the public comment has been on prospects for new nuclear, there is real concern that without sufficient detail on how CfD will work, it will not only be EDF that consider they are not in a position to make informed decisions which could have a significant impact on the UK’s energy future.

There is also understandable concern that whilst energy suppliers will recoup the costs of paying energy generators from the consumer when the reference price is lower than the strike price, it would appear that there is no mechanism for ensuring that consumers see the benefit when the situation is reversed.

Some will argue that competitive pressure will ensure that consumers do not lose out, however we believe it is a lack of effective competition at present that has resulted in an energy market that is not working in the best interests of consumers. The failure of the Draft Bill to open up the market to new entrants and improve competition does not inspire confidence that competition will work in the interests of consumers in relation to the CfD mechanism.

DEMAND REDUCTION

By the Secretary of State for Energy and Climate Change’s own admission, the Draft Bill contains no measures on demand reduction. In an interview with the Daily Telegraph on 26 May 2012, the Secretary of State stated that the government has “not excluded it from the final Draft Bill, but we haven’t found a way yet to do it.”

This position is of some concern, given the chaos surrounding the government’s current energy efficiency and demand reduction measures.

The Government’s flagship energy efficiency scheme the Green Deal is currently well behind schedule. Secondary legislation is yet to be passed, no Green Deal assessors have been trained and little information is available on crucial factors such as incentives and interest rates.

Worryingly DECC’s own impact assessment shows that the scheme will only reach two to three million homes, falling far short of the required number to meet the UK’s carbon reduction targets and precipitating an 80% drop in the cavity walls being filled. In addition the new Energy Company Obligation (ECO) to be introduced alongside the Green Deal is a regressive measure, which will only lift a fraction of households needed out of fuel poverty given the scale of this problem.

Given this, there is a clear need for further measures to encourage reduced household consumption and support hard pressed families struggling to meet the cost of rising energy bills.

SUMMARY

The Official Opposition will work constructively to ensure there is meaningful examination of the provisions of the draft Bill, both to inform Parliamentary consideration of the Bill that will emerge later this year and its legislative process and to ensure that where we consider there may be shortcomings that can be addressed by tabling amendments to improve the Bill.

We will obviously take careful note of the pre-legislative scrutiny process and your report on the draft Bill, but note at this stage that the omission of measures to radically reform the energy market to redress the current imbalance in favour of the consumer is of concern, as is the lack of detail on important aspects of the mechanisms included in the draft Bill. We hope that these are areas your Committee will seek to interrogate during the intensive period of pre-legislative scrutiny ahead.

June 2012

Written evidence submitted by Oil & Gas UK

INTRODUCTION

Oil & Gas UK is the principal trade association representing the offshore oil and gas exploration and production (E&P) industry in the United Kingdom, with over 250 members ranging from the largest, well known international oil and gas companies through the independent operators and utilities with E&P subsidiaries to an extensive supply chain covering all aspects of E&P activities. We are pleased to be able to submit this evidence to the Committee about the reform of the electricity market.

We fully support the government’s desire to reduce emissions of GHGs in economically efficient ways and to encourage investment that will achieve this objective, coupled with securing the country's energy supplies
in a manner which is both affordable for consumers and keeps the economy competitive. We also understand the government’s desire to end some of the investment uncertainties which are currently evident in the electricity generating market, in particular.

It is worth noting that such uncertainties have not been evident in gas, with perhaps the exception of storage where the economics is currently difficult. Gas has seen multi-billion pound investments in new supplies and infrastructure in the period 2005–10 which stood the country in good stead during the severe weather conditions experienced during the winter of 2009–10 and the early part of the winter 2010–11. According to National Grid, of the ten days of highest demand for gas ever recorded in Great Britain, nine occurred in 2010, with three in January and six in December. In other words, the gas market has worked, so there may be lessons from it which are applicable to electricity.

It is worth remembering at the outset that government, both in the EU and UK, has three over-arching policy objectives:

(i) reducing emissions of GHGs (by 80% between 1990 and 2050);
(ii) security of energy supplies;
(iii) affordability, with which comes economic competitiveness.

**PRICE OF CARBON**

The underlying difficulty is that, currently, there is a lack of confidence in the price of carbon. This is meant to be set by the market, through the EU ETS, but the price has been undermined by the consequences of recession, other EU obligations such as the renewable energy targets and the lack of signals about what will happen to the EU ETS after 2020. It ought to be the mechanism for setting the price of CO$_2$ through the market in the longer term, but it is not clear whether this will be the case or not. In these circumstances, it becomes difficult for companies to plan their long term investments. This requires attention at an EU level.

**MULTIPLE REGULATION**

The picture has also become clouded by the number of initiatives and instruments which have been introduced in recent years or are under consideration: CCL/CCAs, EU ETS, ROCs and CRC EES in the former category and the RHI, a carbon price floor starting in April 2013 and the three measures (Contracts for Difference, Capacity Mechanism and Emissions Performance Standard) proposed under the reform of the electricity market (and in this draft Energy Bill) in the latter. Ensuring cohesion across all these measures must be a priority.

**CONTRACTS FOR DIFFERENCE**

Determining the counter-party to the CfDs will be of crucial importance. A further, significant concern is that the CfDs will be set to cover the difference between “strike” prices (to be agreed) for various types of power generation and the open market price for electricity. However, an open market price will be determined under narrowing and increasingly variable, if not volatile, conditions as ever more generation, be it nuclear or renewable, is supported by CfDs and much less generation is left to be contested in a normal, competitive manner. This may well make it difficult to set a reliable open market price for electricity in future.

**CAPACITY MECHANISM**

With more intermittent power generation being connected to the electricity grid, it becomes increasingly likely that a capacity mechanism will be needed to stabilise the grid and provide back-up generation. Beyond pumped storage, gas fired plant is best placed to do this, because of its low capital cost and generating flexibility. Just how payments for capacity and payments for electricity generated will interact is far from clear, however, and this will need to be resolved.

DECC has also announced that it will undertake a review of the role of gas in power generation. This is a most welcome sign that the Government has now recognised how important gas will be in future in order to keep customers reliably supplied with electricity.

**CARBON PRICE FLOOR**

While it may be understandable for the government to introduce a price floor for carbon, it is likely to have mixed results. Firstly, it will help undermine the EU ETS and, secondly, within the EU as a whole it will not reduce emissions, because, as far as power generation and other energy intensive industries are concerned, these are limited by the EU ETS within an overall cap set for all 27 Member States (MSs). Therefore, the Carbon Floor Price risks raising the cost of electricity in the UK while reducing the need to abate some emissions of CO$_2$ within the other 26 MSs.

**EMISSIONS PERFORMANCE STANDARD—CARBON CAPTURE AND STORAGE**

The proposed EPS is sensibly designed in the first instance to ensure that gas fired power can be built to help replace the very large amounts of existing generating plant which will have to be closed in the next 10–12
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years, as well as ensure back-up for intermittent renewable generation. However, the Committee should note
that a limit of 450 grams of CO\textsubscript{2} per kWh will allow CCGT, but not OCGT\textsuperscript{74} generation; OCGTs are the
cheapest and most flexible form of gas fired power plant and best suited to short term or peak requirements.

Carbon Capture and Storage is widely seen as one of the main ways of reducing CO\textsubscript{2} in conventional power
generation. However, CCS is yet to be proven on a commercial scale. It is encouraging to see ministers
promoting CCS with gas for one of the planned demonstration projects.

CONCLUSIONS

We would encourage all parties to concentrate on simplification where ever possible. There is a material risk
that the complexities of having so many measures and instruments will become unmanageable and counter
productive. A price for CO\textsubscript{2} is becoming less and less likely to emerge through normal market mechanisms,
with the risk that this in turn will encourage ever more governmental intervention and the creation of more
instruments.

June 2012

Written evidence submitted by DONG Energy

1. DONG Energy Company Profile

1.1 DONG Energy is a leading energy company operating in Northern Europe and headquartered in
Denmark. It is heavily expanding its UK business in renewable energy and Exploration and Production, and
has invested around £4.2 billion in the UK since 2006. DONG Energy has a strong presence across the energy
value chain, including Exploration and Production, Generation (thermal and renewable), Energy Markets and
Sales. DONG Energy has recently acquired a gas retail business in the UK.

1.2 By 2020, DONG Energy aims to have reduced its CO\textsubscript{2} emissions per kWh of generation by 50%, and
by 85% by 2040 from a 2006 baseline. In order to achieve these targets, significant growth has been focussed
on Renewable Power Generation. The United Kingdom has a major part to play in this development.

Exploration and Production (E&P)

1.3 DONG Energy is one of the largest acreage holders in the West of Shetland Region and a partner in the
recently sanctioned Laggan-Tormore gas development. The company’s first operated well in the UK (the
Glenlivet gas discovery) was drilled in the West of Shetland in 2009. It has interests in a further eight
discoveries. Aside from the UK, DONG Energy is the operator of nine licences in Denmark, six in Norway
and two in Greenland.

Renewable Power Generation

1.4 DONG Energy is one of the most active offshore wind operators and investors in the United Kingdom.
The company currently operates 719MW of offshore wind generation comprising of five offshore wind farms
(Gunfleet Sands 1&2, Barrow, Burbo Bank, Walney). It has approximately a 50% share of a further 1289MW
currently under construction (London Array, Lincs and West of Duddon Sands) as well as an offshore
demonstrator site (Gunfleet Sands 3). It also possesses a strong pipeline of potential future renewable projects
in UK, including Westermost Rough, Extension projects, interests in Round 3 including the Irish Sea zone and
the Heron Wind and Njord projects in the Hornsea zone.

Thermal Generation

1.5 In thermal generation, DONG Power UK has a 824MW gas fired power station at Severn in South Wales.

Gas Sales

1.6 DONG Energy has recently acquired a gas sales business. DONG Energy Sales supplies approximately
900 million therms per annum, equating to 11% of the industrial and commercial gas market share in the UK.
This acquisition represents further investment in the UK energy sector by DONG Energy and supports the
strategic platform for DONG Energy in the UK by tying together our assets with a retail downstream business.

2. Electricity Market Reform

2.1 DONG Energy continues to support the package of measures contained within the Government’s Energy
Market Reform. Electricity Market Reform (EMR) project should create a framework for investment that is
long-lasting, stable, predictable and transparent. This is central to allowing the UK to continue to attract
investment into renewable generation. DONG Energy has been successful in achieving this, being a leading
company in attracting external finance to offshore wind projects. It believes this can be continued under the
reforms, a position that may even be strengthened by the price certainty of a Feed-in Tariff with a Contract for

\textsuperscript{74} CCGT = Combined Cycle Gas Turbine and OCGT = Open Cycle Gas Turbine
Difference (CFD FIT) over the RO. However, important details remain to be resolved and it is essential that resolution is achieved on key design details in order to maintain market confidence.

2.2 EMR must deliver a clear and transparent process for determining the level of support and the allocation of that support in future. It is clear that there is not unlimited funding available and it is right that projects should be competitive. However, the risks undertaken by the developers should be clear and manageable to ensure the expected cost of capital improvements by introducing a CFD FIT are achieved. Here, an important issue relates to the costs that developers have to commit prior to having certainty that a project will receive necessary consents and a CFD FIT. An increase in allocation of these costs and risks to the project will have a negative impact on the cost of capital.

2.3 Following the publication of DECC’s draft Operational Framework and the draft Energy Bill on 22 May, DONG Energy has four particular areas of concern discussed in detail below.

3. Timetable for EMR

3.1 DONG Energy welcomes the draft Energy Bill and the delivery timetable for implementation published alongside the draft Bill. This is a significant step towards successful implementation of EMR. However, despite the progress made, there is considerable work still required to develop the detailed design of the various policy instruments and associated processes; in particular for the CFD FIT and Capacity Mechanism. It is essential that the timetable is now held as any delays will damage investor confidence and cause delay in delivery of new renewable generation. In addition, to avoid delays to realisation of projects, DECC’s “FID Enabling” initiative must prove to be effective.

3.2 However, DONG Energy also notes that timely implementation should not come at the expense of good legislation. There is some concern that the current drafting of the Bill gives the Secretary of State wide-ranging and enduring powers to change industry agreements. This, if it is implemented, will introduce significant regulatory risk and uncertainty for investors. If this is the case, or is perceived to be the case, then the targeted improvements in cost of capital are less likely to be achieved. Previously, when seeking to achieve similar outcomes, the Government has left the market to deliver a scheme that it has directed through relevant licence and Code changes. This latter approach allows proper scrutiny of changes and as such has less regulatory risk.


4.1 DONG Energy agrees it is important for offshore wind to become cost competitive with other generation technologies. It recognises that there is an obligation on the offshore wind industry to reduce costs in order for the technology to be viable in the long-term. Within the company, DONG Energy is actively pursuing a programme of technology development and business efficiencies to ensure this target is met. Additionally, it is conscious that there will be a limit on the overall level of support that will be available for low carbon generation. However, the proposals for allocation rounds, with implicit caps on volume for specific technologies, raises significant concerns.

4.2 The UK has a world-class wind resource but in order to fully exploit this, reducing the cost of energy of offshore wind is a priority. Cost reduction requires not only technological innovation but also the ability to create a competitive supply chain, economies of scale, standardisation and optimisation of installation methods. This can only be achieved if there is sufficient scale in the development of offshore wind.

4.3 For offshore wind projects, new sites are being developed that are larger and further offshore. This increases the development expenditure and the need for new technologies such as HVDC transmission infrastructure and deep water foundations. In addition, there are supply chain constraints which require early commitments to be made if planned delivery dates are to be met. These early orders come with very significant cancellation liabilities that currently have to be borne by the developer, over and above those that are separately required from developers to underwrite grid connection liabilities.

4.4 The current risk profile for development spend prior to consent and final investment decision is clearly understood, ie it is recognised that consent may be delayed, restricted or refused. However, to date, the RO has guaranteed that a level of subsidy can be obtained subject to accreditation being achieved. This guarantee has enabled developers to take a view on the risks associated with cancellation liabilities; in many cases DONG Energy has managed to proceed with early supply chain commitments despite these liabilities.

4.5 Post-EMR implementation, it appears that in committing to long-lead time equipment, developers will need to take a view on the risk of uncertain subsidy allocations and levels in addition to the existing consent risk. Given the size of the cancellation liabilities it will not usually be possible for developers to make these commitments with this new uncertainty. This will be a significant problem when seeking to deliver the related agenda of demonstrating commitment to supply chains in order to reduce cost of energy, improving UK content and achieving timely operating capacity.

4.6 The current proposals increase development risk by introducing a risk that a CFD FIT will, at a late stage, not be allocated to a specific, and otherwise fully consented, applicant project. This may be due to over-subscription in one round, or indeed in the worst case, that no further subsidy will be available in any period; this could come either through an agreed spending cap being reached or a greater than anticipated volume of
projects achieving a CFD FIT. The consequence of this is that there will be more caution in development, with projects being delayed due to contracts not being let ahead of receiving a CFD FIT and the required return for investors to balance these risks would rise significantly leading to higher cost of capital.

4.7 DONG Energy also notes that the Government is proposing to introduce penalties for projects that are delayed. There are already significant commercial incentives on developers and their suppliers to deliver projects to time, including significant financial consequences if projects are late. The introduction of penalties will add further risk (and therefore cost) without any apparent benefit to the scheme as a whole. Instead, the Government should consider alternative mechanisms to ensure projects with CFD FITs are delivered as planned, for example, evidence of significant installation progress and spend, and long-stop dates in contracts such as already exist within the seabed leases from The Crown Estate.

5. RO Transition

5.1 The change from the current RO regime to the new CFD FIT must be done as smoothly as possible to avoid any hiatus in investment. Whilst the Government has set out their intent to ensure that any investment delays are minimised through the use of “Investment Instruments”, there is still some uncertainty as to what these instruments will look like, how specific projects will secure access to the instruments, and the impact they may have on the ability of future projects to gain funding. It is essential that any instruments that are agreed are transparent and subject to scrutiny.

5.2 DONG Energy notes that the Government has been clear in its intent regarding the “grandfathering” of RO revenues in the final years of the scheme. It supports the proposals to the fix the price of ROCs issued between 2027 and 2037 and welcomes the detail provided in the Technical Update on the methodology to be used to calculate the fixed ROC value. However, it is concerning that the draft legislation does not match the commitments given in that it does not reflect the formula or the process in the Technical Update and instead provides more wide ranging powers to the Secretary of State, allowing changes to ROC values at any future date.

6. Payment Model

6.1 DONG Energy notes that ensuring investment into renewable projects requires both confidence in the revenue stream and a transparent and robust payment mechanism for receiving income; specifically the CFD FIT must be underpinned by a credit-worthy counterparty that takes into account the duration of the credit exposure a project will have to this counterparty. Additionally, the legislation must be clear in ensuring suppliers collect revenue from consumers to pay generators under the CFDs and that generators pay suppliers for times when prices exceed the strike price. These pre-requisites will ensure confidence in the investment community and should result in lower cost of capital for projects.

6.2 The proposals set out in the draft Operational Framework, and that are reflected in the draft Bill, do not meet these pre-requisites. During the initial discussions around EMR, there was a general expectation that the CFD FITs would be provided by a single counterparty and backed by Government. The move away from this model has a significant impact on the risk and credit assessment investors will make when considering investment in projects.

6.3 However, DONG Energy notes that DECC has been working with industry to address these concerns and has undertaken to review this option. This is welcome as the alternative payment model would include a single counterparty under a bilateral contract. It is important that under this model the identity and enduring robustness of the counterparty is addressed as a priority.

6.4 DONG Energy notes that the bilateral contract model must also account for dispute resolution under the CFD FIT and for change of law. As discussed, investors must have a clear and transparent view of the market, a part of which will be to understand what provisions are present that protect against future changes in law or disputes. However, again, this should be managed through industry processes as far as possible and not be subject to direct intervention by the Secretary of State.

6.5 Finally, DONG Energy notes that the process for establishing strike prices with the CFD FITs is fundamental to continued investment. Under the initial administrative period, companies must be able to see future strike prices and understand how they have been derived, including the assumptions underpinning the analysis and the methodology involved. DONG Energy welcomes the Government’s proposals to issue an early publication of draft strike prices by mid-2013 for the period 2014–2018 and final rates by the end of 2013.

6.6 Under the enduring process for price discovery, DONG Energy encourages the Government to provide as much stability as possible. The draft Operational Update suggests prices could be reviewed annually depending on the contracts allocated in any one year. Prices must not be reviewed more frequently than this and, if possible, should be fixed for a greater period. Frequent changes will make planning for projects more difficult and increase risk.

June 2012
Written evidence submitted by Ofgem

The draft Energy Bill, published on 22 May 2012, proposes “radical reform of the electricity market” to deliver the investment required to ensure continued security of energy supply and fulfilment of the government’s international commitments to deliver lower carbon emissions, while minimising the cost to consumers.

Ofgem welcomes the publication of the draft Energy Bill, and supports these objectives. Ofgem’s Project Discovery identified the unprecedented challenge Britain faces in attracting the huge investment needed, and estimated the amount of investment could be as much as £200 billion under certain scenarios when it published its report.

To assist the Energy and Climate Change Select Committee with their pre-legislative scrutiny of the Bill, this written submission focuses on two elements: Electricity Market Reform and the Strategy and Policy Statement set out in Chapter Eight in the Bill.

Section One: Electricity Market Reform.

Ofgem supports the high level objectives of Electricity Market Reform (EMR), which recognise the challenges we outlined in our final report on Project Discovery in February 2010.

In that report, Ofgem pointed out that the current market arrangements would not be sufficient to deliver secure, low carbon electricity at a reasonable cost to consumers. We set out a range of possible measures to address these concerns, ranging from reforms to improve price signals, such as cash out reform and a carbon price floor, to more direct measures to support investment, such as long term low carbon contracts and a capacity mechanism.

The broad measures proposed in EMR, of a carbon floor price combined with long term contract support for low carbon plant and a capacity mechanism broadly align with Project Discovery, and we commend the Government for giving these reforms high priority in its energy policy.

We believe a well designed set of measures along the lines proposed could strike the most appropriate way to reconcile both low carbon objectives, supply security and the needs of investors and consumers.

However to achieve this goal, it is important the Government gets the details right, both in terms of the design of the EMR instruments and the regulatory and governance arrangements surrounding them. There are a number of aspects of the EMR proposals that as they stand may result in higher than necessary costs to consumers and increased risk and uncertainty to investors.

We believe it is important to introduce a well designed capacity mechanism at the earliest possible opportunity and to confirm this decision without delay.

Ofgem believes a capacity mechanism is an essential part of the EMR package, given the measures to support low carbon generation will inevitably reduce prices and load factors of other capacity (including the existing fleet), whilst at the same time increasing risk to investors in such plants.

We are pleased to see that this dynamic has been recognised by DECC in the Policy Overview accompanying the draft Bill. Despite this, it remains government policy that the capacity market will only run if forward looking capacity assessments suggest it is needed.

Ofgem believes such a mechanism provides an important signal to investors and uncertainty over its implementation is likely to increase risk to supply security and/or lead to higher prices for consumers. A well designed mechanism should not lead to consumers bearing unnecessary costs during periods of surplus capacity, and ensures investors can take earlier and lower cost actions to avoid shortages in the future. Ofgem believes that the Government needs to state clearly whether there will definitely be a capacity mechanism; when it will start; and clarify the treatment of new and existing plants.

We would recommend a design for the FiT CfD contract that does not distort short term dispatch economics.

The Government’s “minded to” position is to pay out CfD payments based on the actual output of generators rather than a measure of availability. As DECC have pointed out in the annex to their Policy Overview, CfD payments based on output “affects dispatch decisions of CfD supported plant”, which has the potential to “distort the merit order”.

Ofgem believes that such distortions risks causing harm to consumers and competition, and could result in higher prices, increased uncertainty to investors and increased costs to the system operator. Moreover, this distortion has the potential to impact cross border flows in a manner that further increases costs to GB consumers and the economy and we suggest that the Government ensures consistency with the objectives of the single European market.

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75 Ofgem, Project Discovery—Options for delivering secure and sustainable energy supplies, February 2010 16/10 p1.
76 DECC Electricity Market Reform: policy overview May 2012, p.15.
DECC has commissioned analysis which shows the dispatch distortion to 2030 to be “minimal”, although it acknowledges that this is highly dependent on assumptions, and in some circumstances the distortion could be much greater. DECC also acknowledges that this distortion could result in up to 600 hours of negative prices by 2030, and has suggested that measures should be taken to counter this effect.

In general, Ofgem believes it is better to avoid serious distortion of markets unless there is strong justification to do so, largely because the consequences are difficult to predict and are more likely to reduce efficiency and increase costs. In this case we believe that there are simple alternatives that avoid this distortion and that the reasons provided for paying on metered output are far from convincing. In general, concern that low carbon plant will not be given sufficient priority in dispatch is already being addressed through the carbon floor price.

We believe, as far as possible, that prices for the long term CfDs should be set through competition.

Ofgem welcomes DECC’s progress in developing a clear timetable for the transition from administrative setting of strike prices in the early stages of EMR, through to competitive auctions. However, we remain concerned that achieving value for money for consumers will depend initially on a mixture of bilateral negotiations on a case-by-case basis and administrative price setting.

We also remain concerned that the plans for transition are contingent to a significant degree on the emergence of market conditions which support the introduction of competition. The timetable provided appears ambitious when set against the criteria that need to be met, so there remains a considerable risk that most of the low carbon investment needed before 2030 will take place under broadly administrative arrangements. We would prefer DECC to establish a clear timetable for the introduction of a competitive process.

We would like DECC to explore whether the support arrangements themselves could be changed or could evolve in a way that better facilitates competition (through, for example, separating technology specific support from long term price hedging). We believe there should also be more explicit consideration of whether there should be limits to the length of time specific technologies should benefit from tailored levels of support before being required to compete directly against other (low carbon) capacity.

The Government’s favoured CfD contractual framework envisages a multi-party statutory contract between low carbon generators and suppliers in general. We are keen to learn about DECC’s plans for enforcement and about the implications for small suppliers and the prospects for new entry.

It is not clear how the obligations placed on suppliers to comply with the requirements of CfD contracts will be given effect. More specifically, it is not clear whether (and if so how) Ofgem will be responsible, ultimately, for ensuring suppliers comply with their requirements through, for example, enforcement of licence conditions. Any uncertainty over the ability to enforce the terms of the CfD contract may reduce its effectiveness and undermine the confidence of investors.

Even though DECC gave reassurances in the “Policy Overview” we do remain concerned about the potential impact of increased credit and collateral requirements on small suppliers and the risks to new entry. We welcome the fact that Government recognises this issue and has committed to working with Ofgem to understand the consequences.

Clarity on responsibility for the regulation and governance of industry arrangements, including those introduced under EMR, is imperative.

It is important that the EMR arrangements do not constrain Ofgem’s ability to carry out its duties as an independent regulator and that there is absolute clarity about the governance of the industry arrangements going forward. We would prefer the Government’s new broader powers to be subject to a sunset clause to avoid undermining confidence in the stability of market arrangements going forward. There is a risk that EMR arrangements introduced by Government, may impact existing market arrangements, reducing their effectiveness and undermining the confidence of market participants.

These considerations are particularly important in relation to our objective under European directives (which have now been incorporated into our principal objective) of promoting a “secure and environmentally sustainable” single European market when carrying out regulatory functions. It is likely that Ofgem will be required to implement changes to market arrangements in pursuit of this objective and it is important that EMR does not restrain our ability to do this.

We broadly welcome the proposals put forward in the EMR policy overview, which envisage Ofgem continuing its current role as the regulator of National Grid’s system operator activities after the scope has been broadened to cover EMR delivery. It is important to ensure that the relationship between the system operator and the Government in carrying out the EMR delivery functions, and in particular the arrangements for reporting and accountability, does not compromise Ofgem’s ability to carry out its role as an independent regulator.

78 Ibid. pp.49–50.
There are both opportunities and risks inherent in using the system operator as the EMR delivery body. Ofgem will continue to work with Government to consider these implications.

Ofgem and Government are working jointly to identify the potential synergies and conflicts of interest that arise from the system operator acting as the EMR delivery body. This work, which is expected to complete before the end of 2012, will depend strongly on the detailed design of the EMR instruments, and, in particular, the degree of discretion the system operator has in performing this role.

**SECTION TWO: THE STRATEGY AND POLICY STATEMENT.**

The Strategy and Policy Statement (SPS) is the Government’s policy proposal for strengthening the current framework for gas and electricity market regulation. The SPS is intended to bring greater clarity and coherence to the roles of government and the Gas and Electricity Markets Authority (the Authority). It aims to do this through a statement that sets out:

(a) the strategic priorities, and other main considerations, of Her Majesty’s government in formulating its energy policy for Great Britain (“strategic priorities”) to which the Authority must have regard,

(b) the particular outcomes to be achieved as a result of the implementation of that energy policy (“policy outcomes”). The Secretary of State and the Authority must carry out their respective regulatory functions in a manner which they consider is best calculated to further the delivery of the policy outcomes subject first to fulfilling the principal objectives,

(c) the roles and responsibilities of persons (whether the Secretary of State, the Authority or other persons) who are involved in implementing that policy or who have other functions in connection with it. This section will have no legal effect.

**POTENTIAL BENEFITS**

Ofgem welcomes the potential benefits which the SPS can deliver in particular through greater clarity of:

(a) Government’s strategic priorities for the energy sector; and

(b) the respective role of Government, the regulator and other industry players as appropriate.

In addition we welcome the Government’s reaffirmation of its commitment to independent economic regulation in energy. The Authority’s independence is a critical component of, among other things, investor confidence in the sector. We note that the Authority’s independence (which is enshrined in European law and which has been reflected in domestic legislation through the implementation of the EU Third Energy Package) is unchanged by the SPS and the Authority will be required in carrying out its regulatory functions to fulfil its principal objective to protect the interests of gas and electricity consumers.

Nonetheless the SPS does have the potential to make a difference to the way the Authority operates. Ofgem recognises that the Authority’s role has become broader in recent years and that it now has an important contribution to make to a wider set of policy goals. We consider that, as set out in the Ofgem Review, it is right that decisions are taken by the body that has the legitimacy, expertise and capability to arbitrate between the required trade-offs. It is for Government to put in place strategic policy objectives for the gas and electricity sector. The Authority’s independent regulatory decisions should form a logical and coherent part of this broader strategic policy framework subject to fulfilling its principal objectives.

In future the Authority will be required to have regard to a strategic framework and it will need to set out how it intends to further delivery of SPS policy outcomes and will have to report against them. This enhanced reporting will increase regulatory accountability significantly, particularly if Government fulfils its intention as set out in the command paper to “include a limited number of short policy outcomes that result from high-level strategic trade-offs that Government has made.”

The SPS framework as drafted has the potential to deliver greater clarity about the respective roles of government and the regulator, greater clarity about the government’s strategic policy objectives and to increase regulatory accountability which could all contribute to a more certain environment for investors.

**RISKS**

It is not however certain that the SPS will deliver these improvements. The Energy Bill only contains powers which enable the designation of the SPS (and future statements) and as such there is no SPS at present. We will want to consider the detail of the draft SPS as it develops carefully.

We note that there are a number of circumstances in which the SPS could be changed. Although we think that the circumstances which enable the SPS to be changed are reasonable, there is no explicit limit on the frequency of change. Frequent changes to the SPS on the grounds that there were significant changes to energy policy would do much to undermine the investor confidence which the SPS was designed to increase and could potentially undermine the perception of the Authority’s independence.

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79 See Draft Energy Bill (Cm 8362), p.40, para 106.
Ev w118  Energy and Climate Change Committee: Evidence

There are also no explicit limits to the number of policy outcomes which can be specified and the detail of those outcomes. We welcome the Government’s statement (in the command paper) that the SPS should contain a limited number of short, strategic policy outcomes as referred to above. This has gone some way to alleviating our concerns. Nonetheless the way in which the SPS is drafted and revised will be critical in ensuring that its potential benefits as fully supported by Ofgem are not undermined.

June 2012

Written evidence submitted by the Electricity Storage Network

INTRODUCTION

1. The Electricity Storage Network is a trade association whose members are interested in the development of electricity storage technologies and their application to the electrical power system. Members include the transmission system operator, distribution network operators, manufacturers of electricity storage technologies, power industry equipment, engineering companies and consultants, project developers, academic institutions and other researchers. Membership includes those based in the UK and overseas. Through its membership, the Network is able to call on expertise and experience of the use and application of electricity storage. We are responding to this call for evidence to make particular reference to the need for the future electricity market to include the application of electrical energy storage, at all scales. We would be pleased to submit further explanation of our evidence if required.

2. Electricity storage should be seen as a fundamental part of the electric power infrastructure with applications across the power system from large scale devices, installations at mid size on the distribution level, and small scale installations at the consumer level. We see storage as a means of meeting the requirements for a sustainable, efficient power system, and storage should be a means to lower the overall system operating cost and hence reduce the costs of electricity to all.

3. Electricity storage devices are available in a range of sizes, to suit applications at the domestic, (kW), distribution (kW—1 MW) and large scale (1 MW—1000s MW). Users can include large companies, such as independent power producers, renewable energy producers, transmission and distribution companies, as well as large and small users of power.

MAIN POINTS

4. The existing legislation which applies to the electricity sector does not address explicitly the role of electricity storage within the market. This may be due to historical reasons, in that at the time of privatisation, only pumped hydro was considered as electricity storage, and by considering this as generation, a special case for storage was not necessary.

5. Today, storage technologies are based upon electro-mechanical, hydro-electric, thermo-electric and electro-chemical processes. Pumped-storage system should not be considered to be the only mature technology today (in the context of electricity networks), as there are a range of other technologies currently in service in the UK and elsewhere which demonstrate how storage can be used to benefit. For example Lithium Ion batteries have demonstrated improved operation of the distribution network where there is a high penetration of windpower,\(^80\) and have been used to provide ancillary services for network operation.\(^81\) Other battery types have been used in applications up to 34 MW in capacity.\(^82\) As well as batteries, other technologies such as flywheels, cryogenic energy storage and pumped heat can also be used.

6. The Draft Energy Bill makes few references to the role of storage, however it is explicitly mentioned in Stage 3 of the Electricity Market Reform process (post 2020) in the explanatory notes, where demand side response, additional storage and interconnection all play an increasingly large role in managing supply and demand. The absence of storage as a named activity in the Draft Energy Bill is at variance to the trends in other countries, where storage is increasingly seen as a component of the future network.

7. There is concern, that exclusion of electricity storage will lead to its absence from the strategy and that decisions taken now will limit the opportunity for the adoption and use of electricity storage in the future. Because electricity storage is not explicitly defined in the existing legislation, there is confusion and uncertainty about its treatment. This has been a significant factor in the lack of adoption and use of this technology during the post privatisation phase.

8. It is not appropriate to include electricity storage as simply a generation activity, because it has an important role as an absorber of power. The dual roles of absorbing and discharging power put electricity storage into a unique class within the electricity industry.

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\(^{80}\) For example Hemsby, Lincolnshire
\(^{81}\) For example Angamos, Chile, 20 MW,
\(^{82}\) For example Rokkasho, Japan 34 MW, Sabana Llana, Puerto Rico, 20 MW
EVIDENCE

9. We note that in the United States of America, legislation has been proposed and is under legislative scrutiny which recognises the status of electricity storage as a separate class. The electricity market regulatory framework also recognises electricity storage by offering tariffs that do not discriminate against electricity storage. In the US under the production tax credit (PTC) incentive, storage, if it is installed at the renewable source, attracts the same PTC. Solar projects have been installed where by storage has attracted 30% PTC, which provides a considerable incentive not only to install solar power, but also storage.

10. Germany provides special incentives for new build electricity storage and refurbished pumped hydro storage to be exempt from network usage fees. In Italy, there is provision for the TSO and DSO to own and operate batteries for electricity storage.

11. We also draw the committee’s attention to recent reports and policy statements that refer to the role of electricity storage and point out the steps that would be necessary in order to develop the technology for societal benefit in the UK and in particular on the GB electricity system. Attention is drawn to the need to develop a market where electricity storage can participate and also to clarify, simplify and develop the legal and regulatory framework to allow storage to participate. This requires the setting of objectives that allow investors some certainty in the market in order to achieve a satisfactory rate of return. The lack of opportunities to develop storage now, may lead to future barriers to its deployment.

12. There are currently a number of inconsistencies between the Electricity Act 1989, and subsequent Statutory Instruments and Regulations which tend to inhibit the adoption of storage. Licence conditions for generation, transmission, distribution and supply cover have not been drafted with any account of the nature of storage. It is not clear whether electricity storage is covered as a generation activity under these class exemptions or associated legislation. There is no guidance from OFGEM on this issue.

13. The Electricity (Class Exemptions from the Requirement for a Licence) Order 2001 includes a number of exemptions which tend to distort the market and limit the opportunities for electricity storage to participate in the market, if it is defined as generation. Class exemptions allowing small electricity producers exemption from licensing place an unfair burden on a developer of say a 5 MW storage installation as opposed to operators of 10 installations of 500 kW which might operate collectively, but without the need for licensing.

EXAMPLES OF STORAGE PROJECTS AND UNCERTAINTY

14. Electricity storage is available in a range of sizes, encompassing parameters of power from tens or hundreds of Watts to multi megawatts, and energy content from kWh to MWh. The particular size chosen will be dependent on the location and application. However, different operating parameters lead to different treatment. As an illustration, we provide the following examples:

(a) An electricity user installs a storage device rated at 500 kW, connected to a metered installation. The device is charged and discharged to reduce the peak loading on the metered installation, thereby reducing the capacity charge paid to the supply company and the distribution company. No special licence conditions apply. However the full system value of operating the storage is not available to the user.

(b) An electricity distribution company installs a storage device rated at 500 kW, in order to reduce for need for local network reinforcement. Although the installation is within the distribution licence conditions, the act of discharging the storage device, which might be deemed to be supply of electricity falls in an uncertain area for licensing, dependent on the other activities of the distribution company. The distribution company benefits from improved network operation, but is generally not able to take advantage of the value of energy trades through the device.

(c) A development company installs ten separate energy storage devices, each of 500 kW, distributed within a network. Each installation can be treated individually if they are operated separately.

(d) A development company installs ten separate energy storage devices, each of 500 kW, distributed within a network. These installations are operated collectively, and supply a mixture of domestic and non domestic consumers. Exemptions from licensing may or may not apply, depending on the proportion of power supplied to domestic consumers.

(e) A company installs a single energy storage device, of 5.1 MW on a distribution network, supplying a mixture of domestic and non domestic consumers. Unlike the example of distributed storage, this installation would require licensing, unless the company can demonstrate that this is not generation. The additional costs of gaining legal opinion can be considerable, and the financial implications of licensing reduce the predicted financial rate of return.

83 For example S1510 Bingaman, and S1845 Wyden.
84 For Example FERC Notice of Proposed Rulemaking on Pay for Performance
85 EnWG.
86 Art 36 para 4 of law 93/11
87 Energy Research Partnership—The future role of energy storage—June 2011; Low Carbon Futures—Pathways for energy storage in the UK—March 2012.
88 This is known as community energy storage
(f) In all of these circumstances, the analysis is clouded by the need to determine whether generation is taking place or not. In the Electricity Act 1989, generation is seen as the process of generating electricity for the supply to consumers, but for storage, this is frequently not the main purpose. Furthermore, definitions of generation, envisaged by determining the output across alternator terminals leads to further lack of clarity as storage devices may or may not use an alternator.

15. We propose that the opportunity taken in the Draft Bill to clarify licence conditions, for example in clauses 27 and 32, should include provision for future recognition of the role of electricity storage and its use by all participants in the electricity value chain, that is generators, transmission operators, interconnector operators, distribution operators, suppliers and users of power.

16. Electricity storage is an essential part of the electrical infrastructure. Electricity storage has the potential to provide a range of services across the network that will support and deliver lower cost, sustainable energy. A remuneration strategy that depends solely on differentials between high and low prices is unlikely to provide sufficient long term stability for participants to invest in electricity storage and misses the opportunity to use electricity storage as a means to reinforce the distribution networks as the nation moves towards a more sustainable power industry.

June 2012

Written evidence submitted by National Energy Action

1. INTRODUCTION

National Energy Action (NEA) is a national charity with a primary objective of eradicating fuel poverty. NEA works to tackle fuel poverty through the promotion of policies and services that enable the most financially disadvantaged and vulnerable households to achieve affordable warmth. NEA advocates high standards of heating and insulation as the long-term sustainable solution to fuel poverty, supplemented by fair energy prices and access to the benefits of the competitive energy market.

NEA estimates that fuel poverty currently affects more than 6.5 million households across the UK, and there are serious concerns that this total will increase further as domestic consumers face additional cost burdens as a result of continuing high global energy prices and Government proposals for a low-carbon energy industry. These households experience a number of detrimental health impacts and reductions in general wellbeing as a result of cold damp living conditions. In extreme circumstances low indoor temperatures can lead to premature death.

— The cold increases blood pressure which increases risk of heart attacks and strokes. This alone is responsible for approximately 40% of excess winter deaths.
— The cold lowers resistance to respiratory infections and impairs lung functions and can trigger bronchoconstriction in asthma.
— Damp increases mould growths, which can cause asthma and respiratory infections. These symptoms are responsible for approximately 30% of excess winter deaths.
— Another well known yet underrepresented example is impacts on mental and social health. Damp, cold housing is associated with a fourfold increase in depression and anxiety.
— Some people become socially isolated as they are reluctant to invite friends round to a cold house.
— Finally, in cold homes where only one room is heated, it is difficult for children to do homework, affecting educational and long-term work and health opportunities.

The UK Government is committed to a number of statutory objectives relating to energy security, renewables, climate change and fuel poverty. Compliance with this mix of environmental and social obligations has proven to be both challenging and costly and will continue to be so if Government objectives are to be attained. Simultaneously, retail energy prices continue to rise. Despite very small reductions earlier this year, the main energy suppliers and independent commentators have all confirmed that energy prices will continue to rise well into the 2020s. Whilst it is right to highlight increasing wholesale prices as the principle cause, increased demand and decreasing resources of non sustainable fuels are not the only driver. Whilst policy intervention is clearly required, energy policy is, and will increasingly, drive energy price rises too.

The Government’s Draft Electricity Market Reform legislation sets out the Government’s commitment to transform the UK’s electricity system to ensure that our future electricity supply is secure, low-carbon and, crucially, affordable. Addressing this issue or tension should be a primary focus of the Committee’s investigation.

Whilst NEA recognises the need for sufficient electricity capacity and environmental priorities, analysis of the impacts of policies on prices and bills, including analysis on households, reveals the EMR presents a number of threats to low income and vulnerable consumers. Independent research and initial impact
assessments produced by the Department illustrate that many of the EMR proposals would severely impact on the poorest households and that there is a significant, regressive distributional impact.\footnote{The paper, “Electricity Market Reform—options for ensuring electricity security of supply and promoting investment in low-carbon generation”, published by DECC in December 2010 stated “Distributional analysis provides insights into the affordability of the reform options for different households by looking at the increase in the electricity bill as a percentage of total household expenditure, when compared to the baseline. This analysis suggests that the highest impact is on households in the lowest income deciles in all of the packages.”}

Whilst in the short to medium term, wholesale prices are not able to be curbed, if the UK wishes to pursue energy policy in a progressive manner, two key challenges must be overcome by the Government, the Regulator and the energy industry:

- DECC and the Regulator need to further analyse and quantify what benefits, risks and costs accrue to different income groups as a result of decarbonisation policies.
- Working alongside other Departments, this analysis must be reinforced by suitably ambitious compensatory policies to protect low-income and vulnerable groups.

In addition and as discussed later in this document there is significant risk that, unless remedial action is taken, many of the incentive mechanisms could simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers. NEA therefore welcomes the opportunity to respond to this call for evidence and seeks to highlight a number of areas that must be taken into consideration before this policy can be implemented.

2. *Why should we act now?*

To date, a range of market failures and barriers has frustrated attempts to tackle demand and supply side energy inefficiency, in both the traded and non traded sectors. Overcoming these barriers is critical to enabling all energy consumers to reduce their exposure to rising wholesale costs, reduce the costs associated with a transition to a low carbon economy (by obviating the need to build expensive forms of low carbon power generation to satisfy a continuing need for essential energy services) and reduce the consumption of these higher cost energy services (which will increasingly contain implied costs associated with Government policies to reach ambitious energy-related targets).

At the same time, it is universally recognised that fuel-poor households generally consume less energy than more affluent households but are more likely to occupy energy inefficient homes and are less likely to have access to resources to fund heating and insulation improvements. Consequently, and inevitably, high energy prices currently have a disproportionate impact on the poorest households who are further constrained by their limited access to the competitive energy market, eg they are unable to benefit from cheaper tariffs such as online Direct Debit or may not be able to switch suppliers due to arrears. To date, attempts to address fuel poverty programmes have had limited success.

In summary therefore, fuel poverty can involve a complex mix of factors with high energy prices, low household incomes and poor heating and insulation standards all contributing to the scale of the problem. The table below\footnote{Fuel Poverty 2008—Detailed Tables, DECC, 2010.} illustrates a particularly perverse issue related to fuel poverty: it is often the case that essential fuel expenditure for households on the lowest incomes exceeds that of their more affluent neighbours.

<table>
<thead>
<tr>
<th>Expenditure as % of income</th>
<th>% of housing stock</th>
<th>Number of households</th>
<th>Average income (£)</th>
<th>Average fuel costs (£)</th>
<th>Average SAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 5%</td>
<td>49.9%</td>
<td>10,890,000</td>
<td>£39,718</td>
<td>£1,124</td>
<td>55</td>
</tr>
<tr>
<td>5% to 10%</td>
<td>34.5%</td>
<td>7,383,000</td>
<td>£17,887</td>
<td>£1,203</td>
<td>51</td>
</tr>
<tr>
<td>10% to 15%</td>
<td>10.0%</td>
<td>2,145,000</td>
<td>£11,350</td>
<td>£1,351</td>
<td>45</td>
</tr>
<tr>
<td>15% to 20%</td>
<td>3.0%</td>
<td>635,000</td>
<td>£9,131</td>
<td>£1,567</td>
<td>38</td>
</tr>
<tr>
<td>Over 20%</td>
<td>2.6%</td>
<td>550,000</td>
<td>£5,495</td>
<td>£1,662</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>21,407,000</td>
<td>£27,554</td>
<td>£1,201</td>
<td>52</td>
</tr>
</tbody>
</table>

However, this circumstance also emphasises a key distinction between remedial action to address general poverty and remedial action to resolve fuel poverty. In many cases the only solution to general poverty is through long-term income transfer; this is particularly the case for those on permanent low fixed incomes, such as pensioner households, where economic circumstances are unlikely to improve. Conversely, fuel poverty can be eradicated, or significantly alleviated, through one-off investment in energy efficiency improvements including efficient and economic heating systems and effective thermal insulation.

Of course action on fuel poverty also addresses wider issues of poverty in a number of ways. Affordable warmth brings additional benefits to low-income households as a result of increased disposable income which allows additional discretionary spending on other essential goods and services. The energy efficiency approach to fuel poverty can also deliver benefits through the creation of training and job opportunities and through the release of extra spending power to the economic benefit of the wider community.

Professor John Hills has now completed a review of fuel poverty. The final report was published on 15 March 2012. The report demonstrates that, far from being eliminated in 2016, fuel poverty will still affect...
between 2.6 million and 3.0 million households (containing between 7.8 and 8.9 million individuals) when measured, using his new recommended indicator. The overall impact of policies to ameliorate the issue (income support, energy discounts and energy efficiency) disappointingly demonstrates that this number will be a tenth—but only a tenth—lower than it would otherwise be without these policies. NEA welcomes the review’s recognition of the scale and severity of fuel poverty in this country. We also welcome the review’s recognition that past and current Government policies are not sufficient to meet the Government commitment to eradicate fuel poverty, as required by the Warm Homes and Energy Conservation Act 2000.

Because of these concerns, NEA has been keen to engage with a number of representative groups, NGOs and individuals in order to share our interpretation of the EMR policy proposals; introduce a more frank discussion into the current debate about the costs; and ensure that the medium and long-term benefits of moving to a low carbon (and as it stands, a high cost) energy future are rigorously quantified.

As a result of our consultation with these representative groups, NEA is concerned that these negative distributional impacts will be sustained for little benefit as the policy is likely to fail to lever investment in new low-carbon investment. This is particularly the case where, in the future, the Carbon Floor Price could integrate with plant supported through a Contract for Difference or Low Carbon Feed in Tariff. CfD and FiTs would seem to work at odds with the proposed CPS as a recipient of the CfD/FiT (renewables, new nuclear or CCS) would be largely unaffected by the wholesale market price and carbon signals. The interaction between the CPS and other proposals within the EMR need further examination, especially given the overall cost to the consumer and the evident impact this will have on fuel poverty.

The supporting documents to the EMR makes it clear that by helping to encourage new generation the EMR policy should reduce the wholesale price over the medium and longer term. Theoretically this should benefit the consumer through resulting reductions in retail prices, but this is not currently guaranteed and it will depend on a wide range of additional factors. Whilst it is welcome that the previous Secretary of State for DECC believed the EMR proposals would, in the long term, “result in bills lower than they would otherwise be”,91 the degree of uncertainty regarding the impact these proposals will have in the short, medium term on consumer bills provides no reassurance to NEA. There is significant risk that, unless remedial action is taken, this mechanism could also simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers.

Whilst these issues may present a difficult challenge to Government in the short term, it is right to recognise that this inequity can only become starker in the near future, with the implementation of policies such as the EMR. It would also be naïve to ignore the considerable risk presented above; the ambition presented by European and UK climate targets may be checked by public sentiment if it is clear that only affluent households will be in a position to reduce their exposure to increasing energy prices.

Many would regard this avoidable situation as a serious missed opportunity, not only to make good on our own existing commitments but also to demonstrate to the rest of Europe that social and environmental objectives need not necessarily be in conflict. Professor Hill’s analysis goes on to suggest that policies to improve the thermal efficiency of the housing stock that are targeted on those with low incomes and have energy-inefficient homes would be the most effective at reducing the level of fuel poverty whilst also contributing substantially to carbon emission reductions.

3. What can be done now?

As noted above, earlier analysis of the impacts of the Carbon Price Support (CPS) policy and EMR package revealed that the EMR could presents a number of threats to low income and vulnerable consumers.92 NEA believes that, in aggregate, the near final EMR proposals would also severely impact on the poorest households and that there is still a significant, regressive distributional impact. However, despite the Government’s initial impact assessments suggesting this required further attention, the Government’s Draft Electricity Market Reform legislation (and supporting impact assessments) failed to provide any further indication of how these final policies will effect fuel poverty levels (either separately or as a package). In addition, the impact assessments that have been produced to assess the impact these policies will have on domestic fuel bills also fail to provide consistency on counterfactuals or baselines and most “business as usual” scenarios include Carbon Floor Price which distorts the findings.

The Climate Change Act requires the Committee on Climate Change to advise Government on the impact of the Carbon Budgets on energy supplies and fuel poverty levels. They too seem reluctant to undertake this task. The CCC’s publication of December 2011 on the cost of meeting carbon budgets does consider the likely level of domestic fuel bills in 2020. However, its calculations are focused on the vast majority of energy customers, that is dual fuel customers, and are not therefore directly comparable with the DECC figures. In addition the CCC does not provide direct analysis of the different impacts on income decile groups.

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92 Modelling carried out within the CPS impact assessment (consultation released by Treasury) also indicates that the impact of the CPS proposals would severely impact on the poorest households, in particular those pensioners living on their own, and could push 100,000—200,000 households into fuel poverty.
The CCC finds that the typical dual fuel customer can expect a household bill of £1,250 in 2020 compared to a bill of £1,060 in 2010 (both figures are in real 2010 prices). The CCC suggests that this includes £130 per household for measures to support low-carbon investments and around £60 for supporting energy efficiency improvements in homes. The CCC goes on to suggest further reductions could be delivered by enhancing the markets for energy efficient appliances and reducing gas use through further insulation and heating controls.

As John Hill’s notes in his final report:

“This analysis of the distributional impact of prices and bills supports the conclusion we drew in our interim report that the distributional impacts of policy design and delivery need to be fully understood and quantified. Only through rigorous assessment of these impacts can future policies be drawn up and delivered that have the desirable impact of assisting those households in fuel poverty”.

Although the CCC does not focus its analysis on impacts of prices and bills on different types of household, it does refer to the needs of households for whom electricity is the main heating fuel.

It argues that such households could be more exposed to price rises and that the Government should develop policies to protect these households. Clearly, NEA’s primary concerns relate to the circumstances of households for whom energy costs are unaffordable. Whereas more affluent households are able to manage their higher costs and/or consider fuel switching or adopting a renewable technology option, these opportunities are not available to low-income households. Financially disadvantaged households must currently persevere with their expensive and often inefficient heating methods. There is seemingly an urgent need for DECC, the CCC and/or the Regulator to analyse and quantify the final EMR proposals and assess further what benefits and risks accrue to different income groups as a result of the policy and be frank about the uncertainties surrounding them. This analysis should specifically consider whether there is a significant, regressive distributional impact and clearly highlight the impact the EMR policies (separately and collectively) have on fuel poverty levels (in the short, medium and long-term). However, as discussed below, this analysis is not sufficient on its own. If these negative impacts are confirmed, this must be reinforced by action to address the situation and the introduction of compensatory policies to protect low-income and vulnerable groups.

4. The Importance of Immediate Mitigating Policies

As highlighted above, there are growing concerns in the UK over the impact on domestic energy bills of policies to promote decarbonisation and the green agenda. NEA takes the view that public understanding and acceptance of these policies is dependent on the perception that they are fair and that effective action is taken to mitigate any significant detriment to disadvantaged energy consumers. In this context it may be that we can learn from the example currently being set in Australia.

The Australian Government has committed to reduce carbon pollution by 5% from 2000 levels by 2020 regardless of what other nations have actually done, and by 15% to 25% depending on the scale of global action. The Government also commits to a new 2050 target to reduce emissions by 80% compared with 2000 levels, in line with targets announced by the United Kingdom and Germany.

The primary mechanism to achieve these reductions will initially involve introduction of a carbon pricing mechanism starting at $23.00 per tonne in 2012–13, rising to $24.15 in 2013–14 and to $25.40 in 2014–15. From 1 July 2015, the carbon price will take the form of a fully flexible price under an emissions trading mechanism.

The Australian Government estimates that the effect will be to increase average weekly household costs by around $10.00. But the crucial difference is that compensatory measures are intended to prevent any negative impact on vulnerable and low-income energy consumers. The Australian Government is committed to a number of remedial policies including that:

- More than 50% of the carbon pricing mechanism revenue will be used to assist households.
- Millions of households will be better off under the carbon pricing mechanism.
- Assistance will be permanent.
- Low-income households (including all pensioners) will be eligible for assistance that at least offsets their average expected cost impact from carbon pricing.
- Middle-income households will be eligible for assistance that helps them to meet the expected cost impact from carbon pricing.
- Households containing individual/s with a relevant concession card and who are certified by a medical practitioner as having a medical condition or disability that means they have high essential electricity costs are eligible for additional assistance through the Essential Medical Equipment Payment.

The European Union’s Third Internal Energy Market Package also gave prominence to consumer interests; the Resolutions insisted on increased consumer rights (regulating areas such as change of suppliers, direct information through smart meters and efficient treatment of complaints). Crucially, Member States were also required to define “vulnerable consumers”, to take measures to tackle “energy poverty” and to prohibit disconnection of gas and electricity at critical times. Within the legislation Member States must ensure that the rights and obligations linked to vulnerable customers are applied.

The UK Government believes itself to be fully compliant with these requirements. Vulnerable customers are defined in the UK Fuel Poverty Strategy and the energy regulator, Ofgem, must carry out its functions in a manner best calculated to further its principal objective having regard to, amongst other things, the interests of people who are disabled or chronically sick, pensioners, those on low incomes and people living in rural areas. In addition, energy suppliers have a number of obligations in their licence conditions relating to vulnerable consumers, for example those who are of pensionable age, disabled and chronically sick. Licence conditions cover a number of specific areas such as free gas safety checks and a moratorium on winter disconnection from supply.

The UK has a comprehensive and sophisticated fuel poverty infrastructure incorporating programmes to improve heating and insulation standards, offer discounts on energy bills and support through Winter Fuel Payments. However, despite these positive measures, the Government has failed to achieve its interim target, adopted in the UK Fuel Poverty Strategy 2001, to eradicate fuel poverty for all vulnerable households in England by 2010 and due to a range of factors (some described within this paper) will also almost certainly fail to achieve the remaining target dates.

It is well known that fuel poverty is caused by a combination of low incomes, high energy prices and poor-quality energy inefficient housing. However, as highlighted above, tackling the energy efficiency of the home is the most rational and sustainable way of permanently resolving this problem at the same time as capturing the opportunity to combine both social and environmental objectives.

Publication of the consultation on the Green Deal and the Energy Company Obligation (ECO) provides welcome detail on the proposed operation of the Government’s planned energy efficiency programme. However, there is a real concern that whilst many affluent households may regard the Green Deal as an attractive prospect, to fund a greener and energy-saving lifestyle, the programme will currently fail the most vulnerable and financially disadvantaged households.

The ECO will be paid for by levies on consumer bills with the inevitable consequence of higher costs (and increased fuel poverty) for those who do not benefit directly from the programme. However, current concerns with ECO do not simply focus on the regressive impact of uniform levies on consumer bills,95 or the lack of parity between social and environmental objectives, but on the inequitable access to the potential benefits.

Despite a welcome move by the Deputy Prime Minister to announce an increase to the resources for low income households under the Energy Company Obligation (ECO) in April, the Government is currently putting in place plans that would halve funding for schemes to improve heating and insulation standards in properties occupied by financially disadvantaged households, despite the fact that energy efficiency is the most rational long-term solution to fuel poverty. From next year, annual expenditure on these heating and insulation programmes will reduce from the 2010–2011 level of £1.1 billion to around £540 million.

NEA’s recent response to the Green Deal and ECO consultation therefore outlines a need to:

- Enhance the scale of the Affordable Warmth element of ECO to ensure the Government honours its commitment that low-income and vulnerable households will benefit from enhanced resources to fund the installation of energy efficiency measures, and are provided with adequate upfront support (through ECO, not the Green Deal Finance Mechanism).
- Provide a statement clarifying how hard-to-treat properties in low-income communities will be targeted for priority assistance. This statement should set out how the Government envisages an area-based approach will offer assistance, advice and guidance to all households whether fully able-to-pay or those benefiting from partial or full subsidy. NEA is not convinced that the area-based model, despite the strategic and economic advantages of such an approach, will develop naturally without an appropriate level of prescription.

Rather than leading to additional cost, many groups believe it is possible to: target delivery across these low-income communities; deliver large volumes of solid wall insulation; achieve economies of scale; and bring down costs for all consumers. Targeting the carbon reduction element of ECO in this way would represent a much more cost-effective method of meeting carbon targets than providing one-off expensive subsidies to better off households through “pepper pot” delivery. It would also develop the supply chain and expertise in the delivery of innovative technologies thus preparing the way for their wider adoption in the Green Deal proper.

There is a need to accelerate work on the future requirements under a revised Home Energy Conservation Act to ensure local authorities are equipped to take a central role in attempts to tackle both domestic carbon emissions and reduce fuel poverty. This work should consider how all local authorities need to be obliged to...
work in partnership with appropriate private and voluntary sector agencies to support the reduction of fuel poverty and carbon emissions through domestic energy efficiency, through the Green Deal and ECO, but also more broadly. This work should identify the potential benefits, and also the resources required, to identify high energy use areas (hotspots) through a sample of their housing stock and data from other sources including public health bodies, energy companies and other relevant national or local agencies. NEA believes that this is fundamental to the first phase of delivery of the Green Deal and ECO and presents the greatest opportunity for local authorities to be able to prioritise assistance for those in greatest need and help reduce the local impact of the EMR proposals.

By adapting policies in the coming weeks, not only would the Government honour its commitment that low-income and vulnerable households will benefit from enhanced resources to fund the installation of energy efficiency measures, it would enable the Government to use a range of policies as a strong examples of how social and environmental objectives are not necessarily in conflict. This would be a key message ahead of the Parliamentary stages of the primary legislation for Electricity Market Reform.

5. Long Term Thinking

Programmes funded through levies on customer bills are inevitably regressive to some extent. This is currently the case where, as we understand it, levy charges to support the Carbon Emissions Reduction Target are distributed across the domestic customer base with no relation to the level of consumption.

Since low-income households generally occupy smaller properties it may be argued that this implies lower needed energy costs and that, consequently, such households would benefit from a levy based on energy consumption. However, as the table below illustrates, low levels of energy consumption are frequently linked to deprivation rather than to low demand, and increased expenditure to meet need rather than expenditure that reflects unaffordable energy costs would weaken the merits of a consumption-based charge.

<table>
<thead>
<tr>
<th>Income decile</th>
<th>Average actual energy expenditure</th>
<th>Average required annual energy expenditure</th>
<th>Actual expenditure as a proportion of modelled requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>£671</td>
<td>£1,124</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>£764</td>
<td>£1,109</td>
<td>69%</td>
</tr>
<tr>
<td>3</td>
<td>£811</td>
<td>£1,173</td>
<td>69%</td>
</tr>
</tbody>
</table>

Conversely, there are serious concerns that specific categories of fuel-poor households could be further disadvantaged by a consumption-based levy. Research carried out by the BRE in 2009 examined the impact on fuel poverty of a range of rising block tariffs. The research found that all four of the options considered did result in modest reductions in fuel poverty and were of particular benefit to older single person households. However the research also concluded that couples with dependent children were more likely to be fuel poor under all four of the options. NEA’s interpretation of this research is that a significant minority of low-income households do face disproportionately high energy costs and would experience further detriment were charges to fund the Energy Company Obligation to be linked to consumption.

Despite these reservations NEA recognises that the majority of fuel-poor households would stand to benefit from a consumption-based approach and that this would represent modest progress in making the current practice less regressive. We would therefore endorse movement to a consumption-based model of customer contribution whilst urging Government to recognise concerns over implications high consumption fuel-poor households and the need to address resulting adverse consequences through the welfare benefits system.

Direct funding of energy efficiency programmes through HM Treasury represents a more progressive and equitable approach as there are limitations to further increasing the burdens on consumers. Because of constrained public finances, this may be difficult; however this will be increasingly viable when hypothecated revenue such as auction receipts from the EU Emissions Trading Scheme and revenue that might be generated by a carbon price floor price will be available to HM Treasury.

The EU ETS currently covers the direct emissions of CO2 from large scale emitters (capacity over 20MWth) including power stations, major industrial emitters, CHP plants, and a number of institutional emitters (eg large hospitals). Installations must surrender allowances to cover their total emissions each year. Allowances are obtained either from their allocation or bought from the market. According to Deutsche Bank, selling carbon emissions permits to businesses participating in Europe’s carbon trading scheme could raise 60 billion euros ($85.24 billion) a year for European Union governments from 2013.

In November 2006, the European Commission launched a review of the EU ETS, as required under Article 30 of the EU Directive on the EU ETS, with the aim of proposing an amended Directive which would improve the functioning of the System from 2013 onwards. The proposed amended Directive was published on 23 January 2008 as part of the European Commission’s broader Climate and Energy package. The purpose of this consultation was to seek views on the Commission’s proposals set out in the amended EU ETS Directive and Member State’s positions on them.
The Commission proposal stated that at least 20% of revenues from auctioning (in phase 3) should be earmarked for a range of climate, or fuel poverty measures. The Commission specifically listed the following uses:

- Reduce GHGs, including through contributions to Global Energy Efficiency.
- Renewable Energy Fund, for adaptation and to fund research and development.
- Develop renewable energy to meet 2020 20% target and to meet energy efficiency targets.
- For CCS.
- Avoid deforestation in Least Developed Countries.
- Adaptation in developing countries.
- Address fuel poverty.

The UK Government was opposed to the Commission’s proposal to hypothecate or “earmark” the revenue from auctioning as it would contravene the Government’s principles on the sound management of public finances. They stated:

"Earmarking, or hypothecation is an inefficient means of determining public expenditure priorities, which prevents judgements being reached in the round on the relative prioritisation of competing public expenditure programmes. It also introduces a direct link between the level of funding for a particular programme and the buoyancy of the revenue stream used to finance it, removing the flexibility to allocate resource according to need and exposing the programme to greater risks if the revenue stream proves less predictable than expected. Imposing legally binding hypothecation at EU level is also contrary to the principle of subsidiarity. The Government believes that these decisions are best taken at national level”.

To date the UK Government has generated limited income from auction receipts. However (once p3 of the EU ETS is introduced and the Carbon Floor Price) the Treasury is likely to raise more than £2 billion in carbon revenue next year, with the Treasury raking in £4 billion each year by 2020 and £7 billion by 2027. This is enough revenue to super insulate more than 600,000 homes every year over the next 15 years. It could bring nine out of 10 homes out of fuel poverty, quadruple carbon emission cuts compared to the Government’s energy efficiency policies and create up to 200,000 more jobs.

6. Conclusion

The Government can do little to disguise that these proposals will add substantially to already soaring energy bills and place much more risk on domestic energy consumers. Further work is required to quantify these risks and who they most affect.

Whilst NEA supports reform of the energy market, it looks as though those on the lowest incomes (and those that use least energy) will suffer the most and are least likely to be able to counter the increase in cost by taking advantage of other existing government policies. This requires a response. The most natural place to start is to adapt current policies (and/or those currently being developed) in order to illustrate to a sceptical public that social and environmental objectives are not necessarily in conflict but also to avoid genuine hardship.

NEA believes these concerns should also prompt a major, cross party, rethink and ensure that distributional equity is hardwired into Government energy policy in the future.

As highlighted above, as a direct result of the EMR proposals, Treasury is likely to generate (through VAT on consumers’ increased energy bills and increased carbon taxes) substantial revenue, ultimately there will be a need to invest this back into an ambitious energy efficiency programme, targeted at the most vulnerable.

Written evidence submitted by Engineering the Future

This response has been developed by:
- The Institution of Engineering and Technology.

The response is supported by:
- The Institution of Chemical Engineers.
- The Institution of Civil Engineers.
- The Institution of Mechanical Engineers.
- The Royal Academy of Engineering.
PRE-LEGISLATIVE SCRUTINY OF THE DRAFT ENERGY BILL

Initial Evidence from Engineering the Future, developed by The Institution of Engineering and Technology and supported by The Institution of Chemical Engineers, The Institution of Civil Engineers, The Institution of Mechanical Engineers and The Royal Academy of Engineering.

1. Engineering the Future is pleased to provide this initial response to the draft Energy Bill. In the brief time available we have focussed the response around a number of key questions which we hope the Committee will find helpful in framing its evidence sessions. We will be following up this initial response with more considered written evidence, including more on potential solutions.

Systems Issues

2. The Bill does not seem to address the energy system as a whole, despite the Government’s policy intention to substantially electrify heat and transport in the longer term. In the case of electricity it is worth re-iterating that supply and demand have to be in balance on an instantaneous basis, and the integration of the various low carbon options into a workable system will become a significant technical challenge as their contribution increases. The draft Bill is a framework with gaps where strategies are still being worked on, but these strategies seem fundamental to the overall success of EMR.

3. Other policy documents discuss large-scale electrification of heat and transport which, the CCC predicts, will double the load on the electricity grid. It is not obvious how these assumptions have been incorporated into this policy, whether such an ambitious combination of targets will be deliverable within the framework of other Government policies.

4. Particular questions that suggest themselves are:
   
   (a) How does the Government intend to ensure that the energy system as a whole is developed in an integrated way to meet its policy goals at a reasonable cost?
   
   (b) Gas is seen in the Draft Bill primarily as a backup/flexibility contributor in a world dominated by inflexible nuclear and variable renewables. But an urgent issue is getting enough gas fired plant built quickly to replace coal, oil and possible AGR closures, yet there is nothing to create confidence for gas investment in the short term. Given the range of scenarios of plant closures, new nuclear delays, and demand recovery, how will Government ensure sufficient gas fired plant gets built to plug short term gaps while also ensuring that the EPS is subsequently tightened to prevent overly large scale gas build later?
   
   (c) The underlying assumption of large scale electrification of heat and transport needs to be challenged as the engineering profession is not yet confident that this will be effective. How will the Government handle the resulting uncertainty whilst still ensuring sufficient investment in generation capacity?
   
   (d) We note further work over the summer will look at further incentives coming out of DECC’s work on demand management. How will this be integrated into the rest of the measures? Is the role and support for interconnection, energy storage and—especially—demand-side measures clear enough? Will there be sufficient provision for the encouragement of smart grid and electricity storage and other demand shifting measures to reduce peaks in demand? If not, is there a danger that some potentially beneficial measures may be locked out of the future system?
   
   (e) Demand reduction is key and is to be delivered by the Green Deal and smart metering. However, these are untested. Again, how will the Government handle the resulting uncertainty, including uncertainty over timing of eventual demand reduction?
   
   (f) There are huge uncertainties as to how the future energy system will develop. How has the Government addressed this in its risk analysis of EMR?
   
   (g) People are key part of the energy system. What does Government propose to do to engage consumers positively in the debates around the underlying reasons for increasing energy prices and the affordability of future energy supplies?

The 2008 CO2 reduction targets

5. Although the draft Bill makes clear the Government’s intention to remain committed to the 2008 Act, the reality on the ground, with nuclear being at best delayed, means we will need substantial new build of gas fired power generation by the mid-2020s, with commitments by investors commencing in the near future.

   (a) Given that the proposed emission performance standard will be grandfathered until 2045, how will this be managed in the context of seeking a power sector largely decarbonised by the 2030s?
The extent to which we still have a market, and its complexity

6. More and more of the market is moving out of the competitive sphere into something more rigidly controlled by Government, leaving a relatively small competitive segment behind (essentially gas fired plant) and even that will be impacted by the capacity mechanism. Hence major investment in generation will be largely determined by Government via CfDs (for low carbon generation) and the Capacity Mechanism for gas fired plant. The document recognises that the desired long-term outcomes cannot be assured by the present market arrangements but, by attempting to manage the outcomes within a market framework, incurs high levels of complexity and poor transparency.

(a) Plant closures are proceeding apace and as well as coal and oil may include AGR nuclear, as technical issues in their life extension remain unresolved at present. Demand may or may not recover depending on UK economic performance. What arrangements is the Government putting in place in the short term to evaluate realistic downside scenarios for capacity margin, and the emergency procurement of capacity if necessary?

(b) We have not found much consideration of the role of demand management and of storage in the system. What level of analysis has the Government undertaken in this area and how has it been recognised in the EMR measures?

(c) There seem significant downside risks in EMR owing to its complexity. Has the Government considered alternatives such as a carbon tax, or reverting to an overtly state controlled sector (albeit with private sector providers)? If so why were these rejected in favour of the present draft Bill?

Contracts for Difference

7. For over 20 years renewables have benefited from support from the Non Fossil Fuel Obligation and then the Renewables Obligation. Nuclear also received support from the NFFO. Hence Contracts for Difference (CfDs) is the third mechanism to be introduced since privatisation to provide support to generation which is unable to compete in the competitive market.

(a) The intent of the CfD is to reduce electricity price risk thereby improving the prospects for financing as well as reducing the associated costs of finance. However, there are many other project risks, eg cost overruns, technology failure, construction delays, etc. How will the Government ensure that project developers do not include a price premium in the CfD to cover such risks?

(b) How will the proposals to increase market liquidity and hence price discovery for CfD reference prices be implemented, noting not only the present issues caused by inter-company trading but potentially future issues when the competitive part of the market has shrunk further?

(c) Whilst EMR is intended eventually to evolve into a technology-neutral platform, it is clearly envisaged that CfDs will be used to support renewable technologies for the short and medium term, and priced differently by technology. Does the Government intend to specify how many MW of each technology it envisions to be built as part of each five year strategy, so that investors and their supply chains can plan accordingly? The target amounts themselves need to take account of power systems impact as well as affordability, deliverability and other constraints. Some confidence and transparency is needed in this area to allow markets to evolve amongst project investors and supply chains, including novel supply chains for balancing services. How is this to be achieved?

(d) How is Government proposing to establish the CfD counterparty?

(e) Is the Government considering extending the mechanism to facilitate rapid investment decisions to developers of gas fired plant—or some other mechanism, as some of this is needed urgently?

(f) We note that Government intends to negotiate directly with nuclear project developers for CfDs. How will the Government benchmark costs to ensure value for money?

(g) We note that Government intends to use a single strike price which is indexed to inflation. The risks with this approach is that many of the project’s costs will have a very different form of indexation involving multiple indices including those exposed to exchange rate movements. As a consequence the CfD could deviate substantially from project costs, particularly for very long term contracts which may be required for nuclear and plant with CCS. Has consideration been given to an alternative arrangement whereby the CfD covers one component of the project’s costs such as part of the project’s loan facility?

(h) We note that CfDs take no account of the fact that generation has different worth to the system at different times of the day and of the year. (For example it is more valuable on an early evening in winter than a summer afternoon.) How are incentives to be developed which reflect this time value, eg to ensure maintenance schedules are scheduled optimally or to assign less value to solar PV output which typically makes most contribution when demand is low.
Capacity Market

8. The introduction of specific incentives for low carbon electricity generation plant means that investment conditions for conventional thermal power plant have become less certain, and such conventional plant will be needed in the future, both in the shorter term to ensure supply security, and in the medium and longer term as backup to variable renewables. For such plant to be able to fulfil this backup role it will need sufficient flexibility and control to allow effective management of variable output renewables, inflexible nuclear and a mix of controllable demand and potentially large swings in demand arising from new classes of load such as electric vehicle charging.

9. The extent of backup needed is currently very unclear, and to a degree the industry will be learning as it goes along. Hence within the context of the other parts of EMR, we would be supportive of a capacity mechanism.

(a) The capacity mechanism appears designed to encourage retention of old plant where possible, demand reduction measures and potentially building cheap open cycle gas turbines. These would all potentially be capable of paying back within the 5 years allowed. However pumped storage and other electricity storage technologies, which are vital components of a low carbon energy system, are longer term investments. How does the Government intend to incentivise this type of investment?

(b) How will the Government trigger the capacity auction? We believe this will need an element of judgement and realism, not just hard evidence, because it will be necessary to second guess whether and at what time investors will commit. Transparency will be important owing to the impact on investors, but will be difficult to achieve in these circumstances.

(c) How will the Government ensure that appropriate flexibility and control is available from generation operating in the capacity mechanism?

Emissions performance standard

10. We appreciate the need to balance reducing emissions from thermal power plant in the short term with needing to encourage new thermal power plant to come forward to ensure sufficient generation is built over the next few years to replace old plant that closes down. Within the context of EMR this seems a broadly reasonable approach, however some issues arise, as below:

(a) There would appear to be a loophole that would allow plant offering a Carbon Capture and Storage (CCS) demonstrator component for part of its output to not be covered by the EPS, which would potentially allow a plant with only partial CCS and high emissions to continue to operate for an extended period. This would not be consistent with decarbonisation of electricity by the 2030s. What is the Government’s vision for moving beyond the CCS Commercialisation Programme to address this?

(b) How does the Government intend to incentivise combined heat and power within the context of the EPS?

Carbon Floor Price

11. The EU ETS has failed to deliver a robust and stable carbon price of sufficient magnitude to support investment in low carbon generation. The Carbon Floor Price (CFP) attempts to address this failing. However, this will increase electricity prices to British consumers and risks adversely impacting British industry.

(a) Would it have been better to have concentrated efforts on fixing the EU ETS rather than going it alone?

(b) With the CFP in place what assurances can the Government give that it will not lose sight of the importance of addressing the EU ETS failings for Phase 4 which commences in 2021?

(c) The clarity on carbon floor price is helpful, but has the Government tested this against latest estimates of new nuclear construction costs to see if sufficient incentive exists?

Energy Strategy and Policy Statement

12. We welcome the concept of clear strategic direction from Government, but it is important that strategies are not changed without good reason. In particular the suggestion that a change of Government could be the occasion for an early policy review does not give the required level of confidence. Supply chains need to invest over many years, and the development of engineering and craft skills can take decades.

(a) What will be put in place to guard against major and sudden changes in strategy without very good reason?

(b) Will the strategy contain specific policy goals about the amount of each generation source to be developed?

(c) What is the Government’s plan to join up heat, transport, demand reduction and energy efficiency strategies most of which involve other Government Departments as well as DECC?
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(d) The Statement will define clear outcomes that Ofgem will have an important role to deliver. However, Ofgem’s remit is limited to electricity and gas. Who will be responsible for the other components of energy policy such as heating and transport? How will they be integrated?

(e) How does Government plan to deal with the scale, sophistication and open-ended nature of the programme management challenge?

June 2012

Written evidence submitted by Dr David Toke

SUMMARY
— It is wrong that nuclear power should be given access to similar funding streams as renewable energy, and it would be ridiculous for nuclear power to be given financial concessions that are greater than those given to renewable energy.
— Given the unlikelihood that new nuclear build will be competitive with widely available large-scale renewables, proposed subsidies for nuclear power should be transferred to support renewable energy and energy efficiency.
— Subsidies must be transparent.
— The Contracts for Differences system is inefficient, opaque, and restricts competition compared to a German-style fixed feed-in tariff.
— A fixed FIT would allow equal opportunities for the independent generators compared to the main electricity suppliers.
— Incentive systems proposed for renewable energy seem as much designed to limit renewable energy as to incentivise it.
— Auction systems designed to award renewable energy contracts after 2017 are inappropriate, and unworkable in the case of onshore wind
— Little serious consideration seems to be given to the implementation of the EU Renewables Directive which requires a focus on volume deployment rather than caps and auctions.

1. Relative financial concessions to nuclear power and renewable energy
My own analysis, in addition to the analysis performed by Michael Atherton, implies that EPR reactors would require a strike price of over £160 per MWh. This would be necessary to create the due diligence conditions to allow new nuclear build investment by a company such as EDF to go ahead and satisfy the sort of terms demanded by credit rating agencies. This is significantly higher than the funds currently being paid to offshore windfarms. It is approximately double what is likely to be paid to onshore wind power schemes.

2. This assessment deviates from those made previously by Government and the Committee on Climate Change. However these did not take into account either the full extent of cost overruns in the two EPR power stations being built. Neither does it take into account (a) the fact that the capital for these power stations will have to be raised from company equity as banks will not lend and (b) the considerable levels of uncertainty about construction costs and times for nuclear power station meaning that their investments will be assessed at much higher internal rates of return compared to renewable energy schemes.

3. It seems unlikely that the Government could be seen to allow a higher level of support from electricity consumers (per MWh) to be paid to nuclear generators than offshore windfarm operators since there is a bigger majority of public support for funding offshore wind power compared to nuclear power. There is certainly considerable offshore wind power capacity available, with The Crown Estate having issued around 48 GWe options representing over 35% of UK electricity consumption—and this figure does not include considerable quantities of other renewables.

4. Consequently the only way that the strike price for nuclear power is to be held down to levels that look more politically acceptable will be achieved through the Government underwriting nuclear construction costs. This may be presented as some sort of normal, technical option but would in fact represent a massive state subsidy to nuclear power that is not available for renewable energy.—The blank cheque option. Whatever the exact configuration of such a move it would have a high opportunity cost in that renewable energy projects could, if offered similar support, be able to set up in greater numbers at lower costs and at greater deployment speed compared to the nuclear power stations. Such a move would represent a very clear breach with Coalition Agreement commitments not to give subsidies, at least ones that are not available to other power plant including renewable energy.

5. The “blank cheque for nuclear” option would also fall foul of EU rules on state finance. Renewable energy support schemes are subject to strict protocols which would be clearly breached by underwriting construction costs. I note that the Conservatives stated, in their policy document on energy issued just prior to the 2010 General Election that: we agree with the nuclear industry that taxpayer and consumer subsidies should not and will not be provided—in particular there must be no public underwriting of construction cost overruns (Conservative Party 2010: 18). I note Ed Davey’s insistence that there will be no blank cheque for nuclear. If that is the case then the prospect of a new nuclear programme is at an end. The Government should recognize
the uncompetitiveness of new nuclear power and move on to shift resources originally earmarked for nuclear power to be offered to renewable energy and energy efficiency. We need now to discuss how renewable energy and energy efficiency schemes should be better organized.

6. Ed Davey has suggested the use of transitional contracts to help secure investment in low carbon generation prior to 2017. Any project-specific transitional contracts should be issued must be done in a transparent manner so that the contract prices are known in advance.

7. Nuclear power uses a non-renewable resource (uranium) and so should not be offered subsidies similar to renewable energy. It is even more unacceptable that nuclear power should be given access to greater support than is available to widely available renewable energy schemes such as wind power. Given that nuclear would require such support, it is apparent that a policy of trying to promote new nuclear build is misguided, and thus policy should be re-shaped to see renewable energy and energy efficiency as the policy objectives that need Governmental support.

8. Contracts for Difference. The contract for differences’ (CfD) method of organizing feed-in tariffs for nuclear power and renewable energy is a retrograde step. The CfD proposal is widely held to be an inferior and certainly less cost-effective methods of financing renewable energy compared to the tried and tested fixed feed-in tariff mode of operation.

9. The CfD system has serious repercussions for independent renewable generators. They will have to contract in advance on the wholesale electricity market to sell their electricity. This is disadvantageous in two ways. First because there will be a discount on sales of electricity sold this way on a scheme by scheme basis when it would be much more efficient for the system as a whole for sales of electricity from renewables to be organized by the System Operator. This observation has already been made by David Newbery who estimated that this would result in substantial wastages of subsidies, much of which could be earned by the major electricity companies for no added value to the system. In addition independent generators of less than around 100 MW cannot trade on the wholesale market directly. They simply will not usually have the financial credentials to do so. They will be forced to contract with major electricity suppliers, who, on past evidence of such deals, are likely to absorb around 20% of the income stream. This will make things very difficult for independent generators.

10. The CfD system makes it effectively impossible to make an exact determination of the level of subsidies for different fuels. This is because trade in wholesale electricity is done on a commercially confidential basis and so it will not be possible to calculate exactly how much subsidy has been gained to reach the reference strike price for a particular fuel. This will only be alleviated if the National Grid (or whoever pays the subsidy to generators) reveals the payments made. Annex B of the legislative proposals is replete with complex proposals for dealing with complexity of the CfD mechanism. This complexity is a problem in itself which can only but allow the large electricity companies opportunities to game the market to their advantage.

11. The Renewables Obligation also had cost inefficiencies built into its system since it involves greater risk of variation in future returns to developers compared to a fixed feed-in tariff system. However, it gave much greater opportunities for competition than the CfD system offers. This is because the generators themselves receive the incentives, the Renewable Obligation Certificates, which they can sell on an open market. The CfD requires any independent developer to be beholden to the contractual terms of an electricity supplier for the whole of their income stream.

12. The solution to these problems is to have a “fixed feed-in tariff” system on the German model. We already have one in operation to support the small renewables programme. It would be a relatively simple matter to use a broadly similar structure to this instrument and have a fixed feed-in tariff for large scale renewables. The system is administered by OFGEM. Under the current system suppliers are obliged to pay proscribed tariffs to renewable generators. Under a scheme suitable for larger scale projects suppliers would be obliged to issue contracts of a model type offering pre-determined guaranteed prices over 20 years. The money thus paid out by suppliers to renewable operators would then be reclaimed from OFGEM. OFGEM would reclaim this money via a levellised levy on all electricity consumers. This would be much more transparent, more cost effective and also offer more opportunities to independent renewable energy generators compared to a CfD.

13. A German-style fixed feed-in tariff system (what we could call as real feed-in tariff scheme) has the advantage of supporting renewable energy schemes independently of the Big Six electricity companies who dominate the market. The CfD proposals, by making independent renewable companies beholden to them, would reduce competition in the electricity system just at a time when the Big Six are under attack for the consequences of the existing oligopolous market.

14. Security of Supply The Government’s own projections of availability of generation capacity now suggest that in 2025, there would still be just about enough capacity to cover current peak electricity demand even without any contribution from variable renewable energy supplies (DECC 2011). This is the position even if no other generating plant were built, and taking into account projected plant closures. Yet there are plenty of plans for more gas fired power stations to be built, so it does seem that there is no danger of the lights going out. Indeed the Government, in its EMR, is proposing further measures to promote the building of gas fired power stations through the capacity mechanism. The role for renewables here is to expand their operation so
that they increasingly reduce the need to use this gas generation capacity. We need innovative means to integrate fluctuating renewables in the grid. There has been much talk of the growth of electric cars but there is very little work being done on utilizing their ability to store and discharge energy to suit the need to balance variable renewable energy sources. Neither is there sufficient thought within the proposals on measures that are needed to support a range of demand response techniques, or, indeed, on conventional energy efficiency measures.

15. Targets, Caps and Auctions “Annex B” of the legislative proposals outlines various options for caps, volume control by prices and auctions. These devices imply that a central purpose of the legislation is to limit renewable energy development, and, once again, have the effect of introducing uncertainty into investment decisions, rather than achieve the sort of volume needed to come anywhere near meeting the UK’s EU Renewables target. If the current trajectory of renewable deployment continues until 2020 there will be no more than around 7% of UK energy supplied by renewables compared to the EU target of 20% by 2020. The Government is determined to introduce auctions for contracts, despite their notoriously poor record in achieving deployment.

16. The Energy Bill proposals talk of adopting a Danish system of auctions which has been deployed to set prices for offshore windfarms. Given this, it is worth spending some time on critiquing the use of this instrument. In fact this (Danish) system has so far yielded only 400 MW of capacity in nine years. The latest version of this mechanism, which is recommended for use by the Government, does not seem to be performing well in producing volume deployment, and the cost reductions are illusory. Impressions that the Danish system has reduced prices are misplaced and notions that this auction system can usefully be utilized for onshore windfarms represent a misunderstanding of the relevant institutions—perhaps a classic case of how a rule bound economist approach fails to take into account relevant institutions.

17. The Danish system’s yield of relatively low prices can be ascribed to the low water depth compared to Round 2 UK windfarms. For instance Greater Gabbard, a typical example of the UK projects, has a water depth of 20–32 metres while the last Danish offshore windfarm, Rødsand II, has a water depth of only six–12 metres. Even so this project ran into trouble when the original developer who had won the contract withdrew, and they had to be replaced. As a result the system was changed so that failure to complete the project bears a penalty. This has been followed by the setting of a higher price for the next project, Arnholt, which has an agreed price of 10p/KWh. This is still, at 15–19 metres, at a rather lower depth than the UK’s Round 2 (and also Round 3) windfarms. It should also be remembered that this site was specially selected by the Danish Energy Agency, and thus there is likely to be a much higher knowledge of a range of factors (including grid connection and guaranteed planning consent), at the time of making a tender, than in typically British projects.

18. Taking into account the fact that the fixed-feed-in tariff used by Denmark produces cost savings of lower interest rate charges on project debts compared to the Renewables Obligation (where currently prices of around £135 per MWh/13.5p/KWh are payable), there is no case for arguing that this Danish procedure results in a measurable cost saving. Establishing such a procedure in the UK would undercut the Round 3 preparations and will likely lead to extensive delays as new projects are formulated and investigated.

19. However, it would be much worse if this (auction) procedure was re-established in the UK for the onshore wind sector. This could mean a return to the sort of NFFO system sued in the 1990s where, because of a combination of over-optimistic tenders for contracts and the failure of projects to achieve planning consent, only about 30% of projects given contracts are likely to be implemented. Notions that better results would be obtained by employing a penalty fine system for non-compliance are misplaced. The penalty would be simply added to project costs, nullifying potential savings, but in addition it would in reality be very difficult to enforce penalty fines since it would be foolish, if not impossible in practice, to hold the developers responsible for failure to gain planning consent. In practice several factors are unknown to the developer, planning outcome being perhaps the biggest, but also grid connection costs, and even windspeeds, which, being usually very site-specific in inland UK, will not be known with as much precision in advance compared to offshore windfarm cases. In short, the Government’s proposals for auctions for onshore wind contracts are unworkable.

20. In fact the auction system is scheduled to be applied to onshore wind before other renewable energy technologies, despite it being even less applicable than these other technologies. Onshore wind is scheduled to be the first to be subject to this auction procedure because it is said to be a more mature technology. The technology may be mature, but the land use and grid-connection planning environment in which it has to cope contain many uncertainties that will lead to the non-implementation of a large proportion of projects that nominally win contracts under an auction system.

21. There is no tremendous problem with running fixed feed-in tariff system that needs to be fixed, let alone by an auction technique that is likely to restrict deployment rather than enhance it. Very low prices have been obtained in Germany for wind power for many years. What is not often appreciated in the UK is that windspeeds in Germany are much lower than in the UK, so the feed-in tariff rates given to wind power in Germany really are very low compared to the Renewables Obligation in the UK, where the average capacity factors of projects is much higher compared to Germany. In Germany the rates are set by law following studies done by analysts and negotiations between Government and trade associations. A similar pattern in the UK would reap benefits and a system could emerge that has the advantages of low cost and high deployment rates. This is especially necessary given the economic failure of the nuclear power alternative.
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Written evidence submitted by Seajacks

ABOUT SEAJACKS

Seajacks is the leading UK-based operator of purpose-built offshore wind turbine installation vessels. We currently own and operate three self-propelled vessels—the “Seajacks Leviathan”, “Seajacks Kraken” and the recently launched “Seajacks Zaratan”.

Originally designed to facilitate the service and maintenance of offshore oil and gas platforms in the North Sea, the three current vessels have been modified to facilitate the installation and maintenance of offshore wind turbines. The vessels we operate are huge; Leviathan and Kraken both displace 7,000 tonnes, whilst Zaratan displaces 14,000 tonnes.

Seajacks is based in Great Yarmouth and Lowestoft and has total assets worth approximately £800 million. It employs over 200 people and as well as direct jobs, we estimate that we inject approximately £2 million per year into local businesses. In March of this year we were acquired by the Japanese company Marubeni Corporation, although we very much consider ourselves to be a UK business as 95% of our staff are British. We also became the first business to move our premises inside the newly created Great Yarmouth Enterprise Zone and therefore one of the first businesses in the UK to move into an Enterprise Zone.

We already have a strong track record of working in the industry. In recent months we have worked for Dong Energy installing wind turbines at the Walney offshore wind farm in the Irish Sea, and also off the east coast of England on the Greater Gabbard wind project—the world’s largest offshore wind farm. The newly delivered Zaratan will start its first assignment in September where it will perform the installation of 80 wind turbine generators and foundations alongside Seajacks Leviathan on the Meerwind wind farm in Germany.

OUR VIEW ON KEY POLICY PRIORITIES

1. Seajacks welcomes the Draft Energy Bill, the Government’s recognition of the enormous growth opportunity offshore wind represents for the British economy, and applauds the Government’s desire to secure the investment needed. As a non-generator, Seajacks’ submission to this inquiry will focus primarily on the potential for economic growth as a result of investment in offshore wind.

2. As the Bill rightly recognises, the next ten years will see a fifth of all power plants close. Renewable energy is necessary to keep the lights on, and investment is desperately required. Like others in the industry, we have repeatedly made clear that securing investment and enlarging the UK supply chain depends upon there being investor confidence and certainty.

3. We welcome the steps that the Government has taken in providing some level of detail on the Contract for Difference (CfD), as well as the soon to be published response to the consultation on banding for the renewables obligation. However, we share concerns raised by others in the industry that the CfD is overly complex. An understandable and effective functioning CfD is crucial for investor certainty, and the Government must provide further clarity about how exactly it plans to guarantee prices for generators.

4. The need to do this is underscored by the extremely tight timetable that we are on if the UK really is to meet its 2020 targets. The Government must deliver investor certainty quickly; without it commitments will be difficult to secure, and without orders it will be difficult to create jobs in the UK supply chain. With this in mind we are especially concerned by the Government’s plan to not consult on the strike price until 2013. This is a decision which we urge the Government to review.

5. We are also concerned that given the short timetable, and the Government’s apparent retreat from a commitment to decarbonise the electricity market by 2030, this Government may opt to roll out a very significant number of gas-fired power stations. Such a step would be politically and environmentally regressive, and would miss a once in a lifetime opportunity to preserve the environment in a way that generates huge economic growth for the UK.

6. The Government has made clear that a fifth of all power plants are due to close in the next decade, and that investment surge is necessary in order to provide the £110 billion worth of electricity and energy transmission infrastructure needed to keep the lights on.

7. We also have concerns which need to be addressed alongside the bill.
8. Assuming investor certainty can be provided through CfD it will be imperative that the Government takes steps to ensure that it is British firms and the British economy that which benefits directly from the offshore supply chain.

9. As part of this, the Government must take steps to create an environment in which British firms are best placed to be active participants in the offshore wind supply chain, and are able to match and effectively compete with competitors from Europe and farther afield.

10. Transforming the Government’s vision for Britain’s renewable future into successful policy will, by itself, be far from straightforward. But the Government must also heed its own objective of supporting business and ensure that this historic opportunity for growth yields its true potential for Britain.

11. We are concerned by the mixed messages on wind investment coming from different government departments. Although the uncertainty seems to be greater for onshore wind, it is clear that many believe offshore wind should not be supported either. We would urge the Select Committee to continue to support offshore wind and ensure that the benefits of supporting offshore are recognised not just in environmental terms but also for supporting jobs and growth especially in areas of need such as the east of England.

12. By any standard Seajacks is an enormously successful company. Just imagine the growth potential of companies like ours if the Government took steps to ensure that British business was best placed to seize the historic opportunity represented by Britain’s renewable future. We would urge the Select Committee to encourage the government to ensure this happens through reform of the electricity market. Companies like us need offshore wind developers from all over the world to have the confidence to invest in UK renewable, otherwise we will find valuable jobs and growth disappearing to countries with more progressive support regimes.

June 2012

Written evidence submitted by Andrew Mackay

Summary

The Government’s energy and climate change goals to deliver secure energy on the way to a low carbon energy future and drive ambitious action on climate change at home and abroad is laudable. Unfortunately, it is not working now and will never work in the future, because of the reliance on fossil fuels to provide back up for intermittent generation of electricity from non-thermal renewables.

The failure of Government energy strategy to force change to non-intermittent supplies of electrical capacity from non-thermal renewables like wind wave and tidal will inevitably lead to daily brownouts and blackouts becoming a feature of daily life.

The ability of intermittent and random renewable generation to decarbonise electricity using Combined Cycle Gas Turbines (CCGT) as balancing plant is very poor. A CCGT plant plus wind will burn just 7.6% less gas annually than a CCGT plant running 24–7–365 at its optimum efficiency making a “saving” of just 3gCO2equiv./MWh(e) and not the 43gCO2equiv./MWh(e) claimed by the Renewable Energy Industry and casually accepted as fact by DECC and other governmental and non-governmental organisations in the field.

A secure and reliable energy supply is vital to our economic and social wellbeing. Existing energy markets and regulatory frameworks have delivered reliable and affordable energy over the last century on the back of burning relatively cheap fossil fuels like oil (pre 70s) and coal and natural gas up to the present day. Over the next decade, around a fifth of existing thermal power plants are due to close making the UK even more reliant on burning dwindling supplies of imported coal and natural gas to raise steam to keep the lights on. Assuming a projected increase in electrical demand of just 7% will result in doubling the amount of electricity that needs to be generated in just 10 years.

The Draft Energy Bill lacks vision. There is no incentives to encourage innovation and invention in the field of renewables, in fact quite the reverse, the Bill in its present form will incentivise maintaining the status quo where all future non-thermal renewable electrical will continue to be intermittent and 100% reliant on dwindling supplies of imported natural gas until the exporting countries decide to hoard supplies for their domestic use.

Electricity market reforms are vital to incentivise the generation of secure and reliable electricity 24–7–365 from intermittent sources of non-intermittent renewable energy resources such as wind, wave and tidal streams that does not rely on the burning of any fossil or so called bio-fuels to provide back up.

To meet governmental climate change goals it is imperative that we stop burning fossil fuels altogether. To incentivise and create much needed “investment surge” in electricity generation over the next decade to enable the generation of twice as much electricity we must move away from intermittent renewable generation to meet our climate change goals.

The legal and moral imperative for the UK to cut significantly our carbon emissions and to be a world leader in the climate change challenge will never be met by the continuation of this flawed energy strategy of generating random pulses of electricity subject to the vagaries of the weather and tides.
— We must decarbonise Britain’s electricity generation, to meet our Carbon Budgets, by generating safe and secure renewable electrical capacity not intermittent and unreliable electricity that requires fossil fuels to provide backup.

— Carbon Capture and Storage (CCS) will never play a role in our future energy mix because the numbers do not add up. There will be no coal left to burn in the world by 2040 so spending money on this dodgy enterprise now will never bear any fruit in the future in a planet devoid of fossil fuels. The government’s assumption that there is a trillion tonnes coal left is based on pure conjecture.

— The electricity market needs reform to reduce the risk and cost of capital for all low carbon technologies. The most effective way of achieving a safe and secure electrical supply is to stop paying Renewable Obligation Certificates (ROCs) for intermittent supplies of non-thermal electricity by the year 2015. This will, at a stroke, force companies in the renewables’ sector to modify their generators to deliver high quality firm synchronous electricity that does not rely on imported fossil fuels from politically unstable counties who could hold us to ransom in the future.

— The United Kingdom has already establishing itself as a “hub for intermittent renewables expertise” which will be of no benefit when there are no fossil fuels left to burn. Forcing the moribund renewable energy industry into a bright new future of secure renewable electrical capacity by withdrawing ROCs for intermittent electricity by 2050 will attract inward investment from around the globe.

— The UK Carbon Capture and Storage Industry may be worth £6.5 billion a year to the UK by late in the next decade as we export UK expertise and products but it will never happen. The challenge to the nuclear industry to build a new generation of reactors without public subsidy is not going to happen either. There are much simpler ways of raising steam from non-thermal renewable energies.

— The challenge can be achieved in a “big bang” by scrapping ROCs for intermittent non-thermal renewables. This will give investors the chance to get a very good return on their investments. It is probably already too late for a “phased approach” and decisive action is required to move away from ALL reliance on fossil fuels.

— Gas generation cannot continue to play a critical role after 2020 because the costs of “buying in” this fuel will have quadrupled several times by then and the UK will have to buy twice as much of it by then to prevent rolling blackouts. The “government calculations” as supplied by the renewable energy industry on how much gas will be saved from combustion are seriously flawed—there will be perhaps a nominal saving of around 7.6% for generation purposes but gas in this sector only accounts for a third of total gas consumption.

— A reliable and flexible electricity source to meet core demands now and balance demands in the future is unachievable with intermittent renewables.

— Strategies on energy security based on a never ending supply of natural gas to balance intermittent generation are seriously flawed and based on the uncorroborated hearsay “evidence” of the renewable energy industry. Commonsense, dictated by the certainty that the world will run out of fossil fuels one day in the near future, will prevail. This Draft Energy Bill is lamentably short-sighted, inadequate and not-fit-for-purpose because it does absolutely nothing to prepare for that day.

— The Government’s determination to move forward has had the opposite effect and has selected reverse gear in a box full of neutrals. This Bill is a wasted opportunity because it simply gives us more of the same based on the erroneous assumption that intermittent generation backed up by fossil fuels is the only option available.

— The government should not be led by an industry devoid of innovation and demand renewable electricity 24–7–365—nothing short of this will do. HMG is being systematically dictated to by the renewable energy industry that has, in forty years of endeavour, come up with unreliable devices that deliver unreliable unsecure electricity subject to the vagaries of the weather and tides.

— The government should not allow any more thermal power stations to close but convert them to run on renewable heat derived from the kinetic and potential energies in wind, wave and tidal streams. Renewable heat can easily be stored in giant thermal accumulators built underground adjacent to existing fossil fuel generators at a cost of the £1 billion that has already been set aside for the harebrained CCS “experiment” that will never work.

— Supplying our existing stock of thermal power plants with heat derived from infinite renewable energy sources will give UK plc the economic advantage of electricity too cheap to meter.

— Time is of the essence and the sooner we abandon supporting the intermittent renewable energy experiment and start providing alternative heat sources to create “green steam” the better.

**HMG 1:** Energy is essential in almost every aspect of our lives and is fundamental to the success of our economy. The Annual Energy Statement, published in November 2011, set out the Government’s plan to support the transition to a secure, safe, affordable and low-carbon energy system, and mobilise commitment to ambitious action on climate change, internationally.

**AHM:** I agree, energy is essential and fundamental to the success of our economy but **renewable energy in its present format is it not delivering secure, safe, affordable and low carbon electricity.** Reliance on dwindling reserves of fossil fuels makes it difficult to garner commitment to ambitious action on climate change internationally.
The Erroneous and dangerous assumption here is that there is a never ending supply of fossil fuels and that supply and demand market forces will not apply.

Comment: The UK’s economy and balance of payments will be wrecked unless our reliance on burning fossil fuels to raise steam is broken completely.

Solution: The obvious solution is to convert the massive renewable energy resources directly into renewable heat and store it. Secure, safe, affordable and low carbon thermal electricity can then be generated either as base load or load following to meet all of the UK’s electricity demands from thermal storage without burning anything.

HMG 2: The Government is committed to achieving its climate change and renewables targets, including a 34% reduction in its CO2 emissions by 2020 (relative to 1990); at least an 80% reduction by 2050; and ensuring that by 2020, 15% of the energy consumed in the United Kingdom comes from renewable sources.

AHM The government’s commitment to achieving its climate and renewables’ targets, including a 34% reduction in CO2 emissions by 2020 works out at a constant reduction of 2.33% since 1990 but this has not come close. The UK’s supposed “reduction” in CO2 emissions has more or less flat lined since 1990; to achieve the 34% reduction by 2012 there will need to be a steady reduction of 8.75% for the next 12 years and that is not going to happen for the reasons outlined below.

Erroneous Assumption: The Government claims that for every MWh(e) electricity generated from renewable resources saves something like 43 g/MWh(e) generated from a balancing CCGT plant.

Comment: This is not the case; it has been calculated that a CCGT balancing plant cutting in and out and ramping up and down subject to the vagaries of renewable electricity saves only 7.6% in terms of actual fuel consumption annually. Instead of relying on the theoretical saving in GHG emissions it would be easier to measure the gas consumed over a ten day period without balancing and multiply this consumption by 36.5. Comparing this number with the actual gas consumed over the year by the balancing CCGT plant will establish that there is only a 7.6% decrease in CO2 emissions annually. A typical modern CCGT plant running 24–7–365 will emit ~ 43gCO2equiv/MWh(e) and it is this erroneous figure that is used by the industry and hence the government when the true GHG saving is just (430x0.076) = 3gCO2equiv/MWh(e).

Solution: The government should accept that intermittent generation from renewables is a failed experiment and move on. The government should also issue a warning that after 2015, ROCs will no longer be paid for low quality intermittent electricity but will be paid out for secure firm power uninterrupted electricity delivered in tranches of 24 hours minimum. This will stimulate innovation and the country benefits by not having to import increasingly expensive fossil fuels to provide back up for intermittent renewable electricity.

HMG 3: Moving to a secure, more efficient, low-carbon energy system in a cost-effective way is extremely challenging, but is achievable. It will require major investment in modern technologies: to renovate our buildings; to provide for the electrification of much of our heating, industry and transport; and to move to cleaner power generation. It will also require major changes in the way energy is used by individuals, by industry, and by the public sector.

AHM: It is not achievable. Existing “modern technologies” like intermittent generation and CCS are required to cover up for the inadequacies of an industry that has failed to deliver cheap firm electrical capacity.

HMG 4: Through this Energy Bill, the Government aims to further its objectives to meet the UK’s decarbonisation and renewable targets, at least cost to consumers. The Government aims to ensure continued secure energy supplies whilst creating the right conditions for markets and private investment, through greater regulatory certainty and clarity. It will do this through its programme of Electricity Market Reform (EMR); through strengthening the regulatory framework by further clarifying the role of the regulator, Ofgem; and through establishing an Office for Nuclear Regulation (ONR). In addition, the Bill makes provisions ensuring developers of offshore generating stations can test and commission offshore transmission infrastructure to export power without committing a criminal offence, before transferring the infrastructure to an offshore transmission owner. Finally, the Bill makes provisions for a measure to enable the sale of Ministry of Defence (MOD) held assets, which pump aviation fuel to United Kingdom and United States airbases as well as some civilian airports—the Government Pipeline and Storage System (GPSS).

AHM: The only “secure energy supplies” are those issued from fossil and nuclear thermal power stations. The cost of generating intermittent electricity from non-thermal resources like wind, wave and tidal streams is prohibitive for a tiny true reduction in emissions of just 3 gCO2equiv/MWh(e) as outlined above. This is the reason why we are not making any headway at all in GHG emissions and never will if the government continues to subsidise not fit for purpose intermittent generation from non-thermal renewables.

Erroneous Assumptions: The EMR’s programme assumes that there will be no more invention and innovation in the renewable energy sector. There are already inventions that do not require “offshore transmission infrastructure”.

Solution: The government should stop subsidising not fit for purpose intermittent generation that requires fossil fuelled thermal backup 24–7–365.
HMG 5: Electricity plays a part in almost every aspect of modern life and is vital to our economic and social wellbeing. Since privatisation in the 1990s, our competitive market and system of independent regulation has served us well, delivering reliable and affordable electricity. It is crucial for the UK’s international competitiveness and economic development that this continues. However, we face a number of unprecedented challenges in the coming decades: we must decarbonise electricity generation; it is vital that we take action now to transform the UK permanently into a low-carbon economy and meet our 15% renewable energy target by 2020 and our 80% carbon reduction target by 2050. To put us on this latter trajectory, power sector emissions need to be largely decarbonised by the 2030s. Without reform, the electricity sector would have an emissions’ intensity in 2030 of over three times the level advised by the Climate Change Committe. Energy Market Reform (EMR) will put in place the institutional and market arrangements to deliver the scale of change in the power sector needed to meet the UK’s carbon budgets, including the recently-adopted fourth carbon budget; security of supply is threatened as existing plant closes: around a fifth of existing capacity is expected to close over the next decade and more intermittent (wind) and less flexible (nuclear) generation will be built to replace it. These changes to our market create an investment challenge, in particular for flexible plant, which will be needed during periods of peak demand or still days (ie when the wind doesn’t blow), but which would operate less often than now and therefore have less certain revenues. If we don’t act, a central scenario we have modelled suggests that in some years we could see blackouts affecting up to 2.5 million homes. I demand for electricity is likely to rise: despite the improvements in household and non-domestic energy efficiency, which will be generated through the introduction of the Green Deal and the roll-out of Smart Meters across the country, overall demand for electricity may double by 2050 due to the expected expansion in the uses of electricity with the electrification of transport, heat and other carbon intensive sectors; and electricity prices are expected to rise: increases in fossil fuel costs and environmental policies are likely to lead to higher bills in the future, even without factoring in the huge investment needed in new infrastructure. The Government is committed to reducing the impact on consumers by making sure investment takes place in the most cost-effective way possible.

AHM: There is nothing to be gained in building more and more intermittent renewable generation and backing it up with nuclear generation. Both are low carbon but the advantage lies with nuclear because it can provide firm capacity 24–7–365 whereas wind turbines and the like cannot.

Erroneous Assumptions: It is “assumed” that all electricity generated has the same value to economic and social wellbeing but this is not the case.

Comment: The right kind of electricity is secure firm electricity that is available 24–7–365; the kind that currently issues from our thermal power stations. The wrong kind is the intermittent and random pulses of poor quality electricity that issues from wind, wave and tidal stream generators.

Solution: The government should not allow any more thermal power stations to close but force them to convert them to run on renewable heat derived from the kinetic and potential energies in wind, wave and tidal streams. Renewable heat can easily be stored in giant thermal accumulators built underground adjacent to existing fossil fuel generators at a cost of the £1 billion that has already been set aside for the harebrained CCS “experiment” that will never work.

Supplying our existing stock of thermal power plants with heat derived from infinite renewable energy sources will give UK plc the economic advantage of electricity too cheap to meter. Besides, the UK will not be able to afford to pay for coal, gas or oil as the prices of these commodities will begin to skyrocket over the next decade. Time is of the essence and the sooner we abandon supporting the intermittent renewable energy experiment and start providing alternative heat sources to create “green steam” the better.

I am keen to provide oral evidence on any of the issues outlined above to the Committee and aim to follow up in more detail on many of these points during the inquiry. However, I realise that the renewable industry will have taken up all of the available slots to prevent different points of view being expressed. I trust that you will appreciate that the Committee will want to consider a wide range of opinion to facilitate a balanced outcome.

June 2012

Written evidence submitted by the Greater London Authority

Introduction

1.1 The Greater London Authority (GLA) welcomes the opportunity to respond to the ECC Select Committee’s call for evidence on the Draft Energy Bill. The need to ensure the UK’s energy security is pressing, and it will be vital for our economy and our environment that Government reforms help deliver a sustainable, long-term and low carbon future.

1.2 If Government policies are to succeed nationally, then it is vital that they succeed in London. The Mayor of London is committed to ensuring that 25% of London’s energy is provided through decentralised energy systems by 2025. This is the most practical and cost effective way of sourcing low and zero carbon heat for use in densely built up areas, such as London. We strongly hope that the Energy Bill, when it is published later in the year, helps create the framework that will allow this important objective to be reached.
Energy and Climate Change Committee: Evidence

1.3 The GLA responded to DECC's consultation in March last year, making suggestions to help ensure that the reforms in the Energy Bill work well for the people, and the future economy, of the capital and help the Mayor achieve his commitments. This response to the ECC Committee’s call for evidence is essentially a reiteration of that response, laying out the key concerns the GLA has with the newly-published Draft Energy Bill and how these can be addressed. We look forward to working with the Committee and with DECC to make sure the Energy Bill is a success.

Demand-Side Management

2.1 Currently there is no effective mechanism to support demand-side management and demand-side response, nor to support decentralised energy. Without such a mechanism it is likely we will see an unnecessary increase the level of base load electricity thanks to the diminishing incentive to invest in carbon-saving, demand-side measures, including decentralised energy.

Feed-in-Tariffs and Heat

3.1 The current Feed-in-Tariff (FiT) proposals take no account of heat, although available waste heat and heat production in combined heat and power is integral to electricity production. We believe that low carbon electricity generating plants, which provide useable heat, should be eligible for an uplift under the FiT to reflect the cost of the transmission of the heat to its point of consumption.

Electricity Market Reform

4.1 Electricity Market Reform (EMR) must ensure that small players in the electricity market can compete effectively—this will be vital to increase competition and encourage decentralised energy (DE) initiatives. The current measures set out in the Draft Energy Bill could seriously compromise the ability of small players in the electricity market to compete effectively, as the proposed FiT Contract for Difference (CfD) model only accommodates large scale electricity generation. There is, at the moment, no suggestion that the model will be developed or deployed so as to support the level of demand-side management and distributed generation capacity that is potentially available, and we would urge DECC to commit to this.

4.2 The proposed CfD system is complex and takes no account of the fact that smaller generators rarely obtain the prevailing wholesale price for their power because of the smaller packets their power is sold in, and because of their inability to obtain proper access to the complicated and risk-related electricity market. This means that the wholesale price at which the CfD FiT operates will be too high for smaller generators and they will not gain the same level of support as the larger generators or any support at all. It will place them at a further competitive disadvantage relative to large scale electricity generation.

4.3 Furthermore, the measures in the Bill do not currently attempt to reform the complex systems in the current electricity market which prevent smaller generators and electricity suppliers from competing effectively. The market is illiquid, which has the effect in particular of it being difficult to sell smaller packets of power, and this liquidity problem has not been effectively resolved. The New Electricity Trading Arrangements introduced in 2001 introduced costs risks and complexities that the Bill currently does nothing to remove. The addition of the new CfD FiT system simply adds another layer of complexity upon existing layers of complexity.

4.4 The GLA therefore believes that the Bill should reform the current market effectively to enable smaller players to participate in it. This will introduce more competition and also help the agenda for introducing low and zero carbon heat. The production of low and zero carbon heat could be threatened by the present proposals, particularly when they are combined with the existing costs risks and complexities inherent within the electricity market.

Decentralised Energy

5.1 The Mayor is committed to seeing 25% of London’s energy provided through DE systems by 2025—the most practical and cost effective way of sourcing low and zero carbon heat for use in densely built up areas, such as London. The production of electricity within the same process as produces the heat (combined heat and power) is an important feature of DE production, and the revenue from the electricity sales is often crucial in establishing these schemes on a viable basis. The measures in the Draft Bill, as they currently stand, will have the effect of making it more difficult for DE schemes to obtain a realistic market price for the power produced.

5.2 This will be more apparent when the CfD FiT regime is applied to new renewable electricity schemes in 2017. Instead of a support regime which is tailor-made to meet the needs of smaller scale renewable electricity production, new schemes could be required to operate in an unsupportive CfD FiT regime. The result is likely to be a sharp fall in new investment in renewable generation, including in London.

The Future

6.1 London’s future economy is absolutely dependent on a cost effective, responsive and secure electricity supply. Achieving this will be dependent upon the successful inter-action of four crucial requirements:
— Cost effective timely electricity connections.
— Adequate capacity in the electricity distribution network that anticipates demand.
— Decentralised electricity production feeding directly into the local electricity distribution network. This will relieve the stress on the distribution system, reduce the need for new distribution infrastructure to meet demand, and can act for demand side response purposes, helping at peak times.
— Heat networks which distribute the heat produced in combined heat and power systems, and other heat sources, and store it and/or distribute it to consumers according to demand. This is an effective demand side response tool, as well as being the most cost effective means of producing and distributing low and zero carbon heat in densely populated areas.

6.2 It is therefore vital that the Energy Bill, and the Government’s subsequent energy policies, remove the barriers preventing smaller-scale producers from entering the market, ensure that DE is supported and commercially viable, and see the necessary investment in infrastructure strategically planned for and delivered.

June 2012

Written evidence submitted by the Energy Technologies Institute

ABOUT THE ENERGY TECHNOLOGIES INSTITUTE

The ETI is a public-private partnership between global industries—BP, Caterpillar, EDF, E.ON, Rolls-Royce and Shell—and the UK Government.

Public sector representation is through the Department for Business Innovation and Skills (BIS), the Technology Strategy Board (TSB), the Engineering and Physical Sciences Research Council (EPSRC) and the Department of Energy and Climate Change (DECC).

The ETI brings together projects that accelerate the development of affordable, clean, secure technologies needed to help the UK meet its legally binding 2050 targets.

We make targeted investments in projects in offshore wind, marine, distributed energy, buildings, energy storage and distribution, carbon capture and storage, transport and bio energy. These projects bridge the gap between laboratory scale research and development and commercial deployment of large-scale engineering projects.

SUMMARY OF EVIDENCE

1. The government is right to focus now on decarbonisation of the electricity sector. Our work on energy system modelling robustly supports decarbonisation of electricity by 2030 as the right approach to meeting our 2050 carbon targets.

2. Our evidence to the committee contains four key points. The first two relate to the drafting of the bill; the latter two relate to how the EMR regime is implemented and placed within a broader strategy for decarbonisation in future.

(a) Create a stable investment environment: The design of EMR could be improved to give a more stable, credible and attractive environment for investors. This will help to ensure that investment comes forward at an affordable cost of capital.

(b) Allow contracting for demand side contribution: EMR has not, so far, addressed the potential demand side contribution to electricity decarbonisation. The Bill could leave open the potential to develop a mechanism for contracting for demand side interventions.

(c) Take full account of energy system-wide value: There are multiple inter-dependencies within electricity systems and across the entire UK energy system (including heat and transport). These are central to creating an integrated, cost-efficient, low carbon UK energy system. Good policy will look beyond an “electricity silo” to be informed by a system-wide perspective. Simple levelised cost metrics (cost per MWh) do not reflect system-wide value and are not a good guide for selecting the right mix of technologies. EMR delivery plans and contracting decisions need to take explicit account of energy system-wide inter-dependencies.

(d) Ensure complementary policies support low carbon technologies: In addition to EMR, all low carbon generation technologies will need complementary technology-specific policies and strategies to promote investment in innovation, development and deployment. The regime will be more powerful if it is clearly integrated with coherent supporting policies.

CREATING A STABLE INVESTMENT ENVIRONMENT

3. In order to bring forward the required investment in low carbon electricity generation the Energy Bill needs to create confidence and certainty around revenues for investors in low carbon electricity. Pre-legislative scrutiny provides a key opportunity to examine how the Bill could be improved to increase confidence and
clarity among the investment community who will be relied on to finance the decarbonisation of the electricity sector.

4. Our engagement with investors and the finance community point clearly to the importance of investor confidence in securing the development and deployment of competitive low carbon technologies. For example, the recent report of the offshore wind cost reduction task force, which ETI was part of, clearly highlights the importance of driving down the cost of capital.

5. In our view the process of pre-legislative scrutiny and consultation offers an opportunity to examine ways of improving the proposed legislation in terms of the strength and reliability of signals to investors. Our emerging work on CCS financing (carried out jointly with the Ecofin Research Foundation) suggests that there is considerable scepticism about the UK’s long term commitment to carbon targets.

6. Developing and applying a stable and transparent approach to EMR will help to drive down the cost of capital and benefit consumers. The contracts for difference approach will introduce an important tool to de-risk projects by offering stable revenue streams. However, to finance the development of technology and supply chain capacity investors and industry will need visibility around the size and scope of the market, and confidence that there will not be sudden, sharp changes of policy and the outlook for support measures.

7. From this perspective, the structure envisaged for the regime is both complex and exposed to significant policy risk. As well as government, it encompasses a system operator and a panel of experts, neither of whom will have clearly defined statutory duties. The recently published operational framework also suggests a possible “independent expert” function for resolving disputes and determining contract variations. This may be perceived by investors as unduly complex and vulnerable to unpredictable influence.

8. The Bill and the accompanying documentation also does not clarify how the government will ensure coherence between its carbon budget, its published Carbon Plan, and its approach to delivering EMR. This, along with the closeness of the department to the delivery plan, may cause investors to perceive a significant risk that the EMR delivery plan and associated funding commitments will be subject to short-term spending review pressures. This could lead to doubts about the size and attractiveness of future UK markets for low carbon electricity generation, and drive reluctance to commit serious investment to developing the necessary technologies and supply chain capabilities, as well as inhibiting future reductions in the cost of capital for low carbon generation projects.

**Key issues for the committee**

9. It is important to consider how the investor credibility of the EMR statutory framework could be strengthened. Consideration could be given to arrangements that would reduce hands-on government involvement in relatively short-term delivery issues, or would progressively reduce this over time. This tends to be the pattern in other regulated sectors, even where public financing is very significant. For example, responsibility for more of the contracting and short-term delivery could be delegated to an independent body within a clear statutory framework.

10. A statutory requirement to demonstrate the coherence of EMR delivery plans (in particular the funding envelope available for EMR) with the government’s broader strategy for meeting carbon budgets could improve the investability of low carbon electricity projects in the UK. One possible mechanism would be to put the EMR delivery plan onto a statutory basis, requiring that it clarify broad resource parameters (without compromising competition for contracts for difference).

11. These ideas are examples of approaches or mechanisms that the government could consider in improving the Energy Bill. No doubt there are other potential options. The pre-legislative stage offers the opportunity to examine these fully before finalising the Bill.

**Demand Side Measures**

12. There is significant potential for demand side interventions to contribute to the decarbonisation of the electricity sector. In many cases such demand side interventions require significant investment and the rewards will be similarly affected by market uncertainties and risks. There is considerable work ongoing in this area including the ETI’s £100 million Smart Systems and Heat programme recently announced by the Prime Minister. This will build understanding of mass-market consumer behaviours and needs, to support genuinely effective service products and business models.

13. Clearly the design of contracts for difference to remunerate investments in demand side measures presents particular challenges. However, in principle there does not appear to be any reason why appropriate contracts could not be devised for appropriate kinds of demand side interventions. This could create opportunities for new business models to emerge in demand side interventions.

**Key issue for the committee**

14. While it may be difficult to resolve the many design questions now, the bill could be framed in a way which does not close down the potential for future development of demand side contracts for difference or related reward mechanisms. This is also potentially relevant to the capacity mechanism.
Taking Account of System-Wide Value in Policy Design

15. Over the past three years the ETI has, in collaboration with its members and a number of sector experts, created a world class bespoke modelling capability for the UK energy system—the Energy System Modelling Environment (ESME). This allows us to systematically model the UK’s pathway to decarbonisation under a range of scenarios, taking account of the underlying costs, engineering properties and inter-dependencies of key energy technologies.

16. Our work on energy system modelling robustly demonstrates that taking a system-wide approach substantially reduces the economic cost of decarbonisation ("system-wide value"). Energy system modelling supports the government’s emphasis on decarbonising the electricity sector. But it also highlights strong inter-dependencies between the design choices for low carbon electricity (generation and grids) and systems for meeting heat and transport needs.

17. Some technologies can be applied both within and outside the electricity sector (for example, biomass energy projects can generate electricity or produce synthetic natural gas or hydrogen; carbon capture and storage can be applied to electricity generation and in industry), while others have inter-dependencies across the boundary of the electricity sector (for example, intermittent renewable electricity generation can be combined with energy storage technologies). From an energy system perspective, electricity is simply one of a portfolio of alternative ways to convert, store and distribute energy to meet our needs. If electricity policy is designed in isolation, we risk taking an unbalanced and higher cost approach to decarbonisation.

18. To take one example, ETI’s energy system modelling points to a critical role for carbon capture and storage both within and outside the electricity sector. It suggests that if we do not successfully develop CCS in the UK, the annual cost of meeting carbon targets is likely to increase by over 1% of GDP by 2050. Notably it also highlights the potential economic benefit of applying CCS in combination with biomass, as a means of generating negative carbon emissions. This delivers high system value by making it possible to meet carbon budgets and continue using fossil fuels in some applications where low carbon alternatives are particularly costly. A coherent strategy for developing CCS requires taking account of the costs and benefits across the entire energy sector, and not just within the electricity sector. Developing CCS in the electricity sector could unlock broader decarbonisation benefits by de-risking subsequent deployment of CCS in industrial and biomass applications. The government will maximise the impact of resources by taking account of these broader decarbonisation benefits in decisions on contract pricing, allocation and contract design.

19. Even within the electricity sector, individual generation technologies are not interchangeable, in that:
   (a) They have different operating profiles (for example, ability to ramp up in response to demand; intermittency/variability) marginal costs and places in the merit order.
   (b) They have different strategic exposures to, for example, extreme weather events, global commodity prices, or design faults.
   (c) They are at different stages of technology, market and regulatory development.

Key issues for the committee

20. Decisions on EMR should take account of the “system-wide value” of technologies, in terms of:
   (a) Inter-dependencies within the electricity sector—for example, the need for investments in grid connection/reinforcement, the despatchability of capacity or the cost and availability of electricity storage. These effects are sometimes not captured in levelised cost analysis.
   (b) Strategic inter-dependencies with non-electricity systems—for example, electricity generation choices will have an impact on, and should be informed by, emerging options for addressing variability in our daily and seasonal demand for heat in buildings.
   (c) Portfolio value—this is the option value created by having a balanced portfolio of proven technologies which can be deployed as circumstances emerge and change in future.

21. The EMR documentation sets out a route to technology-neutral (but electricity-specific) market mechanisms in the 2020s, but is silent on questions around system-wide value in the sense described above. There remain important questions about how to incentivise and select competing technologies for best overall decarbonisation value.

22. The importance of interdependencies (and therefore “system-wide value”), and the likelihood of multiple market failures, implies the need for a strategic approach to designing and combining market and administrative contracting mechanisms. It will be very challenging to design technology-neutral electricity market mechanisms that adequately reflect wider energy system-wide value effects. There could remain a valid case for some degree of technology specificity in future EMR implementation.

23. EMR delivery plans (and updates) could usefully be based on an explicit and regularly updated energy system-wide perspective. The delivery plans could then set out how system-wide considerations will be taken into account in CfD allocation, pricing and contract design across technologies. For these purposes, it is important to note that simplified metrics such as levelised costs of electricity do not capture broader system-wide effects and value.
Complementary Technology Policies Will be Needed to Support Deployment of a Balanced Portfolio of Low Carbon Generation

24. EMR addresses a generic barrier to the deployment of all forms of low carbon electricity generation by providing a mechanism to deliver stable premium revenue streams. Investors can therefore see a route to clear returns on investment in low carbon generation. However, a range of complementary policies and interventions are needed if EMR is to achieve its full impact in developing and deploying a balanced portfolio of low carbon generation. These policies need to focus on the specific barriers to development and deployment of individual technologies.

25. These issues are highlighted, for example, in the work of the task force on offshore wind cost reduction or in DECC’s CCS commercialisation programme. DECC is already working on many of these issues through a variety of routes, and its strategies for the various technologies need to be reflected in EMR delivery plans.

26. Complementary policies are needed to address a range of risks around issues such as consenting, support for innovation, insurance and liabilities, access to electricity grids, charging for transmission and regulatory regimes.

27. While the ambition is towards technology-neutral contracting in the 2020s, it is important to note that complementary policies will still need to address the technology-specific barriers.

June 2012

Written evidence submitted by Energy Action Scotland

Introduction

Energy Action Scotland (EAS) is the Scottish charity with the remit of ending fuel poverty. EAS has been working with this remit since its inception in 1983 and has campaigned on the issue of fuel poverty and delivered many practical and research projects to tackle the problems of cold, damp homes. EAS sits on the Scottish Fuel Poverty Forum.

EAS welcomes the opportunity to respond to the Energy and Climate Change Committee’s call for evidence on the Draft Energy Bill 2012.

Background: Fuel Poverty in Scotland

The Scottish Government is required by the Housing (Scotland) Act 2001 to end fuel poverty, as far as is practicable, by 2016 and plans to do this are set out in the Scottish Fuel Poverty Statement. However, of the three main causes of fuel poverty, energy efficiency is devolved to the Scottish Parliament, while both energy market regulation—including price—and income in terms of benefits and tax are matters reserved to the UK Government. Even within energy efficiency, GB-wide programmes such as the Carbon Emissions Reduction Target (CERT), the Community Energy Saving Programme (CESP) and the forthcoming Energy Company Obligation (ECO) are important vehicles for delivering energy efficiency measures in Scotland.

The number of Scottish households living in fuel poverty dropped from 756,000 (35.6%) in 1996 to 293,000 (13.4%) in 2002. Half the reduction was due to increases in household income, 35% to reduced fuel prices and 15% to improved energy efficiency of housing. The most recent figures from the Scottish House Condition Survey (SHCS) show that 823,000 Scottish households were in fuel poverty in September 2011—a figure which is equivalent to 35% of the total number of households in Scotland.

According to figures produced by the Scottish Government (SHCS), for every 5% rise in fuel prices an estimated 40,000 more households would go into fuel poverty. Based on these figures, EAS estimates that there are currently almost 900,000 households, ie four in ten, in fuel poverty in Scotland. This significant increase in fuel poverty is widely accepted to be due to the dramatic increases in domestic fuel prices and EAS is very concerned about the impact on vulnerable customers.

1. Impact of Demand-side Management

EAS recognises that the Draft Energy Bill 2012 focuses on large-scale energy generation and aims to adapt the market to changes in energy requirements. However, it is concerned that the Bill fails to emphasise the need for demand-side management to be addressed in parallel.

Plans for energy generation in the years ahead must, we believe, be equalled by plans to reduce significantly the amount of energy consumed and therefore the amount that is required to be generated.

The UK Government does of course have plans and programmes in place to tackle fuel poverty, reduce carbon emissions, to improve the energy efficiency of buildings and appliances, and to influence end-user behaviour through energy advice.

However, EAS would expect Government to demonstrate that such steps to reduce energy demand are sufficient over time to have the required impact on generation.
Acknowledging clearly this link and the impact of demand-side reduction should surely form the basis of any energy policy.

2. Mitigation of the Effects of Energy Price Rises

The Draft Energy Bill indicates that, although energy prices for customers will increase, they will be lower than if the steps proposed in the Draft Bill were not taken. Given that it is now widely acknowledged that energy prices for customers will continue to increase for some time, it is, we believe, essential that measures to mitigate the effects of such rises are increased likewise.

Already a high number of households are in or at risk of fuel poverty and this number is therefore likely to increase with prices. Many of the initiatives—be those to reduce carbon emissions, to increase energy efficiency or to upgrade the grid/networks etc—are paid for via customer bills. These are largely applied as flat levies, regardless of income, ability to pay or level of usage. If this regressive form of paying for initiatives is to continue—and EAS believes this could well be done more fairly via the tax system, then there ought to be sufficient mitigation for the third of customers already struggling to afford energy bills, for example by using some of the “carbon taxes” raised.

3. Role of Ofgem

The draft Bill also intends to change the powers held by the regulator Ofgem. At present, Ofgem’s powers of course relate to the gas and electricity markets. However, over the past number of years there has been increasing concern over “other fuels”, particularly in areas of the country that are off the mains gas grid. There has been much publicity over the last few winters in particular which has highlighted issues which existed previously but which went largely unseen—perhaps due to the lack of a single “voice” or representative body to raise them.

Whilst a recent OFT study reported that such markets were operating well, more or less, there remains concern that consumers of other fuels—such as coal, domestic oil, LPG etc—lack the same level of protection and guardianship as gas and electricity users.

Moreover, suppliers of such fuels do not necessarily contribute to improving domestic energy efficiency (CERT, CESP, ECO etc) or to supporting vulnerable customers (Priority Service Register, Warm Home Discount etc) as do the gas and electricity suppliers.

It is therefore our view that a role for Ofgem in protecting the interests of customers of fuel types other than gas and electricity should be considered in the Draft Energy Bill.

Energy Action Scotland is content for this evidence to be made public.

June 2012

Written evidence submitted by the European Climate Foundation

Introduction and Summary

The European Climate Foundation (ECF) is an independent foundation supporting work on climate and energy policy in Europe. The ECF has specifically addressed the future of the European electricity sector both in terms of technical routes to decarbonisation and the policy implications. The ECF’s UK Programme has commissioned the present submission on the UK draft bill’s proposed capacity market because this issue is now under consideration across Europe and so the UK’s conclusions may have pan-European significance.

ECF has commissioned this independent analysis from Simon Skillings at Trilemma UK and the content of the submission reflects the views of the author and his reviewers and ECF is pleased to submit the analysis to the Committee for its consideration.

The submission reflects key concerns with the provisions of the Draft Energy Bill to authorize the Secretary of State to design a “capacity market” and put it into operation at his discretion. There are three major problems with the approach set out:

— Lack of clarity about the future role of a capacity market.
— Inflexible design based on flawed assumptions about the future reliability challenge.
— Lack of an appropriate incentive framework for the System Operator and, in particular, the absence of strong drivers to stimulate the market in provision of demand side resources.

The following remedies are proposed to address these shortcomings:

The Energy Bill should be based on a clear Government position on the circumstances in which a capacity market will be introduced. The Bill should set out the basis upon which the Secretary of State will define the level of reliability that the System Operator must deliver and how this will be reviewed and updated over time. This is necessary to enable the System Operator to efficiently procure the necessary reliability products and investors to assess how the value proposition for investment in resources may evolve.
The Energy Bill should include a clear statement recognising that the future reliability challenges require an increasingly flexible portfolio of dispatchable resources, including demand response, and not just a quantity-based approach (firm capacity) to deliver system reliability. It should direct the System Operator to regularly forecast net demand on the system and design and implement the mechanisms that value and deliver the products and services required to reliably operate the system over both operational and investment timescales. It is unnecessarily restrictive to attempt to specify market design on the face of primary legislation.

The Energy Bill should include a mandate for the Regulator to establish an incentive framework for the System Operator to minimise the costs of delivering reliability. In addition, the Secretary of State should establish minimum targets for the procurement of demand response to help kick-start the market in the provision of these services and ensure the System Operator develops the necessary systems and expertise to exploit the benefits of demand response.

CONTEXT

The need, or otherwise, for a capacity mechanism in electricity markets has been the subject of on-going controversy since liberalisation was first introduced. Although theoretical micro-economics suggests that energy only markets will efficiently deliver the optimum level of security for consumers, there are a series of problems that may prevent this from happening in reality. This is for two principle reasons:

— There is concern that regulators or politicians will intervene to prevent the high prices that naturally occur during periods of tight supply and that are necessary for investors to make a return. This might either happen directly through price capping, or indirectly through side-deals that encourage reserve capacity to be available and, thereby, suppress prices for all other participants.

— It is difficult to monetise the potential future value of periods of high prices. This is because the great majority of consumers lack understanding to hedge their exposure and do not expect to have to do so, whilst the intermediaries on whom they rely (suppliers) have no obligation to provide such a hedge and face asymmetrical risks in choosing to do so as a commercial strategy.

These problems give rise to the so-called “missing money” thesis which, in effect, says that the market left to its own devices may provide a lower level of security than customers have grown to expect. Whilst the “missing money” thesis is taken seriously by many policy makers, the introduction of capacity mechanisms to remedy the concerns remains controversial. This is because experience of capacity mechanisms has given rise to a number of perceived problems, in particular:

— They create a significant policy risk for investors and the long term value of capacity payments can be largely discounted (in much the same way that investors discount the long-term value of carbon price).

— Poorly designed capacity mechanisms can distort markets and can be easy to exploit through the exercise of market power.

— They can suppress short-term price signals and, thereby, remove incentives for efficient demand response to price.

Many policy makers, including until recently those in GB, have therefore opted to retain the energy-only market. However, as part of the Electricity Market Reform process, the UK Government has decided that a capacity payment mechanism is likely to be required to preserve reliability through the upcoming period in which there will be a sizeable increase of variable renewable resources to meet renewables and decarbonisation targets and, at the same time, a significant number of existing conventional generators are expected to retire. Although significant elements of the design envisaged for the GB market remain to be defined, a series of important decisions appear to have been taken and are embodied in the Draft Energy Bill. This paper sets out some concerns with these decisions and provides recommendations for the drafting of more robust legislation.

This submission draws in large part upon the attached paper, “Beyond Capacity Markets—Delivering Capability Resources to Europe’s Decarbonised Power Market” that was recently published at the 9th International Conference on the European Energy Market in Florence, May 2012 and is provided as an attachment to this submission. As discussed in the attachment, there is now substantial world-wide experience associated with the design of capacity mechanisms, as well as a growing understanding of the important changes in the system and reliability challenges that these mechanisms were originally intended to address. In particular, whereas the focus of these mechanisms has been to deliver a quantity-based standard of resource adequacy (firm capacity in MWs), the challenges of the future will also require an increasingly flexible portfolio of resources capable of rapidly changing output or flexing demand frequently and continuously throughout the year around the energy available from variable renewables. In fact there is good reason to expect that success in addressing the system flexibility dimension can have significant benefits in reducing the need for investment in firm capacity. This submission sets out the key design considerations in delivering these capabilities to the system in the context of the new reliability paradigm, including the need to actively enable participation of the demand-side.

96 “Net demand” refers to the demand for energy not already served by the output of variable renewable resources, eg, solar- and wind-powered generation, whose availability is significantly less controllable than conventional thermal generation. See Attachment.
Delivering Reliability to the System

There are two steps involved in the design of capability mechanisms designed to deliver what the system needs to maintain reliability:

— **Step 1**: Define the “reliability product or service”.
— **Step 2**: Determine how it should be valued.

Much of the design effort is generally devoted to the second step and this has been the case in the UK process where there has been considerable debate as to whether the System Operator should run a market-wide auction or merely procure “strategic” reserve capacity. However, step 1 is also extremely important since forthcoming changes in the power system mean that we cannot assume that the same product that has delivered reliability in the past will continue to do so into the future. Definition of the “reliability product” requires a number of questions to be addressed including:

— What is the critical period or circumstance in which system reliability is under most stress?
— What is the service that will deliver reliability during this period?
— How much of this service do individual providers offer?
— How far in advance and for how long must providers deliver this service?

Traditional approaches to capacity mechanism design have assumed that all (or a sufficient proportion of) capacity is able to provide the range of operational flexibility that will enable the System Operator to balance supply and demand in real time. Therefore, it has been possible to separate the concepts of “resource adequacy”, which involves having enough total capacity available over planning time horizons, and “system quality” which involves maintaining certain system parameters (eg frequency, voltage) within statutory limits during operational timescales. Given this assumption, the critical period in which system reliability is under most stress is the time of peak demand and the service that is required to deliver reliability during this period is firm capacity. If there is enough firm capacity available to meet the winter peak demand then it is assumed that this capacity will have the inherent flexibility to maintain operational security throughout the year, provided the short term pricing signals ensure that this flexibility is made available when required.

The UK capacity market proposals are based on this assumption and it is therefore being designed to deliver adequate firm capacity to meet winter peak demand. On-going design work is currently considering the third and fourth questions listed above, deciding how much firm capacity individual providers actually deliver and the appropriate commitment period in which they will be required to deliver the service. However, there is increasing evidence that this paradigm may not be appropriate to the reliability challenges that will emerge over the next decade and it is, therefore, important that the market design to deliver reliability remains sufficiently flexible to meet these new challenges.

The New Reliability Paradigm

Some electricity markets, including both those with and without capacity mechanisms, have successfully stimulated investment in new power generation capacity. The principles underpinning these investments are illustrated in the following diagram:
continually earning an operating profit, or “energy credit”, that can be relied upon to recoup financing costs and deliver project returns.

However, the increase in the proportion of variable renewable generation will change this previous investment logic as illustrated in the following chart based upon a recent pan-European study\(^7\) that investigated the changes needed in the power sector associated with delivery the levels of decarbonisation envisaged in the EU Commission 2050 Roadmap.

This chart shows the annual variation in total and net demand for the “GB South” region in 2030, where net demand is the total demand less the output from variable renewable generators. It can be seen that the volume available for traditional base load generation is significantly reduced and the majority of non-renewable resources must operate in a flexible mid-merit mode. This creates two significant challenges to the current investment logic:

— Firstly, there is more uncertainty over the energy credit that power plant will earn since it depends on the ability to operate during shorter periods of high prices.
— Secondly, there is likely to be a requirement for the plant to operate in an extremely flexible mode with multiple stop/start cycles being required, potentially daily throughout the year.\(^8\) There is an investment cost burden associated with creating this capability and yet the payback is extremely difficult to estimate and is associated with significant uncertainty.

The first of these changes potentially affects the appetite for investors to pursue power plant projects and increases the argument that some form of capacity mechanism is required to stabilise earnings. The second issue, however, has the potential to affect the type of assets that are built and their operational capabilities. Unless the value of investing in the technical capability to provide flexibility is sufficiently predictable, there is a risk that the system operator will be forced to choose between despatching the resource portfolio so as to ensure supply security and despatching so as to minimize costs to consumers.

Indeed, when considering the design of the required “reliability product”, the critical period or circumstance in which system reliability is under most stress is no longer simply the time of peak gross demand. Instead, the most challenging threat to reliability arises when consumer demand and the availability of variable renewables is changing in opposite directions, something that can happen any day, every day, at any time during the day, and even several times a day. It will occur to the greatest extent in situations where demand is either increasing towards system peak whilst the availability of variable renewables is reducing to a minimum, or falling to system minimum levels whilst the availability of variable renewables is increasing to a maximum.

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\(^8\) See also Attachment, Figure 3.
These circumstances highlight that the ability of resources to respond to a rapidly changing level of net demand is as important as the overall quantity of firm capacity. Therefore, the answer to the second design question—what is the service that will deliver reliability during the most challenging periods—is no longer simply firm capacity.

As discussed, actual experience with capacity markets such as the one being proposed in the Draft Energy Bill, confirm that “what you value is what you get”. That is, a capacity payment mechanism that values only one capability—the quantity of firm MWs committed to be available during the few hours of highest total demand—will result in the vast majority of revenues going to existing, conventional fossil-fuelled and nuclear generators that are likely to be relatively inflexible, and to new generators with the lowest all-in cost, which are also likely to be relatively inflexible. While some of these generators (eg, traditional mid-merit CCGTs99) have load-following capabilities, they very likely would not be “flexible enough” to reliably meet the net demand associated with a rising share of variable renewables in the power mix.

Finally, an important change that is expected to occur over the coming decades is that the GB power system will become increasingly physically interconnected with neighbouring power systems. This interconnection has many advantages in terms of system reliability since larger balancing areas have less need for, and greater access to, operational reserves and are less prone to systemic failures such as the dependence of renewable availability on weather conditions.100 Therefore, the Draft Energy Bill should not prematurely lock into a specific capacity payment design given these developments or the related market design issues discussed under Section V.G. of the Attachment. In particular, it is unclear how the capacity market design reflected in the Draft Energy Bill will operate in line with market coupling principles and potentially larger balancing areas.

DEMAND SIDE RESOURCES

Power system operators have traditionally balanced supply and demand through controlling the output of the power plant portfolio. It is now widely accepted that the ability to adjust demand has the potential to provide a cost effective alternative that avoids significant investment in supply side resources. Where these resources have been enabled to participate in US organized markets, experience confirms both their cost-effectiveness and high level of reliability as a system resource.101 However, these opportunities have yet to be exploited on a significant scale in GB, in part because of the enabling technologies are only now beginning to be deployed, but also due to (increasingly anachronistic) concerns that a system operator cannot rely upon demand side resources in the same way as those on the supply side. These constraints on the development of demand response will be exacerbated where the design of capacity mechanisms (and other financial incentives) is based on typical investment and technical capabilities of generation plant. For example, the basis upon which it is decided how much of the reliability product is provided by an individual resource often includes site visits and availability testing that does not translate well into the situation where demand response is provided from multiple locations.

To overcome these barriers it is necessary that the design of the mechanism to pay for reliability resources and the associated regulatory framework is equally applicable to demand-side and supply-side resources. Two issues are of particular importance:

- The mechanism must recognise the differences between the investment and operational characteristics of demand and supply side resources and the design must not favour one against the other.
- Positive incentives will be required to drive the development of the market for the provision of demand response and the deployment of the necessary technology. This could initially involve volume targets for the procurement of demand response services. Ultimately, a strong financial incentive on the System Operator to minimise the costs of procuring reliability resources should be sufficient to sustain the growth in this market.

DRAFT ENERGY BILL AND THE CAPACITY MECHANISM

The Draft Energy Bill contains powers for the Secretary of State to design a “capacity market” and put it into operation at his discretion. There are three major problems with the approach set out:

- Lack of clarity about the future role of a capacity market.
- Inflexible design based on flawed assumptions about the future reliability challenge.
- Lack of an appropriate incentive framework for the System Operator and, in particular, the absence of strong drivers to stimulate the market in provision of demand side resources.

The deferral of a firm decision to implement a capacity market creates unnecessary and potentially harmful uncertainty affecting investment in the market. It fails to provide a clear Government position on the “missing

99 It is worth noting that leading suppliers of CCGT technology have responded recently with new, more flexible product offerings in response to this emerging system reality; indeed these suppliers have expressed concerns that efforts to refine market designs may not adequately reflect what the power system actually needs.

100 See recent report by Western Governors’ Association for an excellent review of these system-wide integration issues: http://www.westgov.org/index.php?option=com_joomdoc&task=doc_download&gid=1610


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money” thesis or articulate a long term strategy for how it may be addressed. It appears that the decision on the introduction of the capacity market will be based on future assessments of firm capacity margin over winter peak demand; however, there is no indication of how the Government will decide whether the margin is adequate or inadequate. Introducing an approach only when investment is required is consistent with a philosophy of making periodic targeted interventions rather than including a mechanism to ensure reliability as an enduring part of the market arrangements. This concern is exacerbated by the absence of any strategy for how the payment mechanism may, or may not need to evolve in light of an increasingly interconnected EU power system.

The Energy Bill should be based on a clear Government position on the circumstances in which a capacity market will be introduced. It should also set out the basis upon which the Secretary of State will define the level of reliability that the System Operator must deliver and how this will be reviewed and updated over time. This will enable the System Operator to efficiently procure the necessary reliability products and investors to assess how the value of capacity payments may evolve.

The Draft Energy Bill assumes that the critical period for reliability will be the winter peak demand and the System Operator should procure capacity that will be firm during this period. There is no guarantee that this will be the primary reliability challenge going forward and, indeed, there is increasing evidence to the contrary. Therefore, there is a risk that the costs of delivering reliability will be unnecessarily high as the System Operator is likely to implement separate mechanisms to procure the products and services that will deliver reliability in addition to those bought through the capacity market. In particular, it is likely that the operational capabilities of resources will become at least as important as the amount of firm capacity they provide.

The Energy Bill should, therefore, include a clear statement recognising that the future reliability challenges require highly flexible resources, including demand response, and not just a quantity-based approach (firm capacity) to deliver system reliability. It should direct the System Operator to regularly forecast net demand on the system and design and implement the mechanisms that value and deliver the products and services required to reliably operate the system at least cost over both operational and investment timescales. It is unnecessarily restrictive to attempt to specify market design on the face of primary legislation.

The role of the System Operator envisaged under the Draft Energy Bill is simply to mechanically manage the capacity market. It has no discretion over the nature of the products procured or the way they are procured and no incentive to seek out cheaper alternative providers such as those from the demand side of the market. The framework needs to be established such that there are strong sustainable incentives to minimise the costs of delivering the necessary level of reliability.

The Energy Bill should include a mandate for the Regulator to establish an incentive framework for the System Operator to minimise the costs of delivering reliability. In addition, the Secretary of State should establish minimum targets for the procurement of demand response to help kick-start the market in the provision of these services and ensure that the System Operator develops the necessary systems and expertise to exploit the benefits of demand response.

June 2012

Written evidence submitted by the Nuclear Free Local Authorities Steering Committee

The Nuclear Free Local Authorities Steering Committee (NFLA) is an organisation of local authorities from England, Scotland, Wales, Northern Ireland and the Republic of Ireland who raise legitimate concerns over the development of nuclear power, nuclear safety and radioactive waste management in the UK. The NFLA Terms of Reference notes its aim is the long-term phasing out of nuclear power in favour of an alternative energy policy consisting primarily of a wide renewable energy mix, microgeneration and a more concerted programme of energy efficiency. For more details on the NFLA consult its website http://www.nuclearpolicy.info.

This response has been developed for the NFLA by its Policy Advisor and arises out of a report initially commissioned by the media watchdog group “Spinwatch”. This submission though contains additional information from the original “Spinwatch” report.

The NFLA understands that the secondary legislation that relates to this Bill may not be published by the Department of Energy and Climate Change (DECC) whilst the Select Committee is considering the Bill. The NFLA are extremely dissatisfied that DECC have not provided the secondary legislation with the draft Bill, given that such legislation would embody the crucial detail underpinning the rationale for the Bill.

The NFLA also understands that the Select Committee has been told by DECC that, if it is to influence the content of the actual Bill that will be introduced to Parliament in the autumn, it must publish its report by the summer. In practice this will mean the Select Committee must complete its inquiry and publish its report by 17 July—just five sitting weeks away. The Select Committee has written to the Secretary of State to express its dissatisfaction with the timescale. The NFLA completely supports the Select Committee’s dissatisfaction on this matter. For such an important and complicated piece of legislation the NFLA is extremely concerned that this process is being rushed and could be sent for Parliamentary consideration without a due level of prior scrutiny. The NFLA plans to follow up this concern with a direct letter on such matters to the Energy Minister Charles Hendry.
The rest of this submission will consider some of the key elements of the electricity market reforms contained within the draft Energy Bill. The NFLA believe the main driver behind these proposed reforms is to assist the nuclear industry with unfair financial support equivalent to an effective public subsidy, either from the taxpayer or the electricity consumer. This will inevitably be to the detriment of the fast-growing and jobs-rich renewable energy sector.

1. “WE PROMISE NO SUBSIDIES”

When the UK Coalition Agreement was signed between the Conservatives and Liberal Democrats in May 2010 the UK Government gave a firm and unequivocal commitment. It would promote the construction of new nuclear reactors provided they received “no public subsidy”. The NFLA fundamentally disagree with the need for new nuclear reactors, but it was hopeful that this commitment would be kept to, given the greater need for the nascent renewable energy sector to receive financial support from the Government.

Just one week after the General Election, the new Secretary of State for Energy, Chris Huhne, told The Today Programme on BBC Radio 4 that he might oversee new reactor construction if power companies could do it without government subsidy. The key point, Huhne stressed, on which there was agreement within the coalition Government, is there will be no public subsidy.

However, many respected independent figures and the wider media were sceptical of this statement from the start. The Sunday Times said the government was planning to “rig the carbon trading market” in order to encourage the construction of new nuclear power stations. Peter Atherton, head of European utilities at Citigroup said this could increase electricity bills for households and businesses, and “transfer risk from the nuclear developer to the electricity consumer” and, in effect, subsidise nuclear power by the back door.

It was already clear when the Coalition Agreement was signed that “...what the government and EDF believe constitutes a subsidy is very different to the usual definition” according to Stephen Thomas, Professor of Energy Policy at Greenwich University. But, as the former Government energy advisor Tom Burke notes, “it soon became clear that neutering the planning system, capping the cost of radioactive waste management, continuing to accept the bulk of the nuclear industry’s third-party liabilities and putting in a floor price for carbon would not be enough.”

Most recently The Guardian said in no uncertain terms: “Ministers are planning to subsidise nuclear power through electricity bills—despite their promises not to.”

In the NFLA’s view, the draft Energy Bill and the proposed reform of the wholesale electricity market highlights a number of mechanisms which it believes the UK Government will use to provide what will be an effective public subsidy to the nuclear industry. The rest of this submission explains its views further.

2. ELECTRICITY MARKET REFORM

The UK Government’s Draft Energy Bill includes a commitment to Electricity Market Reforms (EMR). This is the most obvious way in which the Government is planning to subsidise new reactors. When the EMR plans were first announced The Daily Telegraph declared that:

“Years of lobbying by nuclear companies have finally paid off, as the Government ... reveal[s] plans to subsidise the price that they are paid for generating electricity.”

Writing in April 2012, the former Labour Environment Minister, Michael Meacher agreed: “The Coalition is about to rig the market through its so-called Electricity Market Reform programme which is aimed to favour nuclear at the expense of every other alternative. It will absorb huge amounts of direct and indirect subsidy even though the government has repeatedly and solemnly intoned that there will be no public subsidy at all for the building of new nuclear.”

Michael Meacher went on to talk about a triple subsidy, comprising a capacity payment, a carbon floor price, and a low carbon “contract for difference”.

There are actually four main elements to the EMR proposed by the UK Government, which will raise the price of electricity so that nuclear power can make a profit whilst giving the illusion there is no public subsidy:

— a Feed-in Tariff with Contracts for Difference (CfD-FiTs);
— a Capacity Mechanism;
— a Carbon Floor Price (CFP); and
— the Emissions Performance Standard.

The NFLA acknowledge that this issue is complicated and technical, but it is clear that behind the veil of such market reform there will be public subsidies. “The Government wants nuclear power but cannot be seen to subsidise it, so it has had to set up this set of convoluted measures”, argues Catherine Mitchell, Professor of Energy Policy at Exeter University.
3. FEED-IN-TARIFF WITH CONTRACTS FOR DIFFERENCE (CfD-FITs)

A CfD-FIT is a long-term contract between an electricity generator and a “contract counterparty” which enables the generator to stabilise its revenues at a pre-agreed level (the strike price—set by the Government) for the duration of the contract. Under the CfD-FIT payments would flow from contract counterparty to the generator, and vice versa. So when the market price for electricity is below the strike price, payments would flow from the contract counterparty to the generator. When the market price is above the strike price, payment would flow from the generator to the contract counterparty.

The CfD-FIT provides a subsidy to new nuclear reactors in two ways:

- Firstly, as a recent independent analysis undertaken by David Toke, Senior Lecturer in Energy Policy at Birmingham University has calculated, the strike price for nuclear will be around £15 per Kwh, which is a sum that is considerably in excess of what offshore wind-farm owners are currently being paid for their output. This is because new nuclear electricity will cost more than our existing generating capacity. There will almost certainly be no competitive bidding within the sector because there is only likely to be one supplier at present—EDF Energy.

- Secondly, it transfers risk from generators to consumers both by providing long-term contracts above market rates and by ensuring that generators are compensated when the market price falls below the strike price. One consequence of this will be a reduction in the cost of capital for nuclear generators so a simple proxy for subsidy would be to compare the interest rate offered with a CfD to the one that would have been offered without a CfD. However, no company anywhere has seriously tried to finance a nuclear plant to operate unprotected in a competitive electricity market, probably because it is known such a plant would be unfinanceable.

So CfD-FITs will virtually dispense with the free market in energy, replacing it with fixed long-term contracts, set as a result of auctions regulated by the government.

The UK Government published its proposals for the institutional framework for EMR in December 2011. It is proposing to ask the System Operator within National Grid to implement both the CfD-FIT (ie to act as the contract counterparty) and the Capacity Market. Discussions between Government and National Grid are underway with a view to agreeing precisely how the System Operator will fulfil this role and the exact nature of the relationship between Government and the System Operator.

David Simpson, global head of mergers and acquisitions at KPMG, says he expects the UK government to offer 35-year deals which could be illegal state aid under European Union competition rules.

The issue of whether CfD-FITs would amount to subsidy may be answered shortly if the Government follows through on its indications that it anticipates making a Phase II State Aid application for any interim CfD. This means the Government will ask the European Commission for permission to introduce the CfD-FITs—in other words it believes they will count as a subsidy to nuclear, but may be a permitted exemption.

The NFLA notes that Fiona Hall MEP, leader of the Liberal-Democrat group in the European Parliament, says she has no doubt the CfD-FIT is a subsidy. She has called for Liberal Democrats to speak out against this public subsidy for nuclear energy, which she argues goes completely against the Coalition Government Agreement.

Fiona Hall says if a CfD-FIT goes ahead British consumers may find themselves subsidising nuclear technology for over 40 years, the average lifespan of a nuclear reactor, solely to keep in profit the one remaining interested power company, France’s EDF. Billions of pounds will be diverted from the wind and marine energy sectors where the UK’s natural advantage lies, hampering British industrial leadership in these sectors and risking a major loss of business opportunities and new jobs.

The UK Government has not yet achieved European Commission assent to its proposed electricity market reforms, considered essential to enable new nuclear build. Minister of State for Energy Charles Hendry said in April 2012 that the government is “engaging closely with the European Commission to ensure the electricity market reform proposals are consistent with the appropriate rules.”

The NFLA notes with concern a document, which was leaked to The Guardian, in which the UK Government lays out plans for the “contracts for difference” to the European Commission. The NFLA urges the Committee to investigate the content of this document further. It says: “Our reforms will put in place a regulatory framework based on feed-in tariffs for all low-carbon technologies, which will allow younger technologies to mature so that in the near-to mid-term future they will be able to compete in the open market... in time, we...
expect that this regulatory framework will enable different low-carbon technologies to compete against each other on a level playing field for their appropriate role in the energy mix.\textsuperscript{xxv}

This is the clearest evidence yet of government plans to subsidise nuclear power through the back door, by classifying it with renewables as “low-carbon power”, despite repeated assurances that there would be no public subsidy.

The Guardian has also seen a presentation made by Scottish & Southern Energy (SSE) to MPs in March 2010, saying the plans contain “hidden subsidies”, and will be open to challenge on legal grounds, and could “mess up” funding for renewables. SSE says the Government is bringing in the changes to “hide the subsidy” to avoid a future. SSE notes the plans will have to “clear state aid [rules], yet subsidy for a mature technology like nuclear is a likely stumbling block with the commission”. SSE said: “We are concerned because if a nuclear subsidy messes up renewable support [there will be] massive uncertainty in our core market.” The NFLA is aware that the Chief Executive of SSE, Ian Marchant, will be outlining such concerns to the Committee on the 12 June. These important concerns from one of the largest electricity utilities in the UK should be considered carefully by the Committee.

However, the Secretary of State for Energy and Climate Change, Ed Davey, argues that nuclear will not receive a higher price than low carbon technologies, so there will be no public subsidy of nuclear generation.\textsuperscript{xxvi} In other words because the CfD-Fit puts nuclear on the same footing as other forms of low-carbon energy, which will also receive a feed-in tariff, this is not a subsidy for nuclear power.

The Select Committee should note that the plans are likely to come under severe attack in the European Parliament, particularly from the European Parliament Green Group who are preparing to take legal action against the UK Government, arguing that the plans amount to state aid for nuclear. The CfD-Fits will gradually replace existing subsidies for renewable energy which were designed to assist new technologies such as wind or marine energy in expanding their deployment and reducing costs through economies of scale, thereby helping them reach market maturity. Fiona Hall MEP has also argued that it is wrong to apply the same mechanism to nuclear technology which has existed for over 70 years but has never achieved any cost reductions. The NFLA sympathises with this view.\textsuperscript{xxvii}

4. Carbon Floor Price

The NFLA believes the proposed carbon floor price in the Draft Energy Bill is being developed as a subsidy to the whole “low-carbon” generating sector. The way it is designed means that existing low-carbon generating capacity will also receive payments. So EDF Energy will receive a windfall for its existing nuclear plant. This is a subsidy because existing nuclear plants were paid for by the UK taxpayer and sold at artificially low prices to EDF Energy who now operates them.

There is a dispute about the value of the windfall. The Treasury Secretary, Justine Greening MP, argues the benefits to the existing nuclear sector are likely to be: “an average of £50 million per annum to 2030 due to higher wholesale electricity prices”.\textsuperscript{xxviii} But according to calculations by WWF and Greenpeace, the proposed carbon price floor could result in windfall profits for existing nuclear generators of up to £3.43 billion between 2013 and 2026. This equates to £264 million per year.\textsuperscript{xxix}

The proposed Carbon Floor Price was contained in the Finance Bill discussed in Parliament before the 2011 summer recess. Even £50 million per year to existing reactors will give a £1 billion windfall to nuclear power operators, predominantly EDF Energy. Labour MP Nick Dakin put forward an amendment to the Finance Bill to introduce a windfall tax, but failed to get approval.\textsuperscript{xvii} The Carbon Floor Price is expected to be introduced in April 2013.\textsuperscript{xxvii}

5. Capacity Mechanism

The Draft Energy Bill contains a little more detail about the “capacity mechanism”. This was also proposed in the earlier 2011 White Paper but it is still not yet fully defined. Its main purpose is to address what the Government sees as the problem of “resource adequacy”: “... how to ensure there is sufficient reliable and diverse capacity to meet demand, for example during winter anti-cyclonic conditions where demand is high and wind generation low for a number of days.”

Energy Fair, a group of independent researchers and energy consultants which has made a formal complaint to the European Commission about unlawful state aid by the UK for nuclear power (the NFLA has formally supported the Energy Fair complaint), says the Government’s proposals in this area need to be more fully defined before it is possible to see more clearly whether or how they provide a back-door subsidy for nuclear power. If, for example, they allow the Government to help pay for the building of nuclear power stations that would be used only rarely, that would indeed be an unjustifiable subsidy for nuclear power.\textsuperscript{xxvii}

One of the most disconcerting things about the Bill is the Government’s decision to omit a binding commitment to decarbonising the electricity supply by 2030, which the Climate Change Committee described as essential to ensure the UK meets its 2050 carbon targets. Instead, a statement from Ed Davey promised to decarbonise the UK’s electricity supply “in the 2030s”, essentially pushing it back by another decade and prompting fears, which the NFLA share, that this is the start of an incremental slip in government commitment
to carbon targets. The Bill will give the government powers to introduce an emissions performance standard limiting how much CO2 power plants can release, but this will initially be set at 450 grams of CO2 per kilowatt hour of electricity produced which is not enough to limit development of gas. Taken together with the new Capacity Mechanism in the Bill which will favour the construction of new gas plant, this has raised concerns about a renewed “dash-for-gas”.

Nor are there any new commitments to energy efficiency. The best and cheapest way to make progress on decarbonisation, security of supply and affordability is to reduce the amount of energy consumed through energy efficiency measures, where Councils can take a leading and pro-active role. The omission in the bill of the “Negawatts” strategy to incentivise energy savings is puzzling and very disappointing.

6. Conclusions

In the NFLA’s view, the UK Government appears to be planning to force consumers to subsidise nuclear power through its electricity market reforms contained within the Draft Energy Bill, despite having repeatedly promised there would be no public subsidy for new reactors.

Offering new nuclear operators a fixed unit price for the cost of spent fuel management and disposal represents a subsidy of perhaps as much as £427 million per reactor. Underwriting nuclear operators’ nuclear waste and decommissioning costs also represents a subsidy.

Any limit on liability on the costs of nuclear accidents eases the burden on nuclear operators. Paying for commercial insurance could add around half a euro to the cost of a unit of electricity, so a cap on liability represents a subsidy. Though this is being dealt with through a different policy process, this is indicative of the kind of unfair support the nuclear industry is receiving.

Subsidising new technologies, which can help meet the country’s objective of reducing greenhouse gas emissions, in order to help their deployment and reduce costs so they can eventually reach market maturity and no longer require a subsidy, is a sensible government policy. The NFLA strongly supports Government assistance for renewable energy technologies, energy efficiency and microgeneration, and remains disappointed they are not given the kind of support that our key European competitors are providing. But subsidising a nuclear technology which has already existed for over 70 years without achieving the expected cost reductions, and which produces a dangerous waste we are not sure what to do with, is certainly not in the interest of the taxpayer or the electricity consumer.

June 2012

* “Spinwatch” is an independent non-profit making organisation which monitors the role of public relations and “spin” in contemporary society. Spinwatch was founded in 2004 and promotes greater understanding of the role of PR, propaganda and lobbying through its website and through other outreach and campaigning activities, including media appearances, book and pamphlet writing, “Spinwalks” and investigative reporting.

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EXECUTIVE SUMMARY

With the purpose of increasing supply chain investment and creating new UK jobs, this paper promotes a number of considerations within the context of the new Energy Bill that would improve the certainty of future generation projects being progressed and encourage supply chain development as well as investor certainty and minimising costs to the electricity consumer. It also articulates how better returns on investment could accrue to the UK taxpayer, and in particular to future generations who would benefit from the lower carbon emissions, decreased price volatility and technology opportunities resulting from a refinement of current policy proposed in the Bill.

The key points are:

— **Confidence in policy, strategy and implementation** needs to be enhanced from its current level to attract investment. Whilst some moves have been made to link policy and strategy following the 2011 Ofgem review, there is little feedback from implementation (success or failure) back into policy or strategy on an ongoing basis. Government could facilitate the development of a policy/strategy/implementation scorecard that could result in pro-active actions to maintain implementation in line with policy and strategic goals.

— Recognising that the Government does not wish to be prescriptive on the mix of different generation types, nevertheless the use of targets for different categories of generation is helpful as illustrated by the increase in renewable generation projects following the 2020 EU target. We believe the three broad categories of generation are low carbon non-renewable (eg nuclear and CCS fitted thermal), renewable (as per the Renewables roadmap) and lower carbon thermal (eg baseload and peaking gas). An overall generation roadmap would be helpful.

— **Better articulation of the long term benefits of some forms of generation**—particularly those capital intensive low carbon forms of generation which have asset lives significantly longer than their financing periods. The argument for investing in these types of project (nuclear, pump-storage & hydro, tidal range) is different from more conventional forms of generation and serves to reduce the cost of energy for future generations.

— **The benefits of a foreseeable and stable generation strategy** in terms of the supply chain—for example long term, value based procurement methods that encourage alliancing which has been shown to reduce costs and spread risk in other market segments, including water, gas and electricity transmission.

INTRODUCTION

The Energy Bill is needed so as to create greater confidence for investors, utilities, supply chain members and the public. More certainty will create an environment of investment which will result in more efficient, better value and more sustainable (economically, environmentally and socially) solutions.

The Government’s three pronged energy strategy of low carbon, low cost and security of supply has a tension which demands compromise. However the issue is that, in establishing a vision, the Government needs to demonstrate its commitment and not allow doubts to surface, for example when responding to some MP's concerns on wind farms or the cost of energy. Investors are encouraged by consistency, predictability and opportunity. The Electricity Market Reform (EMR) is designed to achieve this but its complexity and the fact that some of the provisions are new and uncertain introduces risk which needs to be mitigated through firm Government commitment.

The central point of this feedback is that there is an increasing cost as time goes on delaying the reduction of the low carbon element. Therefore by taking a low cost, high carbon option today, payment will need to be made with interest tomorrow. It is inevitable therefore that electricity prices will rise—no matter how the ultimate solution is packaged.

Although offshore wind may provide improved annual energy contribution—say 20% by 2020, it cannot be relied on to deliver on demand at peak times and therefore a back-up facility is required. Currently the natural and most cost effective solution is to supplement wind with gas power stations as back-up, even though this is philosophically challenging in the context of the Government’s wider long term decarbonisation objectives.

New technologies continue to offer hope but they are unlikely to be available to satisfy demands over the next 10 years. However, they require early investment if they are to give the UK longer term opportunities. Therefore tidal, wave and carbon capture solutions need continued attention from the research institutions and industry whilst at the same time ensuring that decision makers pursue the goal of balancing:

— Nuclear.
— Gas.
— Wind.

Following the introduction of the EMR, policy should continue to guide the market achieve the right mix of these three main sources for 2030 and ensuring that new technologies are available to enter the mix as and when they become commercially deployable. The EMR’s different instruments, including capacity auctions and contract for difference feed-in-tariffs, are contract rather than market based and there is insufficient detail available as yet to determine how effective they will be in stimulating investment in different technologies.

It is worth noting that although targets can only be targets, they have a positive effect in encouraging industry to focus on specific technologies. The EU renewables target, for example, has had a positive effect in driving investment into the offshore wind sector at a much higher rate than would have been the case had a target not existed. This point needs to be carefully considered when the 2030 EU targets are negotiated. A key question is whether a “low carbon” rather than a “renewable” target will be sufficient to drive further investment into offshore wind—in practice, both a low carbon and a renewable target would be preferable giving nuclear and renewable developers incentives to invest in a market where they will both be required.

Even taking account of the significant investment in demand reduction, such as the Green Deal, there is an anticipated shortfall of supply from 2016 and 2021 and the only one of the big three technologies that can fill the gap is gas. Therefore the need for gas is a flexible one—firstly to provide capacity to 2021 and thereafter to 2030 to provide back-up support. Grandfathering of the Emissions Performance Standard in relation to gas will therefore be a key consideration for investors in new gas capacity. It is also worth noting that electricity demand will grow significantly in subsequent decades as the transport and heat sectors (collectively responsible for over 60% of carbon emissions) increasingly use electricity to reduce carbon emissions and achieve the UK’s 2050 Climate Change Act requirements. Such an increase is after taking account of demand side reduction measures such as smart metering, energy efficiency improvements and greater investment in electricity storage and inter-connectors. Significant increases in generation capacity will therefore be required over several decades.

**Creating Investor Certainty**

New energy policy is needed to assure utilities and their stakeholders a predictable return for their investment.

Investment is not limited only by the provision of finance from the markets or balance sheet for the construction of projects. With the required expansion of new generation assets to replace existing assets, to meet future demand and to meet the requirements of the Climate Change Act, investment is also required from organisations wishing to develop new projects over and above those already operating in the market as well as in the supply chain.

Supply chain investment is complicated by the increasing number of different technologies identified to be part of the UK generation mix with different skills and capabilities being required for offshore renewable by comparison with conventional thermal plant and different again for new nuclear.

The goal of creating investor certainty was at the heart of the Electricity Market Reform objectives. 18 months later and energy policy development is maturing with a new Bill to be presented to Parliament in 2012/13, national policy statements confirmed and electricity market reform measures in hand, although much of the detail is still to be finalised.

It would, at this stage, be damaging to investor confidence to change the existing policy direction but there is an ongoing need to add or refine policy to meet specific short or longer term needs arising, for example, from unexpected events, market failure or policy failure in delivering expected outcomes.

The slower than expected roll-out of new nuclear projects, the failure of the first CCS competition, the rising costs of offshore wind and the retirement of 25% of the UK’s existing generation capacity by 2017 are all examples of such events. Taken cumulatively, they should force consideration of additional policy interventions that may be needed to mitigate the effects of these and future events in the market place.

The new Gas Strategy (to be published in Autumn 2012) is welcome in providing greater clarity for investors in new gas plant, which is urgently required if such plant is to be commissioned before the energy gap manifests itself. However, a new gas strategy in itself, will not deliver the carbon emission targets reflected in Government’s own carbon budgets or the ultimate goal of 80% reduction in emissions by 2050. The provisions within the new Energy Bill are designed to lower carbon emissions over time and there is a strong argument to suggest that carbon budgets should be included within the Bill.

Energy planning is a long term process. Sufficient lead time needs to be given to ensure that decisions relating to planning and support mechanisms are in place sufficiently early. These will enable investors, both in the project itself and the supply chains that are required to construct them, to proceed on the basis of predictability of outcome, including planning consents, connection requirements and timings.

An example of this is new nuclear, where the Energy White Paper of 2006 confirmed that new nuclear would form part of the future generation mix. However, a consenting decision on the first new nuclear plant at Hinkley Point is not expected until March 2013, with construction completed around 2020. It remains the only new nuclear project to have been formally submitted for planning consent.
The withdrawal of RWE and E.ON from the nuclear market creates further uncertainty for investors in the supply chain. Balfour Beatty has been active in establishing a nuclear power supply chain in the UK since the new nuclear programme was announced. Balfour Beatty’s construction philosophy has been extensive involvement of SME organisations within its supply chain and the relatively slow pace of new nuclear role out creates delay and uncertainty. Delay has a direct impact on job creation, particularly in the generation sector where 90% of the jobs created are during the construction phase.

There continue to be uncertainties regarding many aspects of the EMR. For example, the time to obtain state aid approval, the possibility of not getting approval or the possibility of judicial review if strike prices are awarded via the FID enabling process are concerns. Continued uncertainty, both in terms of timing and outcomes, damages the prospects for UK companies to invest in their supply chains and gain competitive advantage over non UK organisations who have had the benefit of building their supply chain capabilities in their domestic markets, not just in new nuclear, but in offshore wind and increasingly in carbon capture and storage.

It is appreciated that the Government recognises this and is attempting to take a leading position in CCS and marine renewables and their prospects for enabling UK plc to export its expertise, whilst at the same time supporting development of the nuclear and offshore wind supply chains in the UK.

Parsons Brinckerhoff, Balfour Beatty’s professional services arm, has invested heavily in developing capability in both CCS and marine renewables since 2006. It has benefitted from securing, in competition, major studies from DECC between 2008 and 2011 which have provided a partial return on that investment. However, the volume of opportunity that is required to secure a return on that investment is not evident in the market place in 2012. Further renewed investment by the supply chain will be required over the coming years. For example, Parsons Brinckerhoff is playing a significant role in the South West Marine Energy Park with resource being provided on a pro-bono basis.

The appetite for supply chain investment is real, as illustrated above, but requires continued confidence in the market’s ability to deliver against Government’s policy and strategic objectives. As and when this is disrupted, we believe Government needs to be in a position to react quickly to ensure that supply chain and investor confidence is maintained. This suggests that policy and strategy needs to be continually informed by progress on implementation and adjusted as appropriate. Confidence in the market also spawns investment in community based initiatives. Forecast progress against carbon targets may activate the mechanism through which such intervention is warranted. A requirement will be to ensure that such intervention is based on appropriate evidence.

A tangible pipeline of projects and a co-ordinated approach has been demonstrated in other sectors to realise significant cost savings. It allows the use of more effective procurement strategies, such as alliancing, which have realised savings of between 10 and 30% in the sectors in which it has been used. The use of alliancing has also been proposed as an opportunity to reduce offshore wind costs in the recent report from the Offshore Wind Cost Reduction Task Force.

Electricity Market Challenges

Although electricity demand is currently flat, some estimates predict that it will be approximately double the current demand by 2050 as the heat and transport sectors turn to electricity as they seek to reduce their carbon emissions. This is after an assumed 25% reduction in today’s demand driven by energy efficiency measures. Government policy recognises this but progress in the market to deliver the long term policy objectives is challenging from the perspectives of investor certainty, the transition from fossil to low carbon technologies, the acceptability of the costs involved and the market’s ability to meet the policy objectives. To reduce the whole life costs of a plant, suppliers need the market reassurance to establish the best horizontal and vertical relationships with strategic partners and supply chain members.

Analysis of the electricity sector demands between now and 2050 suggests that the electricity supply sector as we know it will be fundamentally different both in its cost base and the supply chain and investment demands. The stated objectives of the Energy Bill are to meet the UK’s decarbonisation and renewable targets, at least cost to consumers whilst ensuring continued secure energy supplies and creating the right conditions for markets and private investment, through greater regulatory certainty and clarity.

These objectives are logical but tensions are inherent within them. For example, the goal of reducing Government subsidies, increasing low carbon generation and maintaining competitiveness with global energy costs are conflicting.

A challenge is that electricity charges will have to rise over time because the costs of meeting the new objectives have costs associated with them. However, as the Stern Report identified, there are new benefits associated with these additional costs—or at least minimising indirect costs that would occur if the carbon emissions policy was relaxed. It is the latter point which, to those of us at Balfour Beatty engaged in the energy
sector, appears not yet to have gained recognition in the public domain. The long term benefits identified by Stern do not appear to be reflected in the Energy Bill’s Impact Assessment.

Commentators are looking at electricity costs in isolation, using economic models that have not changed and which reflect private sector cost of capital and excluding the wider environmental and social benefits arising from reducing carbon emissions. The reason for this is clear: a private sector power plant developer will not realise these indirect benefits and cannot raise finance at Government social discount rates or the lower rates used in the Stern report.

Equally, the consumer and politicians support the development of low carbon electricity but their willingness to pay for the longer term benefits identified by Stern is tempered by their ability to pay and, in the case of business, the impact of such costs on their competitiveness.

It is likely that it is these concerns which create some of the tensions between setting policy and its ultimate delivery. The balancing factor in the equation to date has been subsidy through ROC’s, and in the future FiT’s or CfD’s for low carbon generation. However, much of the language around subsidies has revolved around the cost of generation rather than a proxy for the benefits that arise from pursuing a low carbon agenda.

As a consequence, the public perception is that low carbon electricity is relatively expensive. This leads to an argument that competitiveness is compromised if businesses are required to pay the full cost. In addition, low carbon generation is seen as having no improved benefit over and above fossil fuels other than reducing carbon emissions in a world where the rate of increase in carbon emissions is not under the UK’s control.

The public at large understand the argument for pursuing low carbon but the consumer’s willingness to pay for the associated benefit is less tangible, partly because carbon emissions are a global rather than local issue and partly because many of the benefits accrue to future society rather than directly to today’s electricity consumer.

A high energy consuming business competing internationally is arguably more concerned with maintaining competitive advantage than providing financial support to the Government for the benefit of future society. There is therefore some logic that the tax payer rather than the consumer should support longer term carbon reduction goals. The EMR focuses on the market considerations and seeks to drive unit electricity costs down over a prescribed time period within the context of the overall low carbon framework irrespective of the project’s economic life. As a consequence, it can be argued that longer term options and their associated benefits are not adequately assisted by the EMR.

UNDERSTANDING THE DIFFERENT REQUIREMENTS OF THE FUTURE GENERATION MIX

The increase in generation capacity for the UK over the next 40 years requires all assets at its disposal, whether they be shale gas, natural gas, new nuclear, renewables, coal or gas baseload with CCS, grid balancing mechanisms such as interconnectors, pumped storage and smart grids and energy efficiency measures to significantly reduce demand. However, the wide variations in characterisation of such assets in terms of cost/time and longevity of generation plant do not lend themselves to a “one size fits all” approach of evaluation which may, in some cases, delay or halt potential projects, even though their overall benefits are aligned with Government policy. EMR recognises different technologies but only over the shorter term and as a consequence the long term benefits for society in the future, as exemplified by Stern, are absent.

The methodology used to assess the whole life cost of different forms of energy is flawed. There is a need to develop an alternative meaningful way of measuring the benefit cost ratio of different forms of energy.

Those in the supply chain have grown used to projects either being delayed or shelved. This creates a cynicism which militates against investment in new techniques, productivity gains, relationship building, recruitment and developing skills. EMR is designed to mitigate these concerns but only if, when the detail is published, it provides a stable investment environment. The length of CfD contracts will be a critical consideration from a financing perspective and will need to be sufficiently long to allow project finance to be viably applied. The financing of generation projects is critical but some forms of generation have a significant asset life after the financing phase is complete.

Frustratingly many projects are evaluated in a simplistic and truncated manner which fail to take into consideration these wider benefits. Projects developed in the private sector have to demonstrate relatively high returns on investment in relatively short periods of time with little recognition of wider or longer term benefits. As a consequence, projects with lower capital costs but higher running costs are inherently more attractive to banks who are limited in their power to lend for periods longer than 20 years, or even shorter in the UK.

However, new nuclear, hydro and tidal power all have relatively long asset lives, 60 years in the case of nuclear and over 100 years for hydro and tidal power. Unfortunately, using private sector hurdle rates means that the low operating costs and associated high revenues experienced after the financing period are effectively ignored, meaning that between 50 and 75% of the project’s whole life costs are effectively worthless by the time they are discounted back to a net present value. As a consequence, whilst seeming attractive in principle (extensive life and low running cost), this is not reflected in the financial analyses which are skewed towards short term returns.
Ironically, this benefits decommissioning costs to some extent as future decommissioning costs are discounted back to a small net present value. Decommissioning costs would be better accommodated by establishing a sinking fund and accounting for this as part of the annual operating costs whilst refining the methodologies used to compute levelised costs and total carbon savings to reflect the differences in different generation mixes. This would advantage both nuclear and hydro/tidal power projects by comparison with other forms of generation on a whole life basis. However, it would not assist with how the high capital cost can be financed, nor the time period over which the financing was available.

Current policy, as set out in previous sections of this paper, is to treat the low carbon forms of generation as high cost rather than high benefit and to support the high cost through revenue support mechanisms. The attraction of revenue support mechanisms is presumably driven by the private sector characterisation of the electricity supply market where funding originates from the customer over a prolonged time period rather than at the time the cost is incurred. The only issue with this is that capital support mechanisms are inherently more efficient than revenue support, particularly for capital intensive projects. A good example of where Government is using a capital rather than revenue support in a privatised industry is high speed rail and the fast rural broadband initiative. In these cases the benefits are given much more emphasis than the costs and it has state aid approval from Europe. There are also examples in the low carbon innovation programme such as capital support to demonstration projects in CCS, marine, nuclear and offshore wind. Whilst CfD’s will be effective, subject to its contract length, for projects where the useful economic life is relatively short—say less than 30 years—a different form of incentive based on capital rather than revenue support is more attractive for high capital cost energy projects with low carbon emissions and longer lives. Capital support would, through lack of revenue subsidy, recognise the long term benefits and liabilities of such projects and enable this to be reflected in consideration of its future value. Such an approach for these types of project would represent a better return to the consumer and allow the cost of financing to be reduced, enabling projects to be promoted and developed more quickly, albeit within the constraints of the Planning Act. It would also enable longer life projects with low running costs to demonstrate the positive impact they can have on reducing subsidies and applying continued downward pressure on future energy costs, simply because once the financing period is over, the cost of energy drops dramatically.

**Summary**

With the purpose of increasing supply chain investment and creating new UK jobs, this submission promotes a number of considerations that would improve the certainty of future generation projects being progressed and encourage supply chain development as well as investor certainty and minimising costs to the electricity consumer. It would also represent a better return on investment to the UK taxpayer, and in particular to future generations who would benefit from the lower carbon emissions and the technology opportunities resulting from a refinement of current policy.

The key points are:

- Electricity demand is set to double by 2050 as the transport and heat sectors are decarbonised and the population continues to increase;
- Energy planning requires long timescales and a long term approach;
- Investor certainty requires commitment to the existing policies and the new Electricity Bill, but it does not preclude more advantageous support mechanisms where the existing policy is failing to deliver the throughput of projects required to meet Government targets and/or where future benefits are being undervalued;
- Given the long planning and development timescales, urgent decisions are required where predicted outcomes fail to materialise in practice (eg slower nuclear and renewable build-outs, uncertainty over gas investment, delays in CCS commercialisation). In this context, the introduction of the FID enabling provisions in the Energy Bill are welcomed;
- The UK supply chain, if it is to create new jobs in the energy sector, needs tangible opportunities to invest in the development of appropriate capabilities and a confidence that planned projects will come to market quickly and sustainably;
- The consumer and tax payer are not necessarily achieving best value if the future generation mix is financially incentivised to attract lower capital cost, short operating life generation assets;
- The new Gas Strategy is welcome as it will promote a sensible balance in the generation mix and address concerns currently limiting future investment in gas, given its relative importance in the future generation mix. However, higher capital cost but longer life projects still appear to be less competitive in cost terms when only short term benefits and costs are considered, even after the recent electricity market reforms;
- The consumer today, and tomorrow’s tax payers, would both benefit from an EMR+ approach where the currently proposed reforms were applied to shorter life assets such as gas and wind and an additional mechanism was applied to low carbon assets with asset lives significantly longer than the maximum financing period;
Written evidence submitted by the Nuclear Industry Safety Director’s Forum

1. THE SAFETY DIRECTORS’ FORUM

1.1. The Nuclear Industry Safety Director’s Forum (SDF) brings together Senior Executives and Board members who carry the responsibility for the independent assurance of nuclear safety, in addition to nuclear security, environmental, health, quality and conventional safety matters (EHSQS) for their companies. Every site involved in civil nuclear operations, licenced and regulated by the Office for Nuclear Regulation (ONR), and every site involved in defence nuclear operations, authorised and regulated by the Ministry of Defence, are represented as are the three new build consortia in the UK and ‘small users’ such as universities and pharmaceutical companies. In total we have some 27 individual members all of whom are independent of operational line management.

1.2. A key role of the SDF is to identify and consider the strategic EHSQS issues facing the industry and agree how the industry should respond. One of our key objectives is to ensure the high standards of nuclear safety and security achieved in the UK over the years is maintained and improved. We work closely with the UK regulators and DECC, both of whom we meet twice yearly.

2. OVERVIEW

2.1. The SDF welcomes the opportunity to participate in the Energy & Climate Change Select Committee’s pre-legislative scrutiny of the draft Energy Bill. Our primary interest in the draft Energy Bill relates to those sections concerned with the ONR and its formalisation as a body corporate under primary legislation, namely Part 2, Clauses 48 to 81, and Schedules 4 to 6. The interest of individual member companies of the SDF will extend across the Bill in its entirety but the Forum’s comments in this submission are restricted to those sections listed above.

2.2. Our submission is also relatively brief as we believe that, as it is currently drafted, the Bill is strong and effective in delivering on the Government’s objective of creating an independent nuclear regulator, an objective that the industry and the SDF have supported for many years. We believe that the need for a strong, independent regulator is one of the key learning points from Fukushima and that the creation of the ONR, led by a Chief Inspector, will help in providing clarity and certainty for the industry while at the same time giving the general public confidence that the sector is being properly scrutinised. We are confident that, in very large part, the draft Energy Bill will serve to ensure that the nationally and internationally recognised work that the ONR is undertaking will grow and be sustained into the future. The Bill will also ensure that ONR will continue to develop as a consistent, proportionate, transparent and efficient regulator.

—— An EMR+ approach that included a capital rather than revenue support mechanism for long life low carbon forms of generation would reduce financing uncertainties, and reflect the benefit to society (rather than consumers) of future low carbon emissions, as well as being more cost efficient than revenue based mechanisms; and

—— If such a move accelerated the progression of new nuclear and other forms of long life assets such as tidal power, the UK supply chain would benefit and invest accordingly.

The supply chain can assist in reducing costs as a consequence of predictability of policy and commitment of the market in general. Erratic or unpredictable project pipelines create cost in the supply chain as they have to cover staff and other costs during unproductive troughs in the market and pay additionally to cover peaks. Loss of continuity also reduces value as invested knowledge and experience in teams is lost. Targets or roadmaps that recognise different options help address the urgency required in decision making, noting that taking a project from inception through consent to construction and commissioning can take between five and 15 years. It is also worth noting that several projects, particularly gas, have received consents but have not been constructed due to specific market issues causing further uncertainty for supply chains.

A concern has been the means by which the benefits of the new low carbon generation mix have been articulated—changing the language to reflect the real reason why low carbon forms of generation are preferred and reflecting the fact that lower carbon benefits accrue to society as a whole rather than the developer of the generation asset. Whatever generation mix is adopted in the future, impacts on fuel bills will be higher because of the short period of time we have allowed ourselves to replace aging generation assets and investing in new, cleaner generators that will benefit future generations. This includes greater transparency on the types of benefits and costs that accrue from different forms of generation and continued investment in new forms of generation that will provide the UK with new jobs and opportunities for inward investment and export.

Finally, there is a need for continued focus on developing (not changing) policy that is agile in respect of encouraging the market to invest, particularly in longer term solutions that can operate and generate benefits beyond their financing periods. This will provide new opportunities for the supply chain as well as enhancing the value of action taken today for future generations.

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2.3. Having given this strong support for the draft Bill, we would wish to make one very important general point about the legislation’s implementation, along with a small number of more specific points relating to the detailed content of the Bill.

3. THE NEED FOR TIMELY IMPLEMENTATION

3.1. It is now three and half years since Dr Tim Stone submitted his recommendations on nuclear regulatory reform to the then Secretary of State, which included a wide-ranging restructuring of the Nuclear Directorate. Clearly much progress has been made in this regard but we believe that the prompt placing of the ONR on a full independent statutory footing is a crucial step in delivering the positive benefits that Dr Stone identified in his report.

3.2. To highlight just one of these areas, Dr Stone identified that "the pay and other critical compensation elements of current and prospective (Nuclear Installation Inspectorate) staff must be adjusted rapidly to enable recruitment of the full complement of staff needed" (p.34) and went on to note that certain skills are in very short supply. This is an issue that is as pressing today, if not more so, than it was in 2008 and we understand that the ONR, despite the changes it has undergone, is still struggling to recruit the key staff it needs due to the civil service pay restrictions it continues to be subject to. The longer it takes to free ONR from such restrictions the more significant the resourcing problem becomes.

3.3. Although additional scrutiny of legislation is to be generally welcomed, given the cross-party support the formation of the ONR enjoys and given the importance of the role performed by it, continuing delay to the legislation granting the ONR full independence is both unnecessary and unwelcome. We would urge the Committee to do all it can to ensure a speedy and timely introduction and passage of this crucial legislation.

4. NON-EXECUTIVE DIRECTORS

4.1. Schedule 5, and in particular paragraphs 2 and 4, deal with the appointment of up to seven non-executive members for the ONR, predominately by the Secretary of State. Paragraph 4, subsection (3) mandates that one non-executive member must have experience relevant to the ONR’s nuclear security remit and subsection (4) allows the Health and Safety Executive (HSE) to appoint one non-executive from amongst its members.

4.2. Without wishing to unnecessarily restrict the pool from which the remaining non-executives can be picked, we believe that it would be extremely beneficial if the Bill were to direct that one or even two non-executives had to have demonstrable and directly relevant experience in nuclear safety (as opposed to security) matters. This would assist the ONR in properly holding the industry to account and assist the industry through guaranteeing that a quorum of the ONR’s non-executives fully understands the requirements and regulations placed on nuclear licensed sites and operators. To ensure the appropriate degree of independence from the HSE, this mandated number of nuclear safety experienced non-executives should not include the HSE nominated non-executive.

5. REMUNERATION OF ONR EMPLOYEES

5.1. For the reasons stated in paragraph 3.2 of this submission, the provision under Schedule 5, paragraph 12, subsection (2) of the draft Bill, which allows the ONR to set the terms and conditions of its own employees, including those relating to remuneration, is one of the most crucial in this part of the Bill. It is vital that it is retained in its entirety as the Bill makes its progress through the legislative process.

6. FEES AND CHARGES

6.1. As stated in paragraph 2.2 of this submission, the industry and the SDF has strongly and consistently supported the creation of an independent regulator and has done so in the full knowledge that this would mean an increase in the level of fees and charges that the industry would incur to meet the costs of this stand-alone body. We reiterate this support here.

6.2. However, we would express some slight concern and reservation about the somewhat open-ended scope of Clause 81 to allow the Secretary of State to introduce secondary legislation to extend the ONR’s capacity to recover its costs. Any such process to alter the fees and charges to which licensed operators are subject must be carefully controlled and subject to full scrutiny by Parliament (eg subject to Affirmative approval from Parliament), as well as full consultation with industry.

6.3. Cost certainty is important for the whole nuclear sector but it is particularly crucial for the new build consortia as they look to take forward their nationally important projects in the UK and the provisions within Clause 81 must be viewed in this light.

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105 http://www.decc.gov.uk/assets/decc/what%20we%20do/energy%20supply/energy%20mix/nuclear/whitepaper08/1_20091116131031_e_@_nuclearreviewstoneadvice.pdf
Written evidence submitted by REG Windpower Ltd

OVERVIEW

This paper has been prepared by REG Windpower Ltd in response to the Energy and Climate Change Select Committee’s call for evidence into the draft Energy Bill. Although REG Windpower welcomes the Government’s stated desire to increase the amount of energy generated from renewable sources, we are concerned that their commitment to certain technologies, including onshore wind, is currently seen as uncertain by investors. This is making it difficult to fund larger scale renewable projects and create the green jobs necessary for the country’s low carbon future.

Moreover, there continues to be a lack of clarity and policy flaws in regard to the Electricity Market Reform proposals which will be taken forward in the draft Energy Bill, further hindering investment in the CfDs by wind farm developers and other technologies.

Our submission makes the following recommendations:

— The current issues around the cost and terms of finding a route to market for independent developers urgently needs to be addressed, not least of all because this is adding a significant cost to consumers’ bills due to a lack of competition in the PPA market.

— There should be a commitment to maintain the Renewables Obligation (RO) concurrently within the EMR until the Contract for a Difference Feed-in-Tariffs have demonstrated that they can act as a suitable replacement.

— More information needs to be made available about the proposed CfDs, including clarification about how tariffs will be set and allocated, and how price variations for power generation that is inherently variable such as wind will work in practice.

— The 15 year rate of return on CfDs should be extended to 20–25 years to bring the incentive in line with other EU mechanisms and provide the longer-term rate of return that is needed to attract investment in renewable projects.

— To maintain market certainty and investor confidence, there should be no reduction in the tariffs set out in the Renewables Obligation Banding Review. This is particularly critical for wind power, where a reduction to 0.8 ROCs would make it difficult to raise finance for projects.

THE TRANSITION FROM THE RENEWABLES OBLIGATION

As noted in our response to the original EMR consultation, we believe that the Renewables Obligation should be retained within the EMR framework until the new CfD scheme has demonstrated that it can act as a suitable replacement. Although the RO has helped the wind industry become a leading contributor of the UK’s renewable energy supply, making up one third of renewable deployment and 2.5% of total energy generation, the ongoing uncertainty about how the EMR will work in practice at this late stage is discouraging investors from putting up the necessary capital to get projects off the ground.

The ability of independent onshore wind developers to raise bank finance is severely constrained at present, with fewer than five banks lending to projects less than 20MW in size, meaning some schemes have now stalled for want of finance capital. This is further compounded by a number of factors including the rising cost of capital items needed for onshore development, continued issues around planning consent, an unfavourable exchange rate, and significant at-risk expenditure incurred in developing projects from greenfield sites through planning.

Whilst REG welcomes proposals for an overlap period between mid-2014, when the new FiT scheme first becomes available, and the end of the RO in March 2017, there is a significant risk of a “cliff-edge” point in 2015 where the CfD will not yet be proven but it will be too late to choose between the mechanisms in time for the 2017 switchover. We would therefore like see the RO retained for an indefinite period until the new CfD scheme has demonstrated that it can act as a suitable replacement.

THE NEED FOR GREATER CERTAINTY

Alongside this, REG remains concerned about how EMR will work in practice and at the lack of information about CfDs just a few years before the scheme is due to come online. The EMR White Paper contained little information about classification, timescales, counterparties for the scheme, and how it is to be rolled out, and the Bill fails to provide much further clarification on these issues. This is particularly important given that investors often look over a 15–20 year time period when assessing potential returns in the medium term, and, as the appetite for utility equity is limited at present, this uncertainty means projects beyond 2017 are currently unattractive prospects compared to other sectors.

Of particular importance is how tariff levels will be set and allocated. While the Bill notes that National Grid Electricity Transmission Plc will allocate CfDs in line with agreed objectives, it also states that competitive price setting for CfDs could be adopted in the longer term once “market conditions allow”. This lack of clarity...
around whether and when competitive price setting will be used contributes to the already uncertain investment climate. It also appears that during the transitional period to 2017, there will effectively be competition for CfDs given the proposal for limiting the number of CfDs issued under the cost controls outlined in the Bill. This would place independent developers at a significant disadvantage compared with vertically integrated utilities, not least of all because the gateway criteria for awarding a CfD would be more difficult to achieve for independent developers relying on bankable power purchase agreements (PPAs) and bank finance. As outlined in our original response to the EMR consultation, an auction or tender process to set tariff levels would act as a huge barrier to investment, increasing price volatility. REG would like to see tariffs set independently on a long term basis with absolute certainty that if a project is ready to build, it will be eligible for the CfD (in the same way as the RO today). We understand that DECC intends to consult on the underpinning data for the first set of CfD strike prices for renewables as part of a draft delivery plan towards the end of 2013 and will not announce prices until late 2013. We would urge the department to undertake this consultation process as a matter of urgency to provide sufficient notice of prices to those considering longer term investments. For this reason, we do however support the proposal in the draft legislation to grandfather the support offered through CfDs.

We would also like to see more clarification about potential variations in CfD prices, particularly for those technologies dependent on power generation that is inherently variable such as onshore and offshore wind, and to obtain a greater understanding of how any agreed variations will be able to demonstrate that they are providing value for money, as proposed in the draft legislation. The draft Bill also notes that in exceptional cases the Secretary of State will allocate CfDs to individual projects where the generic terms are not suited and will have to be individually negotiated, raising further questions about the legality of such measures and furthermore about the process for the allocation of tariff levels and whether they will help create a level playing field for different technologies.

As mentioned earlier, the CfD proposals are also unappealing due to the short 15 year rate of return, compared to the 20–25 years offered in other countries, and we would like to see this rate extended to align the level of incentive with the needs of the long-term owners of these assets. Longer term tariffs would permit lower cost of capital investment in projects, due to the added certainty this would bring, thus allowing projects to be owned and operated by investors at the lowest cost to consumers. For example, in Canada, tariffs for onshore wind are awarded for periods of 25 years, which allows public and private sector pension funds to play a major role in funding these projects. Finally, CfDs should allow generators to take the upside when power prices are high (as is currently the case in the Netherlands) and the FiT should be paid on output, rather than availability.

**Route to Market**

There is considerable uncertainty in the UK electricity market today regarding future imbalance costs paid by participants in the balancing and settlement regime, operated by Elexon. This “cash-out risk”, which results in individual penalties on individual suppliers for failing to balance generation with supply, has resulted in a reluctance by the big six vertically integrated UK utilities to offer long-term PPAs to independent power projects. This situation is likely to get worse over the next decade as the amount of variable generation on the system increase, thus increasing the likely costs of balancing the system for individual suppliers. In the past 12 months, one PPA provider has signed over 70% of all renewable energy PPAs in the UK, with only 2–3 other players still responding to PPA tenders. This compares to a buoyant market in 2006–2010 when as many as 10 possible PPA providers would bid for projects.

The lack of a functioning PPA market has led to a rapid decline in the terms of PPAs being offered, with greater discounts applied and more risk transferred to the developer. Some 10–15% of the benefits (power, ROCs, LECs, embedded benefits) payable to renewable energy projects is retained by the PPA provider and not passed on to the generator. In other markets, such as the Nordpool, this discount is only 2–3%. This means that a significant element of the cost of the RO is unnecessarily paid out to suppliers due to a lack of competitive pressure.

Current uncertainty over EMR and the explicit exclusion of a “wind balancing market” to mutualise the imbalance costs of wind power across all suppliers in proportion to their customer base, has made the financing of independent wind projects extremely challenging. This is unlikely to be addressed unless Government can provide a clear signal to suppliers that EMR will be designed to address the causes of these issues.

Finally, it is currently proposed that under the CfD, there would be no need for a contract counterparty. REG is of the view that a PPA will always be required, particularly for bank financing, and that a CfD written in statute rather than in contract with a defined party, would be legally unenforceable, thus making the project impossible to finance.

**Conclusion**

Ongoing policy uncertainty around plans to replace the RO with CfD FiTs is undermining investor confidence in the renewable energy sector and preventing wind power projects from getting off the ground. For the
Government to achieve the ambition set out in the EMR White Paper to enable large-scale investment in low-carbon generation capacity, more needs to be done to provide a stable policy and regulatory environment for the renewables industry.

A key goal of the draft legislation should be to usher in a period of stability. The sector has already seen considerable upheavals in the regulatory environment over the past few years, and it is disappointing that the industry has again been thrown into confusion just as the RO was beginning to realise its potential. For this reason, we very much believe that the RO should be maintained concurrently with the EMR until CfDs have had a chance to become established as the main investment return for renewable energy projects.

We also believe that DECC urgently needs to consult with the industry on the setting of CfD strike prices and provide clarification on how tariffs will be allocated in the longer term in order to ensure wind power remains an attractive option to investors. Given the long time frames involved in wind farm development, the Government also needs to introduce measures to support longer term investments through the CfDs to ensure wind power can continue to contribute towards the decarbonisation of the electricity market and create the green jobs necessary for the growth of the low carbon economy.

About REG Windpower Ltd

REG Windpower is a subsidiary of the £50m AIM-listed renewable energy company Renewable Energy Generation. The company has around 25 staff based in Bath and Truro and has more than doubled in size over the past two years. The REG team now contains the necessary expertise to develop, build and operate our growing portfolio of sites, which includes 51.5MW of operational capacity, with approximately 900MW in development.

Through its experience in developing, financing, building and operating wind farms over the past seven years, it has established an in depth knowledge of the true cost of onshore wind across the full project lifecycle, including decommissioning. Our wind farms generate clean, safe, renewable electricity which is used to supply nearby towns and villages through the local distribution network. We use a rigorous site selection process is designed to create the right scheme in the right location—generating much-needed renewable electricity while respecting the local environment that hosts our projects. We are committed to public consultation and always aim to meet local residents to seek their feedback before we submit our proposals.

May 2012

Written evidence submitted by the TUC Clean Coal Task Group

Coal, CCS Investment and the Energy Bill

The Government’s electricity market reforms provide a unique opportunity to link energy and industry policy and signal a commitment to growth through green investment. Electricity market reforms have to deliver secure, low carbon power for the long term at the least cost. To reach our climate change targets, £110 billion of new investment is needed by 2020, double the rate of the past decade, and further £16 billion a year through to 2030.

Establishing a sustainable, long term investment pathway for carbon capture and storage for fossil fuels, both coal and gas, is vital to achieve our CO₂ emissions targets.

Setting an Emissions Reduction Target for the Energy Bill

Provisional data indicates that although power sector emissions fell by 6.6% in 2011 to 146 MtCO₂, power sector emissions still account for just under a third of total UK greenhouse gas emissions (GHGs).

The Committee on Climate Change (CCC) CCC has presented “an illustrative least-cost investment path for the power sector over the next two decades, suggesting that the aim under new electricity market arrangements should be to reduce average emissions intensity to around 50 gCO₂/kWh by 2030.” According to CCC, the carbon-intensity of electricity supplied in 2010 was 496 g/kWh. The 2030 target implies a 90% reduction in carbon intensity from electricity supply—essentially a challenge facing the fossil fuel sector.

The Government should explicitly set 50 gCO₂/kWh by 2030 as an objective of its Energy Bill.

Coal, the “Forgotten Fuel”

In 2011 coal generation supplied 30% of the UK’s electricity and in peak times during last winter this level rose to well over 50%. Coal is a vital component of the UK energy mix with the UK mining industry directly providing just over 6,000 jobs and supporting a similar number in coal power stations combined with the rail and transport infrastructure.

In recent months we have seen generators switching between fuels within their portfolio to keep generation costs down. Coal prices are typically lower than gas prices. This has resulted in fuel switching from gas to coal and the UK consumer has benefitted as a result.

The UK has plentiful coal reserves currently estimated to be at least 3.1 billion tonnes which is enough for around 60 years at current production levels. This is far more than our gas reserves which are 13 years maximum at current production levels.

Coal it appears has become the forgotten fuel. The UK has policies to develop renewables, nuclear and now gas generation but nothing to ensure that the UK’s coal reserves are exploited to the benefit of the nation. The Government’s gas strategy should be expanded to a fossil fuel strategy to include a clear role for coal. This document should include the role for coal in the transition to a low carbon economy as well as the UK’s medium to long term CCS ambitions.

Key points in the Energy Bill

**Contracts for Differences (CFDs)**

CFDs are long-term contracts which provide revenue certainty to investors in low-carbon generation such as renewables, nuclear and CCS-equipped plant.

— The CFD length should be commensurate with the nature of the investment and ideally on an equal basis for all technologies. To offer CCS only a 10 year period whilst proposing at least 15 years for renewables and nuclear will increase the costs of capital and make CCS a less attractive proposition. This 10 year period is also incompatible with the 30+ years of grandfathering under the Emission Performance Standards that gas will enjoy.

— The counterparty has to have sold investment grade status in order to gain confidence with investors.

— The Government needs to make clear how much support they are willing to offer to each technology so investors can make appropriate plans.

**Emissions Performance Standards (EPS)**

The EPS is a regulatory measure which provides a back-stop to limit emissions from unabated power stations.

— The EPS level of 450g/kWh will promote unabated gas at the expense of investment in CCS.

— The decision to allow the EPS standard to be grandfathered out to 2045 will make the UK’s interim carbon targets in 2025 and 2030 very difficult to meet.

**Capacity Payments**

Capacity agreements are payments for reliable capacity to be available when needed, helping to ensure security of supply.

— Vital to ensure fossil fuel generation is available to cover for intermittent renewable and inflexible nuclear power generation.

— Capacity payments must be available to existing coal plant. This will enable them to play their part in a managed transition to a low carbon economy.

— System must not be over complicated to understand and simple to operate.

**Carbon Price Floor (CPF)**

The CPF is a tax to underpin the carbon price in the Emissions Trading Scheme.

The TUC is concerned about the impact of the CPF because:

— There is no transparency beyond two years, because the Chancellor has announced that he will only confirm the carbon tax for a maximum of two years ahead.

— It introduces a disincentive to invest in existing coal stations to meet European emission directives requiring generators to meet tougher environmental standards.

1. Meeting Carbon Budgets—3rd Progress Report to Parliament, Committee on Climate Change, June 2011, p 89.
2. Parliamentary answer, Charles Hendry, July 2011, Hansard, column 992W.
3. DECC Oil & Gas website, production and reserves data.

*June 2012*

Some of the suggestions made in this submission were first included in separate reports to Friends of the Earth, Transform UK and the REA (see 3. below) and reflect widespread consultation with a number of industry players, banks and investors; they have been updated for developments since the original reports, and remain the views of the author. In part they have been occasioned by early oral testimonies in which the attractions of more straight forward feed in tariff and substantial savings that would be occasioned for the taxpayer/consumer whilst providing better incentives to industry and investors have not fully featured (see 2.1 and 2.2 below).

1. SUMMARY

— The introduction of fixed feed in tariffs for renewables to replace the RO is to be welcomed.

— However, the introduction of the contract for difference mechanism and the lack of certainty as to how it is to work greatly undermines the benefits that a feed in tariff normally provides in broadening the investment market and also reducing the cost of capital by reducing risk.

— Unless greater clarity is provided quickly then it is quite likely that investment in the UK will be below levels that would occur with a more straight forward feed in tariff and costs for the taxpayer consumer will be higher. Certainty and simplicity must be a priority.

— More straight forward feed in tariffs would provide certainty simplicity and much better value for money for the taxpayer consumer—with electricity thereby purchased auctioned to the wholesale markets by Ofgem or other body thereby facilitating competition in the supplier Market.

— Steps also need to be taken to facilitate direct purchases of renewable energy from generators, thereby increasing direct investment by high energy users in off site projects and allowing collective purchasers to gain economies of scale.

— If the cfd approach is to be followed small and medium sized players must be protected from the value leakage that could result from the complexity of the scheme otherwise they may simply choose not to engage—leaving a gulf between projects supported by the small scale feed in tariff and rhi and the large-scale feed in tariff. So much so that an increase in the banding for the small scale fit may be necessary for medium-scale community projects for example.

2. DETAIL OF SUBMISSION

2.1 It is concerning that the EMR consultation in rejecting a straight forward feed in tariff, modelled such a tariff in the case of onshore wind at a flat 90 euros whereas in Germany feed in tariffs drop considerably towards the wholesale electricity price after five years. As a consequence of this approach the savings to the taxpayer consumer from a fixed feed in tariff approach (without cfd) were greatly underestimated. Such savings could be between 10 and 20% of the costs shown in the EMR consultation model if a two tier system similar to that in Germany were followed.

2.2 It is unfortunate that the EMR consultation chose to model the fixed feed in tariff in the way that it did as discussion has since polarised on the cfd or premium tariff models (as evidenced in some of the submissions to the committee): it is suggested that more appropriate modelling of the fixed feed in tariff on a two tier basis would have allowed it properly remain under consideration: and would have allowed less complex legislation to have providing forward providing very substantial savings to taxpayers and consumers whilst providing greater investment certainty.

2.3 It is suggested that a more straight forward feed in tariff should even now be considered with a purchasing body auctioning electricity to provide the required interface with the wholesale markets—thereby dealing with the concern about interface with the wholesale markets mentioned in the EMR.

2.4 This would also allow greater access to electricity for small suppliers dealing with one of the other concerns of Ofgem that there is insufficient Market access for new entrants to the supply Market. The NFPA already successfully auctions electricity as does SSE.

2.5 In Germany the feed in tariff has been successfully supplemented by a market alternative which provides direct exposure to wholesale markets, whilst providing compensation for developers taking this risk. This system has been widely adopted and has attracted new players from the capital markets who are typically taking the Market risk on the part of developers for 50% of the compensation fee.

2.6 Given the reduced number of utilities willing to finance nuclear power there is less of a need for a contract for difference mechanism which was primarily designed to advantage that industry: and which itself would benefit from a different mechanism given recent developments.

2.7 Feed in tariffs could instead be awarded for nuclear by way of straightforward capacity auctions whereas other technologies eg renewables would at present operate on Government set tariffs until the Market is ready for auctions (circa 2020 for more mature technologies). At present negotiations in relation to the nuclear CFD are happening behind closed doors and do not appear to being subject to the same degree of public consultation that has happened in relation to the appropriate levels of support under the RO for individual renewable technologies. The current approach risks successful legal challenge under state aid rules.
2.8 To further reduce uncertainty current RO contracts could be simply converted to a new fixed tariff by taking average receipts for the three years prior to the 2017 conversion date.

2.9 On this basis industry would have a unified feed in tariff structure (small and large) rather than two greatly different feed in tariff structures and a run off RO portfolio of uncertain cost in the circumstance of rising energy prices. A cap should be considered on future RO exposure to ensure that a distorted Market does not occur in the circumstance of very high wholesale electricity prices.

2.10 It is not too late to modify the energy bill to go to a simpler and cheaper structure.

2.11 If the contract for difference is to remain then steps should be taken to ensure that developers of small projects SME's an community projects have proper access to markets at low cost: the danger is that the value leakage that occurs under the RO system would be repeated.

2.12 Legislators also need to understand that the complexity of the CFD mechanism make it very likely that unforeseen anomalies and distortions arise which will require further modifications to the system. It was this type of difficulty that blighted the early years of the RO and which continues to dog that mechanism. It is suggested that industry investors, taxpayers and consumers would prefer a simple mechanism that does what it says on the tin: not a mechanism that is so complex it can only be operated by informed insiders.

2.13 One further significant matter: the Energy bill contains insufficient measures to stimulate the direct purchase of renewable energy from producers. At present regulations make this difficult to achieve without complex and costly contractual structures which only a few utilities currently provide and do not extensively promote.

2.14 Regulations should be amended to compel suppliers provide offers for transmission and balancing only to allow high energy users and other collective purchasers to contract direct with generators for renewable electricity, allowing new investment to flow into the sector and accelerating the decarbonisation of those industries. The establishment of mechanisms to support remote net metering markets would greatly facilitate the transition towards an unsupported renewables Market post 2020 or 2025 as would the regular auctioning of renewable capacity by Ofgem or other body referred to above.

3. ABOUT THE AUTHOR

3.1 The author founded and led Ernst and Young’s renewable energy practice for a number of years. He has authored a number of reports on energy policy and testified before the US Senate on renewable energy support mechanisms. He has over 20 years experience of financing renewable projects for a number of technologies under a number of jurisdictions.

3.2 Since founding Climatechangematters limited on his retirement from Ernst and Young in March 2009 to express an independent view on policy matters and to mentor businesses engaged in the Green economy, he has authored a number of reports for NGO’s including “Renewables fit for 2050” “High energy users and renewables “and “the Big society and renewables” copies of which may be downloaded from http://renewablematters.biz/

June 2012

Written evidence submitted by the Wood Panel Industries Federation

EXECUTIVE SUMMARY

— The Wood Panel Industries Federation represents all UK manufacturers of wood based panels. The sector provides significant employment opportunities and has an annual turnover of £650 million.

— The wood panel industry is concerned by current renewables policies, notably the Renewables Obligation (RO) which is subsidising energy companies to purchase wood to burn as biomass.

— These subsidies have led to a distortion of the wood market which is negatively impacting on the wood panel industry’s ability to operate competitively. The industry is therefore at serious risk of displacement.

— The industry is concerned that the Draft Energy Bill will not work to rectify the damage caused by the RO.

— Detail on the Draft Energy Bill and the position it will take on biomass is needed urgently. Reassurance must be provided to the wood panel industry that there will be sufficient feedstocks available to them to encourage expansion and further investment in the UK.

— The industry urges the Committee and the UK Government to ensure that all interests are taken into account when working on this legislation and that it is not only investment in the energy sector that is considered.

1. The Wood Panel Industries Federation (WPIF) represents all UK manufacturers of wood based panels. There are seven manufacturing sites across the UK. The sector has an annual turnover of over £650 million
and directly employs 2,400 people. Taking account of related businesses upstream and downstream, there are 8,700 FTE jobs, the majority of which are in rural areas, dependent upon the wood panel industry.

2. Due to its reliance on UK-sourced wood the industry has become increasingly concerned by the cumulative impact of the Renewables Obligation (RO) and is concerned that the Energy Bill will implement mechanisms which continue this. Energy companies are currently being subsidised under the RO to purchase wood to burn as biomass. The WPIF is very concerned about the impact this is having on the wood market and the industry’s ability to operate competitively. In the past five years the price of standing timber has risen by 71%. The only major new entrant into the market during this time has been the energy sector taking advantage of Government subsidies. This distortion of the wood market is having a serious impact on the wood panel industry and is putting it at risk of displacement. The WPIF is not seeking protection but rather a level playing field so that the industry is able to operate competitively in the UK and continue its valuable investment and job provision.

3. In addition to difficulties caused by the distortion of the wood market, the WPIF, and other forestry and wood processing industries, are also being put at risk by the demand for domestic wood from the energy sector that has been created by the RO’s subsidy regime. DECC figures forecast that demand for biomass from energy plants will be equivalent to 80–100 million tonnes of wood by 2030. This is more than eight times the UK’s 2010 wood harvest. Although current projections anticipate importing 90% of biomass feedstock requirements, even meeting 10% of this demand domestically would consume the entire UK wood harvest. DECC believes that increased tree planting and forest management will mitigate these problems, however the Forestry Commission estimates that potential increase in production will only be two to three million green tonnes. This means that the UK wood market will be unable to meet the demands of large-scale biomass developments and existing wood users will be at risk of displacement.

4. Not only would displacement of the wood panel industry have ramifications for the UK economy and job market, it would also be detrimental to efforts to reduce carbon emissions and to meet the UK’s renewable heat targets. Processing wood locks carbon into wood products and produces only 378kg of CO₂ per tonne of wood, whereas burning wood for electricity generation produces 1,905kg of CO₂. Displacement of the wood panel industry (and its contribution to carbon sequestration) by wood fired electricity generation, would see a net increase in CO₂ emissions by six million tonnes per annum—more than 1% of the UK’s reported emissions in 2008. In addition, the wood panel industry is the UK’s largest industrial generator of renewable heat and this significant contribution to the UK’s renewable heat targets would also be lost if the industry were displaced.

5. Much of the evidence given so far during the Committee’s inquiry has focused on concerns about the complexity and the lack of clarity in the Draft Energy Bill, particularly regarding the proposed Contracts for Difference (CFDs). The energy industry and its investors have stated that the current complexity of the proposals is creating uncertainty and risk that is deterring investment in renewables. This is a crucial point, however it must also be noted that the energy sector is not the only one being deterred from investing in the UK as result of the Draft Bill and DECC’s ongoing renewables policies. The wood panel industry, along with other wood processors and forest industries, is a vital investor in the UK economy, particularly in rural areas where business and employment opportunities are often less readily available. The parent companies of the WPIF’s members are all international groups that have invested a considerable amount in the UK and may not be in a position to expand this investment if there were yet more uncertainty from the Government about biomass policy and the impact it is having on feedstock supplies.

6. The Draft Energy Bill is designed to replace the RO, however, there is no information in the proposals to outline the impact this change will have on biomass subsidies and if biomass will continue to be viewed as an important type of renewable energy. Any uncertainty can delay investment, not only from the energy sector but from the wood panel industry as well. Without the certainty that current wood market distortion and sustainability problems will be rectified the wood panel industry cannot expand or make significant investments for fear of displacement in the near future. If this uncertainty continues then the companies may look elsewhere for investment opportunities. It is important that the Committee and the Government notes that the energy sector is not the only one that the Energy Bill will have an impact on and that they work to engage with all stakeholders to ensure that the Bill supports investment from all related sectors.

June 2012

Written evidence submitted by Vestas Wind Systems

Vestas secured planning consent for a proposed offshore wind turbine manufacturing facility at Sheerness in Kent. On 22 June 2012 we announced that we would, however, not be taking forward the project. The comments provided in this evidence are in no way related to the decision regarding the Sheerness project.

SUMMARY OF COMMENTS

(a) Vestas supports the objective of the Bill but has concerns over its ability to deliver.
(b) Firm and final CFD strike prices need to be published without further delay.
(c) A development hiatus appears to be emerging as a result of the uncertainty over the reforms.
(d) The 2017 date for the closure of the Renewables Obligation must be extended.
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(e) Allocation of CFDs must not exacerbate the already emerging a development hiatus.

(f) There remain some key details still to be resolved.

(g) The interaction of the Levy Control Framework and the CFD must be clarified.

(h) Independent generators need a viable position in the market.

(i) Development plans and contract allocation must be set on capacity.

(j) The Government’s development of the reforms is not creating confidence in the market.

INTRODUCTION

1. Vestas is the world’s largest manufacturer of wind turbines. We have supplied over 50GW of wind capacity worldwide, a total of 46,000 turbines, over the last 30 years. This is almost 20% of every turbine sold across the globe. In 2011 around 60% of the onshore turbine orders announced in the UK were for Vestas machines. Vestas is a pure wind player; we manufacture wind turbines and anything else. Vestas employs around 600 people in the UK in service, R+D, sales and other functions. We have a research and development centre on the Isle of Wight at which the blades for the prototype of Vestas’ V164–7.0MW offshore dedicate turbine.

2. We would like to submit evidence to the Committee’s pre-legislative scrutiny of the Energy Bill as it will shape the future deployment of the wind sector in the UK. We have worked closely with Government and industry colleagues on the Electricity Market Reforms to date. The reforms, the proposed Contracts for Difference (CFDs) will be crucial to the future of the wind sector in the UK. This evidence will focus on the proposed CFDs as that is the part of the Bill most relevant to Vestas and the wind sector.

OBJECTIVE OF THE BILL

3. We welcome the objective of the Bill. We welcome measures that make the UK a more attractive place for people to invest in wind and believe that the Bill attempts to do this. We have, however, serious concerns over whether the measures to be introduced by the Bill will deliver a robust and workable solution in the timeframe set out.

CONTRACT STRIKE PRICES

4. The indicative timeline included in Annex B suggests the Government will publish strike prices by the end of 2013. The confirmation of contract prices is a crucial step in the introduction of the CFD; it is vital that this date does not slip. Developers currently planning projects need to be able to proceed with confidence. Without visibility of the strike prices they could expect to secure, it is difficult for them to justify continued expenditure of tens of millions of pounds on development.

5. The indicative timeline suggests auctions will be introduced only once the new capacity covered by the contract cannot be delivered in time to contribute towards the 2020 targets. The draft Bill (5.2.c), however, suggests that strike prices could be set via a combination of administered and competitively set prices. The draft Bill does not, however, clarify at what date such a hybrid approach could be taken. The point at which a hybrid approach could be taken would be the effective date of auctioning contracts. The Bill should be clarified to state that a dual approach to price setting will only be introduced once the new capacity covered by the contract could not contribute to the 2020 targets.

6. If developers are not able to guarantee they will receive the administered price, because the price has been set via a combination of administered and competitive processed, then the publication of the strike in late 2013 would not give the required confidence to investors. If prices could be set via a combination of administered and competitively set processes, the point at which developers have certainty over prices be delayed until the competitive process has concluded, presumably at the end of the first allocation round.

POTENTIAL FOR DEVELOPMENT HIATUS

7. We are already seeing a delay to the market for offshore wind in the UK, largely as a result of the uncertainty surrounding the market reforms. The point of hiatus does not occur at the point of financial close, but well ahead of that point. Developers need to be able to demonstrate financial viability throughout a project’s development, not just at the point of financial close. They therefore need visibility of the support scheme throughout a project’s development.

8. There are a number of factors which risk exacerbating the already emerging development hiatus, including:

   — Further slippage of the legislative timeline.

   — Delay to the establishment of robust solutions to the unresolved issues.

   — Increased complexity in the arrangements leading to financiers needing more time to fully understand the risks within the market.

   — The potential for strike prices to be set via a combination of administered and competitive means, delaying the date at which final strike prices will be confirmed.
9. The deployment rate of offshore wind is already required to rapidly increase in the years leading up to 2020. An investment hiatus now, caused by the uncertainty surrounding EMR could delay the ramp up in deployment. This could seriously threaten the achievement of the UK’s 2020 renewable energy targets.

10. Whilst we recognise the attempt to avoid a hiatus through the introduction of investment instruments they appear unlikely to offer considerable additional comfort. If they will not be available until the Bill is enacted, then they offer little comfort in the intervening period.

EXTEND 2017 DEADLINE TO RENEWABLES OBLIGATION

11. We consider that the 2017 deadline for entry into the Renewables Obligation must be extended. Every wind project under development must have a viable option for support. Many offshore wind projects reaching financial close around mid 2013 will not be built in time to become accredited under the Renewables Obligation. They will be too early for a CFD or an investment instrument. This support gap must be bridged. Coming at a time when the supply chain is beginning to gather momentum it is important that companies looking to make a move into the renewables sector are not put off by such an immediate and obvious difficulty.

ALLOCATION OF CONTRACTS

12. The system for allocating contracts will be vital to the successful deployment of projects. Annex B states that “the allocation is designed to give developers certainty about their ability to obtain CFDs”. It is difficult to see how the proposed allocation process gives developers certainty sufficiently far ahead of actually signing the CFD.

13. The allocation process needs to be clear about what will happen to projects that are not awarded a contract in any particular allocation round. The potential for such projects to be left in limbo, ready to be built buy without any form of support is a considerable risk.

14. There is a risk that the six monthly contract allocation process could create a stop/start deployment profile. This could create short term supply chain bottlenecks which could increase costs.

SIGNIFICANT DETAILS STILL TO BE RESOLVED

15. There are still some fundamental issues to be resolved, such as which body bears the ultimate financial liability for the scheme, the financial status of the contracts, and the legal enforceability of the contracts. Until these details are resolved it is difficult for investors to have sufficient confidence that the mechanism will work to make finance available.

16. It is important that the legislation is introduced quickly but this should not undermine the quality of the legislation. The need to get the primary legislation passed should not mean that significant details are left to be established in the secondary legislation. It is important for investors to have clear visibility of considerable detail from the primary legislation. They need such visibility ahead of when secondary legislation could be passed.

17. It remains unclear whether the CFDs will be considered financial derivatives or not. We understand there is on-going debate within Government on this issue. If contracts are financial derivatives, it could have a considerable impact on suppliers. It would also fail to address the issue of suppliers not having sufficient balance sheets to support such a significant amount of liability.

LEVY CONTROL FRAMEWORK

18. It remains unclear whether the “cost” of the CFD would be the amount paid out or the full strike price of the contract. If it is the amount paid out this makes the cost potentially very volatile if electricity prices become volatile. However, if the cost is considered to be the full strike price then this would clearly over-value the cost as not all of the strike price would be a cost to the consumer. It would also not take account of the potential for the strike price to be below the wholesale power price.

19. The separate spending envelopes for nuclear, CCS and renewables create the risk that money that could be used to finance renewables projects is tied up in the nuclear and CCS envelopes on projects that might not ever be delivered.

20. Vestas considers that the spending envelopes should be based on a capacity basis rather than a production of percentage of demand basis. A capacity basis, assuming reasonable capacity factors, would be transparent, reduce volume risk and would give greatest certainty to the supply chain.

INDEPENDENTS’ POSITION IN THE MARKET

21. The position of independent generators needs to be properly considered in the reforms. The market is not, at present, sufficiently liquid for independent developers to secure finance without a PPA with a utility. We welcome DECC’s intention to gather evidence.
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22. Most of the new forms of finance the Government is hoping to attract to the market by the reforms will effectively be operating as independents within the market. If independents do not have a viable position in the market new sources of financing will not be attracted into the UK.

DEVELOPMENT PLANS

23. The Government has not decided whether to base development plans on capacity, percentage of demand or TWh. We firmly believe that development plans should be based on capacity. This removes unnecessary risk over the outturn electricity demand and load factor of the UK’s generating portfolio. A MW basis is simple and transparent and would give greater certainty to the supply chain.

DEVELOPMENT OF THE REFORMS

24. Vestas has serious concerns over the Government’s handling of the introduction of the reforms. It appears that the complexity of the reforms was not fully appreciated when initially proposed. The subsequent difficulties experienced in establishing the details of the scheme and the interactions with other Government departmental requirements undermined the industry’s confidence in the Government’s ability to achieve its objective.

25. There appears to be a lack of oversight of the EMR process within DECC. The lack of an objective, strategic and joined up approach risks undermining industry’s confidence in the ability of the Government to deliver the reforms.

June 2012

Written evidence submitted by Prospect

INTRODUCTION

1. Prospect is a trade union representing 120,000 scientific, technical, and managerial and specialist staff in the Civil Service and related bodies and major companies. In the energy sector, we represent scientists, engineers and other professional specialist staff in the nuclear and radioactive waste management industries, the wider electricity supply industry and, increasingly, also in the gas industry. Our members include experts developing carbon capture and storage technologies and those with regional responsibility for promoting sustainable energy systems. They are engaged in operational and technical management, research and development and the establishment and monitoring of safety standards, environmentally and in the workplace. We are fortunate in being able to draw on this broad range of knowledge and expertise to inform our views.

2. Prospect’s response to the Government’s consultation on Electricity Market Reform called for bold action to accelerate the development of low carbon energy. We believe that the draft Energy Bill largely meets this requirement. In particular, we agree that investors need to be given the strongest possible signals now and that current market arrangements will not deliver the scale of long-term investment needed. However whilst we generally welcome the Government’s approach, we have some comments on the proposals, as outlined both in the draft Bill and in Annex B—the draft operational framework for feed-in tariffs (FiT) with contracts for difference (CfD).

CONTRACTS FOR DIFFERENCE

3. The CfD model should, in our view, provide security for the development of novel technologies and, through long-term contracts, provide a secure base for the development of UK fuel sources. However, Prospect is not convinced that this should be based on rewarding operators for plant availability rather than actual output, since some other form of capacity payment would be more appropriate for encouraging load-following plant. It is also important that the process is transparent and does not favour vertically-integrated companies whose decisions mirror other large rivals rather than favouring diversity of supply.

4. We note that no strike prices have yet been set for CfDs and that none will be before next year. This is clearly a major gap in the information required for decision-making, which the Final investment Decision (FID) arrangements are designed to address. That said, we welcome the Government’s recognition that competitive price fixing may be difficult for new nuclear build and that the agreed CCS process already includes a competitive element. Therefore the process for setting strike prices in the period to 2017, essentially based on negotiation, is a pragmatic way forward and in our view preferable to an inflexible or formulaic approach. The fact that strike prices for renewables are likely to vary by technology in order to reflect different stages of market development is similarly sensible, though undoubtedly there will be difficult decisions to be made about prioritisation.

5. There are clearly trade-offs between the benefits of long-term price security and having sufficient flexibility to cope with rising costs. The Government is minded to link a proportion, though not all, of the strike price to a general inflation index rather than a more specialised index for each project. This is justified on the basis of reducing the administrative burden, and there is merit in this argument. However, in our view it would be helpful to model the financial impacts of various approaches before taking a final decision. The choice of CPI rather than RPI would not necessarily be our preferred basis for uprating, and we think that this needs to be
reconsidered in the light of current discussions around changing the composition of the CPI and to achieve consistency with regulatory price control reviews.

6. The draft operational framework sets out three price setting options to manage financial exposure. Prospect’s preference would be for technology-specific targets as this is the most straight-forward approach that also ensures a balance of investment. However, the suggestion that the Government may not issue a CfD for flexible plant during this decade may be controversial as it would particularly impact on development of renewables.

7. We agree with the suggestion in the draft operational framework that CfD length should be 15 years for renewable technologies and no less than 15 years for nuclear. However, to offer CCS only a 10 year period will increase the costs of capital and make CCS a less attractive proposition. This 10 year period also sits uncomfortably with the grandfathering period provided for gas under the Emission Performance Standards proposals.

CAPACITY MARKET

8. Capacity payments should incentivise real availability so should be linked to the volume of generation available and to other services to maintain grid stability such as reactive voltage, location, speed of response to an unexpected rise in demand, and reliability. This requires establishing the factors that determine the value of spare capacity and rewarding the plant that meets those requirements. It is also very important that the shape of capacity payments is consistent with other incentives. Currently the market for responding to unexpected peaks in demand is highly inefficient as there is no predictable reward for constructing and operating fossil-fuel plant with low level and unpredictable patterns of operation. At present capacity is only rewarded when plant runs. Prospect’s view is that the economic dispatch model is the most efficient way of providing a long-term reward to generators who provide reserve capacity to cover intermittency. Rewarding generators for retaining capacity that can respond quickly to fluctuations in renewable power sources, such as gas, will be of increased importance as the proportion of power from renewable sources increases.

EMISSIONS PERFORMANCE STANDARDS

9. Prospect broadly supports the introduction of emissions performance standards (EPS), not least because this acknowledges the continuing role of coal-fired power stations whilst incentivising emissions reduction. However, we are not convinced that the 450g/kWh is the appropriate immediate level to encourage investment in CCS. Given the advantages of CCS, we would wish to see consideration given to a higher target (perhaps in the order of 600g CO$_2$/KWh) as a transitional measure to encourage investment in what remains a commercially unproven technology. This should be reduced once new nuclear and renewables capacity is operational. We also think it important that the EPS regime does not create a perverse incentive not to invest in major efficiency measures such as efficient turbines or supercritical operation both of which reduce carbon emissions by 10%.

FINAL INVESTMENT DECISIONS

10. Prospect fully supports the intention to support early development proposals through a FID framework on a case-by-case basis to ensure that investment can get underway. However, it will be important to guard against opacity in this process.

ONR

11. We support the proposals for a single nuclear regulator with wider powers than those currently held through the HSE and for the objectives of that regulator to be focussed on the challenges posed by new build and decommissioning of redundant nuclear plant. Integrating the regulation of security, safeguards and transport with health and safety offers efficiency gains and clarity of focus.

12. We welcome the recognition that ONR must recruit and retain specialist staff. It is important that ONR is given the operational freedom to determine its own employment policies and package for all ONR staff. Staff in specialist support roles often require complex and rare skills and make a contribution to the performance of ONR that is just as important as that provided by inspectors. Clarity over the treatment of pensions for all ONR staff, including allowing those recruited after vesting date to join the Principal Civil Service Pension Scheme (PCSPS) would also assist this process during the evolution of ONR as a statutory corporation.

13. Prospect believes that the ONR board non-executive members should all have knowledge and experience of the nuclear sector and, since the commitment of all stakeholders is necessary, that it would be appropriate to include trade union representation on the board of the ONR. We support the option of including an HSE representative and we believe that close links with the HSE should be retained to enable consistent regulation of non-nuclear safety issues by ONR.
Devolution

14. Prospect recognises that the draft Energy Bill raises a complex interaction of reserved and devolved powers. We understand that the Scottish Government will be consulting with industry and other stakeholders over the summer, and we would expect the STUC and affiliated unions to be involved in this process.

Investment in Staff and Skills

15. Prospect criticised the Electricity Market Reform consultation paper for its failure to consider investment in staff and skills, both of which will be crucial to the delivery of EMR and to sustaining progress. This remains a key concern, particularly in the context of tight labour markets for engineering and specialist concerns. We are pleased to note therefore that a group of Sector Skills Councils has worked together to make an assessment of existing training provision and what more needs to be done. We are also pleased that the Green Economy Council has agreed in principle to convene a skills sub group to take this work forward. As previously indicated, a workforce strategy for new energy infrastructure will need to be located within the much wider infrastructure challenge that the UK faces over the next decade.

Role of Gas

16. It is clear that Government sees gas as the fall back option in the event of insufficient timely progress to develop new nuclear and/or renewables. Given the potential significant increases in gas prices over the remainder of the decade and the existence of efficient coal-fired plant that can be converted to biomass or can co-fire biomass, then there is a transitional role for coal even at costs of higher short-term carbon emission. We do have concerns that new gas build would create financial pressure to maintain higher carbon emissions in the medium–term as well as higher electricity prices compared to short-term bridging of the capacity gap by existing coal stations. The obvious danger is that once gas fills the gap, any impetus for other investment will be lost, potentially resulting in a new dash for gas. In the 1980s resulted in failure to create the correct incentives for investment in the UK and led to the development of technology overseas and the loss of high-skilled, high technology, high quality jobs.

Governance

17. Prospect’s preference continues to be for an agency that would take decisions out of the political cycle. We are conscious that five years is not a long timescale for purposes of investment in energy infrastructure, and this remains a cause for concern. Stability is essential to ensure investment.

18. In the absence of such an agency, we think that there is a need for absolute clarity about the role of the proposed group of technical experts to scrutinise the System Operator’s analysis, including in relation to the role played by Ofgem and the Committee on Climate Change. As the draft Bill notes, Ofgem will not hold the levers for delivering all outcomes. But we are also aware that the electricity distribution review for the period from 2015 (ED1) has commenced, with a strategy consultation paper expected in September. This clearly needs to progress in a synchronised way with the draft Bill.

19. The draft operational framework additionally proposes the introduction of an “independent expert” role in addition to the proposed panel of technical experts. It states that there are precedents for this in other European countries, and this is helpful. However, we do seem to be at risk of inventing an over-populated set of monitoring institutions and roles rather than accepting and addressing market failure in a more straightforward manner. The role and mandate of such an independent expert will need to be carefully considered in relation to the other proposed bodies.

20. The new Energy Strategy and Policy Statement should also help in this regard but the Statement will only reflect existing policy, with a different process envisaged for filling “policy gaps”. It is important that this twin track approach does not lead to confusion or lack of confidence in the stability of the Government’s

position. The fact that there will also be short “policy outcomes” resulting from “high level strategic trade-offs” with greater legal force than other sections of the statement could be helpful, though it is not entirely clear what this statement means.

June 2012

**Written evidence submitted by the British Ceramic Confederation**

**Executive Summary**

— The ceramic manufacturing industry needs secure and internationally competitively priced electricity. The objective of moving to low carbon power generating technologies has to be achieved in a cost-effective manner. All options under EMR will increase electricity wholesale costs markedly. According to DECC figures, by 2020 EMR alone will add £10/MWh (in 2010 prices) to the retail electricity prices paid by intensive users. This additional cost further reduces the competitiveness of UK energy-intensive companies.

— A number of electro-intensive ceramic factories have already relocated from the UK into mainland Europe because of lower electricity bills in those countries. Unless mitigated, the proposals in the draft bill will accelerate this exodus.

— We welcome the principles in last year’s Autumn Statement to help mitigate costs for energy intensive industries. However, even highly electro-intensive ceramics companies will not benefit from compensation for the indirect costs of EU Emissions Trading Scheme (EU ETS). Therefore for the remaining indirect costs aspects of EMR (contracts for difference and capacity market) all energy-intensive industries should ideally be fully compensated. The method used to allocate the funds must be fair and not favour/disadvantage any sector ie by excluding it.

— We welcome Energy Minister Greg Barker’s proposal that there should be a comprehensive “Phase Two” energy intensive industry support strategy in the next spending review period. As part of this, we would like to see an increase both in size and scope of the package so a wider range of at-risk activities can be more-comprehensively covered.

— Under all credible scenarios, peak demand for gas power generation is likely to continue increasing for at least a decade. Coupled with an increased reliance on imported gas, this is likely to lead to increased gas price volatility and reduced gas security of supply. Therefore the Energy Bill must be widened to embrace gas security of supply in addition to power security of supply.

— We would welcome all measures that increase gas (and hence power) security of supply, namely: (i) increased GB gas storage coupled with a Public Service Obligation framework to apply to all gas suppliers and shippers, (ii) development of UK unconventional gas reserves (principally shale gas and coalbed methane), (iii) increased LNG capacity and (iv) increased pipeline import capacity.

**Brief Introduction to the British Ceramic Confederation**

1. The British Ceramic Confederation (BCC) is the trade association for the UK Ceramic Manufacturing Industry, representing the common and collective interests of all sectors of the Industry. Its 100 member companies cover the entire spectrum of products and materials in the supply chain and comprise over 90% of the Industry’s manufacturing capacity.

2. Membership of the Confederation includes manufacturers from the following industry sectors:

   — Bricks
   — Gift and Tableware
   — Refractories
   — Abrasives
   — Clay Roof Tiles
   — Floor and Wall Tiles
   — Industrial Ceramics
   — Sanitaryware
   — Clay Drainage Pipes
   — Material Suppliers

3. The sector (including its suppliers) employs approximately 20,000 people and generates £2 billion sales. The sector is an active exporter, particularly for industrial ceramics, refractories, clay drainage pipes, tableware and giftware.

4. The industry is energy-intensive (but not energy inefficient). Energy bills/taxes can be up to 30–35% of total production costs. 85% of the energy used is natural gas.

5. We support cost-effective action to secure electricity supply and to move to lower carbon electricity production. We support, in principle, a balanced generation mix of nuclear (including new build), renewables, unabated gas and coal with carbon capture and storage.

**Ceramics in Power Generation and Distribution**

6. The ceramics sector is a solution provider for the low carbon energy generation and electricity distribution. In the recent European Commission report “Materials Roadmap Enabling Low Carbon Energy Technologies”,
certain components were acknowledged to be critical in most technology options, with applications including wear resistant components for heat pumps/wind turbine bearings and heat resistant components used in the fabrication of solar photovoltaic panels.

**Power Price Impacts and Mitigation**

7. The ceramic manufacturing industry needs secure and internationally competitively priced electricity. The objective of moving to low carbon power generating technologies has to be achieved in a cost-effective manner. All options under EMR will increase electricity wholesale costs markedly. According to DECC figures, by 2020 EMR alone will add £10/MWh (in 2010 prices) to the retail electricity prices paid by intensive users. This additional cost further reduces the competitiveness of UK energy-intensive companies.

8. Rather than acting as a spur, the rising cumulative cost of UK energy taxes acts now, our members tell us, as a barrier to investment, hampers international competitiveness and increases the likelihood of carbon leakage. Most ceramic manufacturing companies operate in highly competitive international markets, meaning there are limits on how much of the cost of moving to low carbon can be passed through to customers. There is no doubt that the cumulative effect of environmental cost and tax burdens on this scale has the potential to destroy UK ceramic manufacturing businesses.

9. A number of ceramic factories have already relocated from the UK into mainland Europe and USA because of lower electricity bills in those countries. Unless mitigated, the proposals in the draft bill will accelerate this exodus.

10. All energy-intensive industries should be fully mitigated from the costs associated with all four pillars of EMR: (i) contracts for difference (FIT CID), (ii) capacity market (CM), (iii) carbon price floor (CPF) and (iv) emissions performance standard (EPS). We welcome the decisions taken in the 2011 Autumn Statement to help mitigate indirect cost impacts arising from the CPF and have actively participated in the recent DECC/ BIS Call for Evidence. The £100 million compensation is a welcome first step, however, only a handful of ceramic sites may benefit from CPF mitigation if state aid is granted. The package of measures also included compensation for the indirect costs of EU Emissions Trading Scheme (EU ETS). However many sectors (including ceramics) have been excluded from this element as their European sector as a whole does not qualify. Consequently, even the most electro-intensive ceramic manufacturing processes (which are amongst the most electro-intensive manufacturing processes performed in the UK) will not derive any benefit from indirect EU ETS pass through compensation. Therefore for the remaining indirect cost aspects of EMR (FIT CID and CM) all energy-intensive industries should ideally be fully compensated. However, since the size of any compensation fund is likely to be limited, compensation should be targeted to ensure the most electro-intensive processes are fully compensated. The method used to allocate the funds must be fair and not favour/disadvantage any sector ie by excluding it.

11. Compensation for the existing Renewables Obligation should also be addressed.

12. We welcome Energy Minister Greg Barker’s proposal that there should be a comprehensive “Phase Two” energy intensive industry support strategy in the next spending review period. As part of this, we would like to see an increase both in size and scope of the package so a wider range of at-risk activities can be more-comprehensively covered.

**Security of Gas and Power Supplies**

13. Gas will have a critical role in power generation both in the short term (to meet core demands and fill gap that will be created by the closure of oil-fired, coal-fired and nuclear plant) and the long term (balance demands associated with wind intermittency).

14. Under EMR, annual demand for gas could fall as investment in new nuclear, renewables and coal with CCS are incentivised. However new nuclear will be slow to come online and most of the renewable capacity will be wind requiring close to 100% backup from gas-fired generation, so the draft Bill will not reduce future peak demand for gas for power generation. Under all credible scenarios, peak demand for gas power generation seems likely to continue increasing for at least a decade.

15. Indigenous gas production (UK Continental Shelf) is in long term decline and therefore power generation will become increasingly dependent on largely imported gas supplies (European pipeline gas and LNG).

16. Increased peak demand for gas coupled with an increased reliance on imported gas is therefore likely to lead to increased gas price volatility and reduced gas security of supply. This has profound implications for all gas users (domestic and industrial) including our members. Therefore the Energy Bill must be widened to embrace gas security of supply in addition to power security of supply.

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**Notes:**

17. We would welcome all measures that increase gas (and hence power) security of supply, namely: (i) increased GB gas storage, (ii) development of UK unconventional gas reserves (principally shale gas and coalbed methane) (iii) increased LNG capacity and iv) increased pipeline import capacity.

18. In the medium term, we consider additional GB gas storage together with the introduction of a Public Service Obligation (PSO) framework to apply to all gas suppliers and shippers will provide the highest supply security and hence the lowest price volatility since: (i) gas is physically held where it can be called upon, (ii) holding a larger volume provides a larger contingency and (iii) storage is located within our national boundaries and so is less susceptible to external factors. Our members and Board recognise that this “insurance” will result in an increased cost for all consumers but it is likely to be better than other alternatives.

19. The draft energy bill needs to incorporate incentives to attract the necessary new investment in GB gas storage at an affordable cost for industrial consumers.

20. Longer term, we would strongly welcome the development of UK unconventional gas reserves (shale gas and coalbed methane).

FEED IN TARIFF CONTRACTS FOR DIFFERENCE

21. BCC provided qualified support for the initial proposal of a FiT with CfD as an appropriate mechanism to incentivise the necessary market investment in low carbon generation (including renewables and new nuclear). However, we are concerned that their complexity may render them difficult to work in practice, may distort the market unfairly and may result in higher bills.

22. With regard to FiT with CfD, there remains a significant lack of detail regarding tariff design, the reference price against which payments will be made for the different forms of generation, counterparty risks and differences between intermittent and baseload generation. We would welcome the opportunity to be involved in further developing the proposal for FIT CfD.

23. As part of the further developing its FIT CfD proposals, the Government should publish a full impact assessment on the competitiveness of energy intensive industries.

24. Revenue streams associated with future tariffs must be predictable in order to give investors confidence in the market place.

25. We are concerned that FIT CfDs may have a significant impact on the wholesale cost of electricity.

26. FIT CfD should have positive implications for the availability of secure long-term industrial supply contracts. For example, there are opportunities for electricity suppliers to return the support of Government and industrial consumers in a similar way to the French Exeltium long-term contract option (at approximately €40/MWh).

CAPACITY MARKET

27. The goal of any capacity mechanism should be to ensure that there are sufficient physical assets to provide the required capacity at all times. A large proportion of generation will need to be flexible gas-fired capacity to support the planned increase in intermittent wind generation.

28. End consumers are going to pay for reserve capacity via higher bills. We ask that the market mechanism is designed to attract the necessary investment capital at an affordable cost for industrial consumers.

29. The capacity market should not reward generation that already receives support through the Renewables Obligation or proposed FIT CfDs.

30. In addition to generation technologies, providers of capacity include demand side response (DSR). Although DSR may be possible in some manufacturing sectors, we believe that only a small percentage of ceramic manufacturing companies (typically those who operate batch production processes) may be able to offer electricity DSR. Electricity is used to control all kilns, irrespective of the fuel used for firing.

Additional written evidence submitted by the Carbon Capture and Storage Association (CCSA)

INTRODUCTION

The Carbon Capture and Storage Association welcome the opportunity to provide further input to the Energy and Climate Change Committee call for evidence for pre-legislative scrutiny into the draft Energy Bill. The CCSA's provided an initial response on 6 June to the Electricity Market Reform (EMR) package contained in the draft Energy Bill. This submission contains further thoughts on the draft bill.

The CCSA brings together a wide range of specialist companies across the spectrum of Carbon Capture & Storage (CCS) technology, as well as a variety of support services to the energy sector. The Association exists to represent the interests of its members in promoting the business of CCS and to assist policy developments
in the UK and the EU towards a long term regulatory framework for CCS, as a means of abating carbon dioxide emissions.

**SUMMARY**

— The investment signal from the EMR for CCS projects developers is currently extremely weak. The 2013 Delivery Plan should contain the Government’s CCS objectives for the UK electricity market, the price setting process for CCS CfD contracts and details on the allocation of CCS CfD contracts.

— The proposed investment instruments appear to be appropriate for early CCS project developers although there is still a concern over the likely timing of Royal Assent for the Bill.

— The legal framework underpinning CfD must be robust. There is concern that the proposed payment model is not an investable proposition. Regulatory risk must also be addressed through robust change of law provisions.

— More consideration is needed on the reference price for baseload contracts.

— The Emissions Performance Standard should be based on an annual limit and exemptions provided to CCS demonstration plants only for the purposes of assisting the early stage development of this emission reduction technology.

**Detailed Comments**

**EMR Delivery Plan**

1. The CCSA noted in its first submission (para. 2 & 4) that the investment signal from the EMR for CCS projects developers beyond the current CCS Commercialisation Programme is currently extremely weak. It is critical that this is addressed in order to send a clear signal to CCS developers, investors and the supply chain so that CCS investments can be planned in a timely manner. The key instrument to provide the signal on the Government’s CCS objectives is the 2013 Delivery Plan which will cover the delivery period 2014–18. The CCSA believes that the 2013 Delivery Plan needs to contain the following details:

   (1) The Government’s CCS objectives for the UK electricity market.
   (2) Price setting process for CCS CfD contracts.
   (3) Allocation of CCS CfD contracts for CCS.

**UK CCS objectives**

2. The 2013 Delivery Plan must provide a credible, strong and clear signal on the Government’s CCS objectives in order that CCS developers and investors are able to respond and undertake the large pre-investments necessary to develop projects for the first delivery period. The signal needs to provide a degree of confidence equivalent to that provided to other technology classes. The CCSA looks forward to working with the Government on determining what the appropriate signal should be.

3. The Government has outlined its intention to establish the CfD budget envelope as part of the levy control framework during summer 2012 and identified three proposed options for the management of the financial exposure to the CfD. Each of the options proposed would be an important constituent of the signal that is provided to the CCS industry. During the first delivery period the first option, establishing funding envelopes for each of the technology classes, would provide the maximum clarity to the CCS industry on the future prospects for the sector and should help to incentivise efficiencies and synergies amongst developers.

**Setting CfD strike price for CCS projects**

4. The CCSA believes that given the relatively early stage of CCS technology that the negotiation of CCS CfD strike prices on a project-by-project basis is appropriate. Many of the issues that warrant a bespoke negotiation process—technologies differences, location specific costs, etc—are expected to persist over the near to medium term and that the CCS strike prices for the first delivery period should still be set on the basis of negotiation.

**Allocation of CfD Contracts**

5. There is currently a reasonable degree of competition between prospective CCS project developers and, with the right EMR arrangements, this competition should be maintained and deepened in the future. This suggests that CCS CfD contract allocation rounds to allow project developers to come forward with their projects should be run on a periodic basis over each delivery period. For renewables it is proposed that the allocation rounds occur every six months. Given the inherent larger size and complexity of CCS projects then this period is too short and a longer gap is required. Phasing the allocation of CCS CfD contracts has a number of advantages to a more “lumpy” allocation of CfDs, including:

   — A more even demand on Government resources during the CfD allocation process.
   — The development of a more predictable and sustainable CCS industry and supply chain.
— Increased “learning by doing” for both Government and industry from the ability to incorporate learnings into subsequent allocation rounds.

Investment Instruments

6. The ability of CCS project developers to take a Final Investment Decision on a project requires that long-term, legally enforceable contracts, clearly establish the funding arrangements for the duration of the project have been signed. The CCSA was concerned that the concept of offering “comfort” to operators outlined in the EMR Technical Update would fall short of this requirement. The CCSA is pleased that the draft bill does provide the option of issuing investment instruments which could meet the requirements of project developers as described above. An outstanding issue of concern though relates to the timing of when an investment instrument might be available (see below).

Timing of Royal Assent

7. The CCSA is very supportive of the Government’s objectives of having the first UK CCS projects operating from 2016 and believes that this is achievable. Meeting this deadline would require investment instrument support contracts to be signed in 2013. The CCSA is therefore concerned that Royal Assent of the Energy Bill is not expected until Q4 2013. This timeline risks undermining investor confidence, delaying early investment decisions and jeopardising the Government’s goals for early CCS deployment.

Payment model

8. The CCSA shares the view expressed by numerous stakeholders that the proposed statutory CfD contract model may not be an investable proposition. There are concerns about whether a generator in receipt of a CfD contract with multiple electricity suppliers as the counterparty would be able to enforce the contract in addition there is a significant regulatory risk as any subsequent changes to the legislation could invalidate any existing CfDs. Considering the widespread lack of confidence in the current proposals the CCSA believes that the Government should come forward with alternative payment model proposals.

Change of Law/contract terms

9. There is inevitably uncertainty over the future regulatory and commercial environment within which CCS projects will be operating decades into the future. It is therefore likely that both the Government and project developers will want to include triggers that can enable the terms of CfDs to be altered. For example, in the future the project developer and the System Operator may wish to operate the CCS plant under a flexible CfD rather than the baseload CfD. In order to prevent such triggers being perceived as appreciable risks to projects they must be predictable, well defined and result in well defined outcomes that place both parties in positions that are consistent with the spirit of the initial CfD contract. Similarly it is critical that robust change of law provisions are established to prevent retrospective, unilateral changes to the CfD contracts being imposed upon project developers with adverse impacts. Failure to provide adequate change of law provisions will undermine investor confidence in the CfD.

Reference price

10. In its first submission (para. 13) the CCSA raised the concern on whether the year-ahead baseload price is the appropriate reference price due to concerns over the lack of liquidity and confidence in that market segment. Putting the issue of liquidity aside there are also legitimate concerns on the assumption that the year-ahead price is the most appropriate reference price for CCS plant, including:

(1) Generators will have to sell the power ahead to “capture” the reference price exposing them to significant credit/collateral requirements which will be challenging for independent generators.

(2) For early CCS projects selling power ahead creates a significant business risk in the event that the CCS chain is unavailable and generators are unable to meet their contracted volumes.

(3) CCS projects seeking Power Purchase Agreements may find that these trade at a significant discount to the reference price.

Investment in the CCS Chain

11. The CCSA believes that further consideration needs to be given to the effectiveness of the CfD instrument to drive the investment necessary in CCS infrastructure (the CO₂ transportation and storage infrastructure). In particular there are two issues that should be considered:

(1) Does the CfD contract issued to a generator provide enough clarity to the investors in CCS infrastructure on the revenues that they will receive?

(2) Does the mismatch between the very short CfD contract length (10 years initially) that has been proposed for CCS projects (CCSA Submission, part 1, para. 10) and the liabilities and responsibilities of the storage operator (multiple decades) create a barrier to investment?
Capacity Market

12. The Government is currently minded not to permit plants receiving CfDs to also participate in the Capacity Market. However, as noted in our first submission (para.8) the CCSA is very concerned about the market risk facing CCS plants from the inability of CCS plant to dispatch because of conditions in the electricity market. Much of the rationale on the need for a Capacity Market applies equally strongly to CCS plant. Given this the CCSA believes that at a minimum it is important that CCS plant has the flexibility to opt a proportion of its capacity for CfD support with the remaining capacity supported under the Capacity Market.

Emission Performance Standard

13. The proposal for a 450 gCO$_2$/kWh Emissions Performance Standard will prohibit the construction of unabated coal-fired power plants in the UK. However, the EPS will only indirectly impact on CCS technologies as project developers will be reliant on the FIT CfD to support CCS investment in the near-term.

14. The CCSA supports the calculation of the EPS as an annual limit based on baseload operation. This has the potential to enable CCS plants to generate additional electricity during times of system stress as the capture part of the CCS chain could be “switched off”, thereby increasing the capacity of the plant dispatching electricity to the grid. During these times the CO$_2$ emissions from the CCS plant will increase however, the plant could be operated to ensure that annual emissions remained below the 450 gCO$_2$/kWh EPS.

15. The CCSA supports the exemption from the EPS requirements for CCS demonstration plants. However, the CCSA is very clear that the exemption for CCS plants should only be for the purposes of assisting the early stage development of this emission reduction technology. EPS exemption should assist the CCS demonstration programme for the following reasons:

   (1) This should help facilitate the demonstration of the full range of CCS technologies if necessary. Although for some demonstration projects CCS will be fitted to a higher proportion of the plant enabling it to comply with the EPS limit.

   (2) Exemption from the EPS will contribute to the de-risking of these early projects. The integration of the CCS chain to a power plant may result in unforeseen technical issues which lead to the CCS chain having a lower availability and higher emissions than anticipated. This would increase the commercial risks faced by the investor.

   (3) The Government may require early CCS projects to demonstrate the flexibility of CCS in order to better understand the contribution that fossil fuel power plants with CCS will play in the future energy mix. The exemption will help reduce the risk that plant load factor has to be constrained.

June 2012

Written evidence submitted by KTI Energy Limited

KTI Energy Limited is specialist developer of large scale renewable CHP schemes serving communities of the size of Sheffield. The attached e-mails to Ministers and Members of Parliament draw attention to unacceptable obstruction by waste officers to the development of such renewable CHP schemes generating and supplying targeted green electricity and heat to communities to promote their economic growth.

Ministerial responsibility for the planning and execution of large scale renewable CHP schemes rests equally with Ministers of State in DECC, BIS, Defra, DCLG and The Treasury. The Minister of State at DCLG, Greg Clark MP, has responsibility for devising a planning system under Sections 95, 96 and 97 of the National Planning Policy Framework by which waste planning authorities can no longer obstruct local planning authorities on where and how such renewable CHP schemes should be located and executed. A significant issue to be determined by the Minister of State at Defra is to confirm SRF (solid recovered fuel) is not a waste, and a SRF combustor is not an incinerator.

KTI Energy Limited accepts wind power is likely to be the mainstay of DECC’s renewable energy programme. But only waste and virgin biomass fuels are able to predictably generate and supply green electricity and heat to major energy users over 8,000 hours per annum. That means energy availability over 90% compared with around 35% from wind power. Government allowing Defra and its waste officers to dispose waste and virgin feedstock wherever they choose is a crime against communities which rightfully expect the waste they produce is gainfully returned to promote growth in their communities and not, against their will, mindlessly incinerated.

KTI Energy Limited additionally deplores stand-alone power stations fired by virgin biomass (eg wood pellets) costing around £100 per tonne imported from the United States and other nations. The reason is the high ROC value (around 2.5 ROCs per MWh) such projects demand for economic viability. The much better course is for wood pellets to be co-fired with SRF and other waste derived fuel to generate green electricity and heat by licensed multi-fuel renewable CHP schemes selling green electricity and heat at their retail price to public and private major energy users. The Minister of State at DECC appears not to have investigated the logistics of such renewable CHP schemes notwithstanding exhortation from KTI Energy Limited to do so.
KTI Energy Limited finally highlights the public sector (Government offices, NHS hospitals, Network Rail, etc) could set a good example to all by purchasing as much green electricity and heat from licensed multi-fuel renewable CHP schemes is could be made available from the renewable energy industry. We repeat “it is not for intellectually challenged waste officers to obstruct their development”.

June 2012

Memorandum from the Department of Energy and Climate Change (DECC) to the Delegated Powers and Regulatory Reform Select Committee

INTRODUCTION

1. This Memorandum identifies the provisions in the draft Energy Bill which confer power to make delegated legislation. It explains the purpose of the delegated power proposed; why the matter is to be dealt with in delegated legislation; and the nature and justification for any parliamentary procedures which are proposed.

2. Most of the delegated powers are to be exercised by the Secretary of State by statutory instrument. However the Bill also confers powers on the national transmission system operator.

3. The Bill contains 50 individual provisions for delegated legislation. The Annex provides a reference for all delegated powers in the Bill.

4. The descriptions of the powers are arranged in the order that they appear in the Bill. For completeness, the narrative presented in this Memorandum describes each part of the Bill. Where there are no legislative powers conferred on the Secretary of State or others under a particular part of the Bill that is noted in the text. Ofgem is the Office of the Gas and Electricity Markets, references to Authority in this document refer to the Gas and Electricity Markets Authority by which Ofgem is government.

5. Pre-Legislative Scrutiny on the draft Bill is being carried out by the Energy and Climate Change Committee; the draft Bill was published on 22 May and is available on the DECC website here: http://www.decc.gov.uk/en/content/cms/legislation/energybill2012/energybill2012.aspx.

6. It is the Government’s aim to introduce the Bill in November, this Delegated Powers Memorandum therefore refers to the version of the Bill that was published in draft and may be subject to change.

BACKGROUND

Policy context

7. Energy is essential in almost every aspect of our lives and is fundamental to the success of our economy. The Annual Energy Statement, published in November 2011, set out the Government’s plan to support the transition to a secure, safe, affordable and low-carbon energy system, and mobilise commitment to ambitious action on climate change, internationally.

8. The Government is committed to achieving its climate change and renewables targets, including a 34% reduction in its CO₂ emissions by 2020 (relative to 1990); at least an 80% reduction by 2050; and ensuring that by 2020, 15% of the energy consumed in the United Kingdom comes from renewable sources.

9. Moving to a secure, more efficient, low-carbon energy system in a cost-effective way is extremely challenging, but is achievable. It will require major investment in modern technologies: to renovate our buildings; to provide for the electrification of much of our heating, industry and transport; and to move to cleaner power generation. It will also require major changes in the way energy is used by individuals, by industry, and by the public sector.

10. Through this Energy Bill, the Government aims to further its objectives to meet the UK’s decarbonisation and renewable targets, at least cost to consumers. The Government aims to ensure continued secure energy supplies whilst creating the right conditions for markets and private investment, through greater regulatory certainty and clarity. It will do this through its programme of Electricity Market Reform (EMR); through strengthening the regulatory framework by further clarifying the role of the regulator, Ofgem; and through establishing an Office for Nuclear Regulation (ONR). In addition, the Bill makes provisions ensuring developers of offshore generating stations can test and commission offshore transmission infrastructure to export power without committing a criminal offence, before transferring the infrastructure to an offshore transmission owner.

11. Finally, the Bill makes provisions for a measure to enable the sale of Ministry of Defence (MOD) held assets, which pump aviation fuel to United Kingdom and United States airbases as well as some civilian airports—the Government Pipeline and Storage System (GPSS).
Overview of the Bill

The Bill is in four parts:

**Part 1: Electricity Market Reform (EMR).** In Planning our electric future: A White Paper for secure, affordable and low-carbon electricity (July 2011, http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/emr_wp_2011.aspx), the Government announced its intention to legislate for structural reforms to the energy market. This will ensure future electricity generation is affordable, secure, diverse and consistent with the UK’s obligations to reduce carbon emissions and increase the use of renewables. Key elements of the reform package include:

— the introduction of new long-term contracts (Feed-in Tariff with Contracts for Difference) to provide stable financial incentives to invest in all forms of low-carbon electricity generation. A contracts for difference approach has been chosen over a less cost-effective Premium Feed-in Tariff;

— a capacity mechanism to ensure future security of electricity supply (the December 2011 Technical Update set out the decision to develop a Capacity Market mechanism);

— an Emissions Performance Standard (EPS) set at 450g CO$_2$/kWh to reinforce the requirement that no new coal-fired power stations are built without CCS, but also to ensure necessary short-term investment in gas can take place; and

— a Carbon Price Floor to reduce investor uncertainty, putting a fair price on carbon and providing a stronger incentive to invest in low-carbon generation now. The Carbon Price Floor was legislated for through the Finance Act during 2011.

**Part 2: Nuclear Regulation.** This establishes the Office for Nuclear Regulation with powers and responsibilities to regulate the safety and security of the next generation of nuclear power plants, as well as to deal with the transport of radioactive materials nuclear security and safeguards more generally.

**Part 3: Government Pipe-Line and Storage System (GPSS).** This makes provision relating to the government pipe-line and storage system, in particular: the rights of the Secretary of State in relation to that system; registration of those rights; compensation in respect of the creation of new rights or the exercise of rights; that the rights may be transferred; and, the application of the Pipe-lines Act 1962 (c.58) to the system.

**Part 4: Miscellaneous and General.** Comprising of a minor measure to ensure UK offshore grid constructors can build and test infrastructure to export power without committing a criminal offence, and provisions on review, commencement and extent.

Territorial Extent and Application

15. The draft Bill extends to the constituent nations of the United Kingdom as described below. We respect the Devolution Settlements and are working very closely with the Devolved Administrations, Territorial Offices and OAG to reach high level agreement on the application of the Bill within each respective administration.

16. Due to the complex technical nature of the provisions and ongoing development of the detail in secondary legislation, discussions will continue throughout the legislation process. Aside from regular engagement across the Bill, at a formal level, officials representing each Devolved Administration sit on the EMR steering board and we are considering if a Ministerial level group would be appropriate.

17. All provisions in the Bill extend to England.

18. All provisions in the Bill apply to Wales although the Government Pipe-line and Storage System is only located in England and Scotland.

19. All provisions in the Bill extend to Scotland.

20. Subject to final approval by the NI Executive, only the following provisions will extend to Northern Ireland:

— Contracts for Difference (CFD) (Part 1, Chapter 1);

— Investment Instruments (Part 1, Chapter 2);

— Conflicts of Interest (Part 1, Chapter 4);

— Contingency Arrangements (Part 1, Chapter 5);

— Some aspects of the Renewables Transitional (Part 1, Chapter 6);

— Emissions Performance Standard (Part 1, Chapter 7), and

— Some aspects of Nuclear Regulation (Part 2).

21. CfDs, Investment Instruments, Conflicts of Interest, Contingency Arrangements, some aspects of the Renewables Transitional and Emissions Performance Standard relate to matters for which legislative competency has been “transferred” to the Northern Ireland Assembly. Accordingly a Legislative Consent Motion is being sought from their Parliament for Westminster to legislate on its behalf.
22. It should be noted that, due to timing issues, the Northern Ireland Executive have yet to provide final approval for the extension of all of the above provisions to NI. For this reason the draft Bill does not cover extension of all of the above provisions. However, these will be extended for Introduction, subject to NI Executive approval.

23. The remaining provision, relating to Nuclear Regulation, is an “excepted” matter.

PROVISIONS FOR DELEGATED LEGISLATION

PART 1—ELECTRICITY MARKET REFORM

Chapter 1: Contracts for Difference

Overview

24. The Government set out in the EMR White Paper 10 in July 2011 its decision to provide increased revenue certainty to low-carbon generation through use of a Feed-in Tariff following the structure of a Contract for Difference (CFD).

25. CfDs will facilitate investment in low carbon generation through removing long term exposure to electricity price volatility. CfDs stabilise returns for generators at a fixed level known as the strike price. Generators receive revenue from selling their electricity into the market as usual. In addition, when the market price is below the strike price they also receive a top-up payment from suppliers for the additional amount. Conversely if the market price is above the strike price, the generator must pay back the difference. Low carbon generators will remain active participants in the wholesale electricity market.

26. The key elements and principles of the CFD scheme are set out on the face of the draft Bill, and in the wider Command Paper within which it is published. They are also laid out in the EMR Overview document which can be found here: http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx. Further detailed work will be undertaken to give effect to these provisions, and elements of the mechanism such as targets and support levels will need to be updated periodically over the lifetime of the mechanism. Therefore, the Department considers that it is appropriate to address the detailed design of the scheme in secondary legislation.

Clause 1: Power to make regulations about contracts for difference

Power conferred on: Secretary of State
Power exercised by: Regulations
Parliamentary procedure: Negative Resolution

27. This power allows the Secretary of State to set out the detail of the CFD scheme in regulations. The regulations will include the provision about the terms of CfDs to be issued and provision about the operation of the scheme by the national transmission system operator who will administer the scheme.

28. Prior to making the regulations, the Secretary of State is required to consult electricity suppliers (who will be subject to the obligations imposed by CfDs) the national transmission system operator, Welsh and Scottish Ministers. Many of the generic CFD terms are not intended to change substantially over time, but the terms will be of some detail. It is necessary to retain some flexibility to change terms. For example, the duration of CFD instruments may be changed where technological developments meaning the economic life of a particular station has changed or the financing sector has grown sufficiently to allow repayment over longer periods allowing savings to consumers. Industry would be consulted on any such changes.

29. It is our intention to change the level of support which will be available in CfDs periodically (such changes would only apply to CfDs issued after such changes), making a change where there is evidence of a change in costs for the technologies. For example marine is currently developing and advancing through its learning curve, we would therefore expect significant savings over the next few years, but it is not possible to accurately predict when these may happen. Allowing support levels to be set through secondary legislation allows Government to be responsive to these changes and realise any savings as quickly as possible. Equally if costs rise we would expect to be able respond to this if necessary.

30. The regulations may also confer functions on Ofgem to monitor CfDs and make certain determinations (see Clause 7). Ofgem has a number of duties under the existing Renewables Obligation, Renewable Heat Incentive and Small Scale FITs to monitor eligibility of generation stations, audit metering date, ensure biomass sustainability etc. It may be appropriate for them to continue these functions in relation to the CFD scheme.

31. The Department judges that the negative procedure is appropriate for these matters, as it strikes the right balance between giving Parliament opportunity for scrutiny, whilst recognising the powers requested allow Secretary of State to change the detail—rather than the overall purpose—of the scheme allowing maximum flexibility to respond to changing circumstances in the future in a timely manner.
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Clause 2: Issuing a CFD

Power conferred on: Transmission System Operator and Secretary of State
Power exercised by: CFD Instrument
Parliamentary procedure: None

32. These are powers enabling the transmission system operator and Secretary of State to issue CFDs (found in Clause 2(1) and 2(2) respectively). These powers enable support under the scheme to be given to individual projects. As such it is akin to a licensing power and is not directly subject to parliamentary control. However, exercise of this power will be subject to provision set out in the CFD regulations (made under Clause 1) and functions conferred on the transmission system operator (such functions conferred by way of licence modification under Clause 10) both of which are themselves subject to parliamentary control. It is intended that for the majority of generation projects the national transmission system operator will issue CFDs, with the Secretary of State only issuing in respect of a limited number of projects which may require individual negotiation of terms.

Clause 8: Order for maximum cost and targets relating to CFDs

Power conferred on: Secretary of State
Power exercised by: Order
Parliamentary procedure: Affirmative Resolution

33. This power enables the Secretary of State to set out the maximum cost of the CFD scheme by setting a financial cap on the ability of the national transmission system operator to issue CFDs. It also provides for a power to direct the national transmission system operator not to issue CFDs if the Secretary of State determines that doing so would exceed the cost cap. The Order may also set out targets to be met with respect to the number of CFDs issued. This may assist with ensuring compliance with decarbonisation and renewables targets.

34. The need to introduce a maximum cap on costs of the CFD scheme is necessary to ensuring financial control over the scheme.

35. This power may also be used to allow technology specific targets to be set consistent with wider Government targets.

36. The manner of implementing a cost cap will be somewhat technical. Over time it is highly likely that any cap will need to be changed to reflect future circumstances.

37. The Department judges that the Affirmative procedure is appropriate as this power limits the cost of the CFD scheme and determines how the scheme is controlled to ensure Government achieves wider targets such as Carbon and Renewables targets. We believe it appropriate that Parliament should have a greater level of control over this Order making power which sets out financial limits and targets for the scheme than the regulations under Clause 1 which deal with the technical detail.

Clause 10(1): Licence Modifications for the purpose of CFDs

Power conferred on: Secretary of State
Power exercised by: Modification of Electricity Licence Conditions
Parliamentary procedure: Negative Resolution

38. This power enables the Secretary of State to amend transmission and supply licences and documents (and documents maintained in accordance with those licences (such as codes) in Order to give effect to duties and obligations.

39. The powers are necessary to make amendments to the Balancing and Settlement Code (BSC) to enable the BSC company (Elexon) to assist suppliers and generators in settling payments due under CFDs.

40. The provision is also likely to be used to make amendments to transmission licences to confer some functions on the national transmission system operator necessary to allow it to issue CFDs and carry out the administration of the scheme.

41. It is necessary to have some continuing flexibility to make such changes over the course of the scheme to ensure account is taken of changes to the scheme, and ensure that the settlement mechanism remains appropriate over the course of the life of CFDs.

42. The Department has identified that there is precedent for use of this form of negative procedure for modifying licenses in this manner in section 32 of Energy Act 2010 and section 89 of Energy Act 2008. The Department judges that it is appropriate to use this procedure as the provision is of an administrative nature.

Chapter 2: Investment Instruments

Overview

43. There is a significantly high risk that investors/developers will fail to invest in low carbon electricity generation projects (particularly in relation to nuclear new build, large renewable energy projects and early
stage Carbon Capture and Storage plant) in the UK until after the CFD regime established by the provisions in Chapter [1] comes into force and the regime is implemented; or indeed fail to invest in the UK at all because of the uncertainty as to the investment environment pending the implementation of that regime.

44. Given the time it will take to progress the legislation underpinning the CFD regime, transitional arrangements are needed to address this issue. The powers set out below will enable the Secretary of State to issue early investment instruments which are similar to the CFDs that will be available under the CFD regime. These instruments will be used to provide investors/developers with a sufficient level of certainty on CFDs at the right point in time to enable them to make positive final investment decisions (FIDs) in relation to low carbon electricity generation projects in advance of the main CFD regime being implemented, thus ensuring that there is not a hiatus in low carbon electricity development between now and then.

Clause 15: Secretary of State duty to issue an investment instrument

45. Clause 15(1) provides for a duty on the part of the Secretary of State to issue investment instruments in certain circumstances. Inherent in that duty is a power to issue such instruments. This power will enable revenue support under the investment instruments to be given to individual projects.

46. Exercise of this power will be subject to a set of conditions (as set out in Clause 15 (2), (3) and (4)) being satisfied.

47. The power inherent in this duty is needed in order to provide investors and developers with a sufficient level of certainty about the investment instrument to enable FIDs to be made pre-enactment. It is inherently time limited as it can only be exercised in relation to investment instruments for which the necessary conditions set out above have been met during the course of the passage of the Bill.

48. The power will be exercised by the Secretary of State issuing the investment instrument, in a similar manner to CFDs issued under the CFD scheme. As with that power, this power is to be used to enable support to be given to individual projects. As such it is akin to a licensing power and is not directly subject to parliamentary control. However, it is intended that the Secretary of State will only issue investment instruments in respect of a limited number of projects which may require individual negotiation of terms.

49. Although negotiation of the terms of the instrument will take place between Government and electricity generators on a project by project basis, the scope of the terms and conditions of the investment instruments will be likely to include provisions covering the matters referred to in the supplemental power in Clause 14.

50. As is the intention in relation to CFDs, a generator and all licensed suppliers will be parties to a CFD instrument. The terms of the instrument may be enforced by the parties against each other. The instrument will require payments between suppliers and generators (and vice versa). The support level will be linked to wholesale electricity prices. When prices are low, a generator with a CFD will receive payments from suppliers, but when prices are high generators will have to make payments back to suppliers.

Clause 16: Secretary of State power to issue an investment instrument

51. This is a power for the Secretary of State to issue investment instruments. The power enables revenue support under the investment instrument to be given to individual projects. Exercise of this power will be subject to a set of conditions (as set out in Clause 16).

52. As with the provisions in Clause 15 this power is needed in order to provide investors and developers with a sufficient level of certainty about the investment instrument to enable FIDs to be made in advance of the CFD regulations coming into force.

53. The power will be exercised by the Secretary of State issuing the investment instrument, in a similar manner to CFDs issued under the CFD scheme. As with that power, this power is to be used to enable support to be given to individual projects. As such it is akin to a licensing power and is not directly subject to parliamentary control. However, it is intended that the Secretary of State will only issue investment instruments in respect of a limited number of projects which may require individual negotiation of terms. The power is time limited as it can only be exercised until 31st December 2015 or the date on which the CFD regulations first confer a power on the Secretary of State to issue a CFD.

54. Negotiation of the terms of the instrument will take place between Government and electricity generators on a project by project basis. The scope of the terms and conditions of the investment instruments will be as per Clause 14.
Clause 17: Licence modifications for the purpose of investment instruments

Power conferred on: Secretary of State
Power exercised by: Modification of Electricity Licence Conditions
Parliamentary procedure: Negative Resolution

55. This power enables the Secretary of State to amend transmission and supply licences and documents (and documents maintained in accordance with those licences (such as codes)) in order to give effect to duties and obligations necessary to support investment instruments. It is only intended to be used in the event that the Bill becomes law, but the main CfD regime is not implemented; in which case any investment instruments issued would not be able to rely on the CfD regime to support them, but would require their own regime to be implemented.

56. The powers are necessary to make amendments to the Balancing and Settlement Code (BSC) to enable the BSC company (Elexon) to assist suppliers and generators in settling payments due under investment instruments.

57. The provision is also likely to be used to make amendments to transmission licences to confer some functions on the national transmission system operator necessary to allow it carry out the administration of the investment instrument scheme.

58. It is necessary to have some continuing flexibility to make such changes over the course of the scheme to ensure account is taken of changes to the scheme, and ensure that the settlement mechanism remains appropriate over the course of the life of investment instruments.

59. The Department has identified that there is precedent for use of this form of negative procedure for modifying licenses in this manner in section 32 of Energy Act 2010 and section 89 of Energy Act 2008. The Department judges that it is appropriate to use this procedure as the provision is of an administrative nature.

Clause 19: Regulations for the purpose of investment instruments

Power conferred on: Secretary of State
Power exercised by: Statutory Instrument
Parliamentary procedure: Negative Resolution

60. This power allows the Secretary of State to make regulations containing further provisions about investment instruments.

61. The power will be exercisable by statutory instrument, subject to the negative Resolution procedure in both Houses, and subject to consultation with the electricity generator and all electricity suppliers (who will be subject to the obligations imposed by the investment instruments), the Gas and Electricity Markets Authority and such other persons as the Secretary of State considers appropriate.

62. The negative procedure is considered appropriate as it strikes the right balance between giving Parliament opportunity for scrutiny, whilst recognising the powers requested allow SoS to make necessary arrangements in connection with (for example) settlement and other functions in relation to investment instruments.

Chapter 3: Capacity Market

Overview

63. The draft Energy Bill will enable the Secretary of State to establish a Capacity Market. A Capacity Market is an intervention in the electricity market designed to ensure that sufficient reliable electricity capacity is in place. This will operate alongside the electricity market.

64. The Capacity Market is proposed to address the significant risks to security of electricity supply that we face in the medium term as around a fifth of existing capacity is expected to close over the next decade and more intermittent (wind) and inflexible (nuclear) low carbon generation is built to replace it.

65. These changes to our market create an investment challenge, in particular for plant such as gas. This is because low carbon plant has lower operating costs, meaning fossil-fuel plant will operate less often than now and be less certain of its revenues. This could lead to under-investment and uncomfortably low levels of reliable capacity. A Capacity Market provides an insurance policy against the possibility of future blackouts—for example, during periods of low wind and high demand—with the aim of ensuring that consumers continue to benefit from reliable electricity supplies at an affordable cost.

66. The draft Bill sets out the broad framework to enable the implementation of a Capacity Market, and confers powers on the Secretary of State to implement this through regulations and any necessary changes to electricity licences and industry codes. This will enable the Secretary of State to set out the detailed rules about matters such as the eligibility criteria for capacity providers, the process for deciding how much capacity should be contracted for in a capacity auction, how capacity auctions are to be run, and how financial incentives will be calculated.
67. A significant part of the detail of the Capacity Market design requires the Department to work closely with the national transmission system operator, the Gas and Electricity Markets Authority, and industry to ensure that the mechanism is effective and fully integrated with the complex arrangements governing the operation of the current electricity market. The Department expects to undertake a formal consultation on the detailed rules governing the Capacity Market in late 2013. As such, the Department considers it necessary to implement the detailed rules through regulations.

68. In addition, it is necessary to retain flexibility on the detailed rules in order to respond to changing circumstances within the electricity market, such as the emergence of new electricity generation technologies and changes in the scope for demand reduction. Such flexibility is also required to ensure that the Capacity Market can be adapted to take account of experience gained when the mechanism has been in operation.

69. The Department therefore believes it is appropriate to set out the detail of the mechanism in secondary legislation, with amendments to licences and industry codes as necessary. The Department further considers it appropriate to enable the Secretary of State to make consequential amendment to primary legislation in order to ensure that, when the Capacity Market is implemented, it fits effectively within the existing legal framework for the electricity market.

70. Given the importance of an effective fit with the existing regulatory framework, Clause 29 confirms that where Capacity Market functions are conferred on the Secretary of State or the Gas and Electricity Markets Authority (GEMA) the principle objective and duties set out in sections 3A to 3D of the Electricity Act 1989 apply as they apply to functions of the Secretary of State and the Authority under Part I of that Act.

Clause 20: Power to make regulations about capacity payments

71. Clause 20 enables the Secretary of State to make regulations for the purpose of providing capacity to meet the demands of consumers for the supply electricity in Great Britain (“electricity capacity regulations”). As stated in subsection (4), the Secretary of State can use this power to make provision about: the issuing of, and obligations under, capacity agreements (Clause 21); the running of capacity auctions and the process for deciding how much capacity will be required (Clause 22); the conferring of functions on the Authority in relation to the Capacity Market (Clause 23); the obligations of capacity market participants and persons carrying out functions under the Capacity Market (Clause 24); information requirements, including for its provision, publication and protection (Clause 25); and enforcement and dispute Resolution, including appeals (Clause 26).

Clause 21: Capacity agreements

72. This Clause enables the Secretary of State to make provision in electricity capacity regulations about capacity agreements.

73. Subsection (2) sets out that a “capacity agreement” is an instrument that places certain requirements on certain persons. It places requirements on the holder of the agreement, known as a “capacity provider”, to provide capacity. The capacity agreement also places requirements on all electricity suppliers to make payments for the benefit of capacity providers, and for capacity providers to make payments to, or for the benefit of, electricity suppliers.

74. Subsection (3) enables the Secretary of State to set out the meaning of an electricity supplier. This flexibility is important so that the Secretary of State can, if necessary, exclude suppliers who do not hold electricity licences, or who serve only a very small number of customers, from the obligation to make capacity payments to providers of capacity. This subsection also enables the Secretary of State to allow for situations that arise where a person ceases to be an electricity supplier, or becomes a new supplier, in order to address issues in relation to how the respective liability of each supplier is calculated.

75. Subsection (4) describes the particular provision that the Secretary of State may include in regulations with regard to a capacity agreement. This includes in particular the terms of a capacity agreement and its duration, who may be a capacity provider, the circumstances in which capacity must be available, the means for calculating capacity payments and capacity incentives, arrangements for the settlement of these, the enforcement of terms and settlement of disputes, termination and variation, and assignment and trading. It is essential that these matters can be designed to be a good fit with market circumstances and can be adjusted over time as the particular security of supply requirements change and the Capacity Market evolves. For instance, the length of capacity agreements may need to be adapted over time to allow the mechanism to be as effective as possible according to the prevailing market conditions.
76. There may be circumstances where not enough capacity is being contracted through the Capacity Market as a result of insufficient investment in new plant. Lengthening the duration of capacity agreements is likely to encourage new investment to be brought forward. The Secretary of State may additionally need to allow for different length contracts in different situations: for instance, long-term contracts may be necessary to provide the level of certainty required for new plants to participate in the Capacity Market.

77. Subsections (4)(b) and (5)(b) also enable the Secretary of State to set out in regulations the circumstances in which, and the process by which, a capacity agreement may or must be issued, including provision about the outcome of a capacity auction. Subsection (5)(a) enables the Secretary of State to provide for the national transmission system operator to issue these agreements. These provisions enable the Secretary of State to ensure that capacity agreements are issued in a way which is consistent with the process for determining who may be a capacity provider (referred to as capacity auctions).

78. Subsections (5)(c) and (d) enable the Secretary of State to require potential capacity providers to satisfy certain conditions, or satisfy the national transmission system operator as to certain matters, before entering an auction or becoming a capacity provider.

79. Subsection (6) confirms that regulations can include provision about the inspection of plant or premises. It is likely to be necessary for the Secretary of State to require that potential capacity providers demonstrate that they can deliver the required capacity, perhaps through physical tests of the plant, or by presenting credible financial plans and planning consents to put capacity into place. In addition, providers may need to demonstrate that they will be able to meet payments when entering into capacity agreements, for example through the demonstration of financial collateral. It is important that eligibility criteria are, and will continue to be, aligned with prevailing market conditions to support the effectiveness of the Capacity Market mechanism. There are likely to be circumstances that will require the eligibility requirements to be amended that will only become apparent during the operation of the mechanism. For instance, the Secretary of State might consider when first implementing the Capacity Market that physical testing of all plant is necessary in order to ensure that that reliable capacity is delivered, but over time it may be possible to run the scheme without such rigorous inspection requirements.

80. The Department considers that it is necessary for provision about capacity agreements to be made through secondary legislation, licence and code modifications in order to ensure that the provision fits with the existing electricity market (including through consultation with affected persons, as is required by Clause 30(2)) and to ensure that the mechanism can respond to prevailing market conditions.

Clause 22: Capacity auctions

Power conferred on: Secretary of State
Power exercised by: Regulations
Parliamentary procedure: Affirmative Resolution in the first instance, negative Resolution for future changes

81. This enables the Secretary of State to make provision in electricity capacity regulations for the determination on a competitive basis of who may be a capacity provider (referred to as a capacity auction). It is intended that capacity auctions will be administered centrally by the national transmission system operator and will be used to contract the capacity required for a particular delivery period.

82. This Clause enables the Secretary of State to set out in regulations the process by which decisions will be taken with regard to the volume of capacity to contract for in a particular auction. Any decision about how much capacity to contract for requires the decision maker to balance the risk of there being insufficient capacity in a particular delivery year (which could result in blackouts) with the cost of protecting against this. It is necessary to establish a process which enables the necessary trade-offs to be made, on an auction by auction basis, but which still gives market participants sufficient information to enable them to bid into the capacity auction. The Department considers that it is necessary for the Secretary of State to set out this process in regulations, to enable a process to be established to allow these complex trade-offs to be made. In order to ensure that there is sufficient certainty as to the way in which his powers are to be carried out, subsections (2)(f) and (4) enable the Secretary of State to make provision about such matters as the frequency with which he will take decisions, consultation and the matters which he is to take into account. However, the Department believes that it is not desirable to set these out in primary legislation as it may be necessary for these matters to change over time.

83. This Clause also enables the Secretary of State to require the national transmission system operator to run capacity auctions and to set out in regulations how auctions are to be run, including the circumstances in which they are to be held and at what intervals, the process which is to be followed and the amount of capacity required. It is important that the Secretary of State has flexibility to ensure that capacity auction design can properly reflect any technical considerations that may be raised during consultation with industry. Particular considerations include how matters such as the location of capacity and the type of capacity are to be addressed in the auction (including whether separate auctions should be carried out for different locations or types of capacity).
84. In addition to the need to be able to consult before implementing any capacity auction design, ongoing flexibility within the auction process is needed to respond to changes in the electricity market. This could include innovation within generation or non-generation technologies. For example, while demand side response (DSR) currently makes up a small part of the current market, it may make up a larger part as a result of technological advances or further development in the market for aggregation of DSR. Furthermore, there may be changes to the European market: the extent of interconnection that GB has with other countries, and/or the development of the rules on how interconnection is treated in national markets would necessitate amendment of the auction design.

85. In addition to the particular requirements set out in the regulations, subsection (3) enables the Secretary of State to make provision in regulations requiring the national transmission system operator to prepare and publish rules or guidance about capacity auctions, in accordance with any process set out in the regulations. This will enable the national transmission system operator to set out the technical arrangements through which the auction is to be run, including in particular such matters as the application process for persons bidding into the auction (for example, by describing what documentation must be completed and the timeline for doing so) and how the auction will be conducted. The Department considers that this provision is necessary in order to enable the national system operator to ensure that the way in which auctions are run, and the application process, can be adjusted readily, and tailored to a particular auction if necessary (eg if different auctions are used to contract for different types of capacity). Given the technical and logistical nature of these rules and guidance, we consider it is appropriate for this power to be delegated to the national system operator, provided that it complies with any process specified by the Secretary of State under subsection (3)(b).

Clause 24: Other requirements

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<th>Power conferred on:</th>
<th>Secretary of State</th>
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<td>Power exercised by:</td>
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86. This Clause enables the Secretary of State to make provision to impose other requirements, in addition to those arising in relation to capacity agreements, on licence holders, persons carrying out functions under the Capacity Market and any other person who is, or has ceased to be, a capacity provider.

87. Subsection (3) confirms that such requirements may, in particular, include requirements relating to the manner in which functions are to be exercised, restrictions on the use of generation plant and participation in a capacity auction and the inspection of plant or property.

88. In relation to restrictions on the use of generation plant and participation in a capacity auction, the Secretary of State may need to impose obligations on the holders of generating licences to ensure that market power is not abused. It may be necessary to impose restrictions on the way in which generators must operate any plant which is not subject to a capacity agreement. Without such restrictions a person who owned more than one generating plant could potentially withhold some capacity from the capacity auction in order to drive up prices in the auction and allow their other plant to benefit. This would increase the costs of the Capacity Market, which would ultimately be passed down to consumers, without contributing to security of electricity supply. Due to the complex trade-offs associated with such requirements, the difficulties in identifying the potential for market power to be exercised, and the potential impact on the way in which existing generating stations are operated, it is necessary to consult with interested persons—including, in particular, those who will be affected by the requirement—before implementing such requirements.

89. In making provision regarding the manner in which functions are carried out, the Secretary of State may require a person to follow particular processes (eg for the national transmission system operator to seek input from the Authority in preparing particular advice), to have regard to certain matters when exercising a function, or to comply with requirements regarding a particular format (eg to provide advice, or report on activities). The requirements may change with time. The need to consider certain matters, or to seek input, when preparing advice regarding the operation of the Capacity Market may also change as the market changes, for example, as different types of technology increase their role in the provision of capacity.

90. Equally the format of any report may need to be aligned with similar documents produced in relation to other aspects of energy policy (for example Contracts for Difference (CfDs)), and so the requirements for this may change as those policies develop. It is also essential that requirements on the holders of generating licences may be changed to reflect the evolution of the Capacity Market. If—as is likely—the Capacity Market does evolve with experience gained through its operation, the opportunity for exercising market power and the appropriate means to mitigate this risk by imposing requirements on generators is also likely to change.

91. In relation to the inspection of plant or property, this provision supplements the provision in Clause 21(6), by enabling the Secretary of State to require compliance with inspection requirements otherwise than as a condition of entry into an auction. Such a requirement may be needed, in particular, where a person has ceased to be a capacity provider (eg if they have assigned or traded their capacity agreement) in order to
determine whether they complied with their obligations while they held that agreement. Such a requirement may also be needed in order to verify matters associated with any restrictions regarding the use of capacity (described above). The Department considers it necessary to take delegated powers to achieve this in order to enable the Secretary of State to consult affected persons before imposing any such inspection requirements, and to enable these requirements to be developed over time as the Capacity Market evolves.

Clause 25: Information

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<tr>
<th>Power conferred on:</th>
<th>Secretary of State</th>
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<tr>
<td>Power exercised by:</td>
<td>Regulations</td>
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<tr>
<td>Parliamentary procedure:</td>
<td>Affirmative Resolution in the first instance, negative Resolution for future changes</td>
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92. This Clause allows the Secretary of State to make provision in regulations for the provision, publication and protection of information, in particular requirements that information be provided to the Authority, the national transmission system operator, the Secretary of State or any other person specified in regulations.

93. It will be necessary for the Secretary of State to seek advice and information to inform his decisions on whether to begin auctioning for capacity and how much capacity to contract for in the first and subsequent auctions, and any other functions conferred on him by electricity capacity regulations. Such advice and information will be based on complex modelling forecasts of available capacity and electricity demand. The information required, and the form in which it is required, may also change as better and more sophisticated modelling and improved data become available. Changes to provisions may also be needed as new and existing technologies (such as storage and DSR) take a larger part in the Capacity Market.

94. There are other examples where particular information will be needed by the Authority, the national transmission system operator and/or the Secretary of State in order to effectively carry out responsibilities under the Capacity Market. In particular, the collection and sharing of information about whether capacity providers complied with requirements to provide capacity when required under their capacity agreement will be essential to the effective operation of the Capacity Market. In addition, the gathering and processing of up to date information about the market share of electricity suppliers will be essential to the determination of the extent to which each supplier must contribute towards the cost of capacity payments.

95. Specifying precisely what information is required for processes such as the ones described above requires complex analysis of the way in which the Capacity Market will operate alongside the electricity market, and will require careful consideration and consultation with the Authority, the national transmission system operator and across the industry. It is therefore necessary for these arrangements to be put in place through regulations in order to enable full consultation before these obligations are implemented, as provided for in Clause 30.

Clause 26: Enforcement and dispute resolution

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<th>Power conferred on:</th>
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<tr>
<td>Power exercised by:</td>
<td>Regulations</td>
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<tr>
<td>Parliamentary procedure:</td>
<td>Affirmative Resolution in the first instance, negative Resolution for future changes</td>
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96. This Clause enables the Secretary of State to make provision in regulations for functions to be conferred onto the Authority, any public body or any other person in respect of the enforcement of the rules of the Capacity Market, including imposing financial penalties and making provision for appeals and dispute resolution.

97. Provision for enforcement, appeals and disputes must be designed to work within the existing market. The electricity market currently provides for various different enforcement, dispute resolution and appeal mechanisms, depending on the particular nature of the obligation. This includes the enforcement regime set out in sections 25 to 28 of the Electricity Act 1989, which enables the Authority to impose enforcement Orders and fines on licence holders and certain other persons. The Electricity Act provides for the Authority to act as a dispute resolution body in certain cases (eg in relation to connection disputes, under section 23). That Act also provides, in relation to other matters, for appeals to the Competition Commission, and formal and informal disputes processes are set out in industry codes, including in particular reference to arbitration. Given the need to ensure that the Capacity Market operates effectively in this context, careful consideration and consultation with industry is important before provision is made as to these matters, which is best achieved through using secondary legislation.

98. The Secretary of State needs the flexibility to set out the detail of the arrangements governing the Capacity Market in regulations so that the views of interested persons can best be taken into account and in order to ensure that the Capacity Market operates effectively in parallel with the complex and technical electricity market. In addition, flexibility is needed to ensure that these arrangements can be amended over time to account for experience gained in running the Capacity Market and developments in the relevant technologies taking part, as well as wider energy policy.
99. Subsection (5) of Clause 30 provides that the first set of electricity capacity regulations should be made subject to the Affirmative Resolution procedure. The Department judges that due to the scale of the initial intervention in the electricity market and the potential significance of the regulations, which will set out in detail the key elements of the scheme. However, once the Capacity Market has been implemented through the first electricity capacity regulations, such intensive Parliamentary scrutiny will become unnecessary as such changes are expected to be technical and incremental, reflecting developments within the electricity market and the Capacity Market, and are unlikely to give rise to issues of broader interest.

100. Subsection (6) therefore provides that subsequent electricity capacity regulations should be made subject to the negative Resolution procedure (unless they amend or repeal an enactment, in which case the Affirmative Resolution procedure must be followed). We note that a similar approach has been taken in the past, including in particular in section 48 of the Climate Change Act 2008, where provision was made for the first regulations made under Part 3 of that Act to be subject to the Affirmative Resolution procedure (subsection (4)), but for subsequent regulations to be subject to the negative Resolution procedure (subsection (5)). Section 43 of the Welfare Reform Act 2012 is another example of this approach, as regulations made under subsection (3) are subject to the Affirmative procedure on the first exercise of the powers, while subsection (2) provides for later regulations to be subject to the negative Resolution procedure.

Clause 27: Licence modifications for the purpose of the capacity market

Power conferred on: Secretary of State
Power exercised by: Licences
Parliamentary procedure: None

101. This Clause enables the Secretary of State to modify the conditions of generation, supply, transmission, distribution and interconnector licences granted under the Electricity Act 1989, and industry codes and agreements which are maintained under those licences. The power may only be used for a purpose related to provision that may be made by or under the chapter.

102. Licences granted under the Electricity Act 1989 and industry codes form a core part of the existing arrangements governing the GB electricity market, and the Department anticipates the various amendments will be required to licences and codes in order to effectively address the complexity of full integration of the Capacity Market with existing electricity market arrangements.

103. In addition to the modification of existing codes, it may be necessary for the Secretary of State to require the creation and maintenance of a new industry code, as anticipated by subsection (2)(a) and (b). In particular, it is envisaged that the Secretary of State may wish to use a new code (or amend an existing code) to set out the technical arrangements governing matters such as the settlement of money payable under the Capacity Market. Such codes are currently used to set out detailed arrangements relating to the electricity market—for example, the Balancing and Settlement Code does this in relation to the balancing of the national transmission system by the national transmission system operator (including, in particular, the way in which sums payable under the balancing arrangements are to be settled). The use of a code as a vehicle to set out particular technical obligations in relation to participants in the Capacity Market is likely to be appropriate in order to fit with current industry practice.

104. Subsection (5) requires the Secretary of State to consult the holders of any licence being modified, the Authority and other persons the Secretary of State considers appropriate before making any changes under this power. Subsection (7) further requires the Secretary of State to publish details of modifications after these have been made. This is consistent with the requirements set out in section 8A of the Electricity Act 1989, which set out the procedure which the Authority must follow before making any changes to the conditions of licences issued under that Act.

105. The Department considers Parliamentary scrutiny is not required for this power. The Department recognises that Parliamentary scrutiny is being provided for in relation to licence and code modification powers in other aspects of this Bill. However, the Department considers that it is appropriate not to provide for such scrutiny here given the detailed, technical nature of the modifications to licences and industry codes which are envisaged in order to ensure the effective implementation of the Capacity Market, and the provision which is being made for electricity capacity regulations to be subject to the Affirmative Resolution procedure.

106. The Department considers that there is no reason in principle that Parliamentary scrutiny should necessarily be required for licence and code modifications, and that it is necessary to consider the powers being taken on a case by case basis to determine whether scrutiny is required. The Department notes in particular that the powers taken to modify licences and codes in sections 17 to 20 and 76 to 98 of the Energy Act 2011 do not provide for such scrutiny. It may also be noted that the Authority would be able to make equivalent provision using its powers under section 8A of the Electricity Act 1989 without being subject to Parliamentary scrutiny.
Clause 28: Amendment of enactments

Power conferred on: Secretary of State

Power exercised by: Regulations

Parliamentary procedure: Affirmative Resolution

107. This Clause allows the Secretary of State to amend or repeal section 43ZA of the 1989 Act regarding the annual report by Gas and Electricity Markets Authority on security of electricity supply; amend section 172 of the Energy Act 2004 regarding the Secretary of State’s annual report on security of energy supplies; amend section 25 of, and Schedule 6A to, the Electricity Act 1989 regarding enforcement of obligations of regulated persons; and to make consequential amendments (or repeals or revocations) to any other enactment as the Secretary of State considers appropriate.

108. In relation to paragraphs (a) and (b) of this Clause, the current reporting requirements of the Electricity Act 1989 and Energy Act 2004 require that the Authority provide a report to the Secretary of State on the capacity required for electricity security of supply. This informs the Secretary of State’s own assessment of what electricity capacity is required, which is published. The information contained in the Authority’s report, and the views expressed in the annual report, will be very similar to the information which the Secretary of State will need to exercise functions conferred on him by electricity capacity regulations, including in particular when deciding the amount of capacity which should be contracted for in a particular capacity auction. However, it is likely that the Authority’s statutory reporting requirements and the annual report will not continue to be fit for purpose as the capacity market is implemented and evolves, potentially leading to duplication and confusion. This Chapter therefore makes separate provision to enable the Secretary of State to require the provision of advice and information (see Clause 25).

109. For example it may be more appropriate for the national transmission system operator, as the administrator of the Capacity Market, to be required to provide information rather than the Authority. Therefore the provisions in (a) and (b) would be used to amend the Acts to avoid duplication and contradiction. In relation to section 43ZA of the 1989 Act in particular, it is possible that it will not be possible to amend that section in a way that is compatible with the Capacity Market. If so this Clause will enable the section to be repealed, and the relevant information and advice requirements will be set out in electricity capacity regulations.

110. It is critical that the information requirements described above support the process by which the Secretary of State would take decisions, and exercise any other functions, conferred on him by electricity capacity regulations. As a result, flexibility is needed to update requirements on the scope of information provided as this decision-taking process develops to ensure that reporting requirements feed in appropriately.

111. Paragraph (c) allows for the amendment of the Electricity Act 1989 to ensure that certain obligations of participants in the Capacity Market can be enforced by the Authority under the civil enforcement regime set out in the 1989 Act. Making provision for Schedule 6A to be changed for this purpose, rather than making provision in regulations, will increase transparency for market participants as it will allow them to readily see what obligations the Authority can enforce through its civil enforcement regime. We anticipate that Schedule 6A of the Electricity Act will need to be amended so that the persons subject to the Enforcement regime are listed in here, referencing the particular obligations they are subject to. For example, providers of Demand Side Response (DSR) are not subject to the current civil enforcement regime and so are not currently mentioned in section 25 or Schedule 6A of the Electricity Act.

112. These amendments could not be set out in primary legislation before the Secretary of State makes electricity capacity regulations setting out the obligations of Capacity Market participants. Consequently it is appropriate for a delegated power to be given to the Secretary of State to use regulations to make any necessary amendments to the existing legislation (or to repeal it in relation to the provision in Clause 28, if this is required) for effective implementation of the capacity market.

113. This is a Henry VIII power and therefore the Affirmative Resolution procedure is considered to be appropriate.

Chapter 4: Conflicts of Interest

Overview

114. A robust, transparent and credible institutional framework is crucial to the success of EMR, and is important to provide investors with the confidence they need to invest. The Government, the System Operator and Ofgem will have clear and distinct roles to ensure effective delivery of EMR:

— Government will retain control of the policy approach and decisions; such as the CfD strike prices during administrative price-setting, and then auction volumes during competitive price setting; as well as any security of electricity supply objective and the volume of capacity to contract for the Capacity Market (these mechanisms are explained in more detail later in this document). Government will also be responsible for defining the terms of the System Operator’s delivery role.
— The System Operator will provide evidence and analysis to inform Government’s decisions. The System Operator will also administer the CFD and the Capacity Market and report to the Government on delivery.

— Ofgem will regulate the System Operator and oversee its performance in delivering the CFD and Capacity Market, to ensure value for money and incentivise effective performance. Government proposes that the System Operator recovers its administrative costs through a system which builds on the existing incentive regime.

115. Further details on the respective roles and responsibilities of the Government, the System Operator and Ofgem will be set out later in the Autumn and in secondary legislation in 2013–14. The further definition of the roles will take into account the joint work by DECC and Ofgem to assess synergies and any potential conflicts of interest for the System Operator in delivering EMR policies and to devise any necessary mitigations.

116. This Chapter gives the Secretary of State powers to address potential conflicts of interest. In conferring the delivery functions of the Contracts for Difference and Capacity Market on the national transmission system operator, a private company (National Grid), there is a potential risk of conflict of interest arising between its new EMR functions and its existing role and interests in the energy market, including its ownership of transmission infrastructure. These powers may be needed because the role of the national transmission system operator in administering Contracts for Difference, Investment Instruments and the Capacity Market could give it influence over the type and location of future electricity generation infrastructure.

117. The potential for such conflicts of interest and any appropriate mitigating measures is subject of a joint project between DECC and Ofgem which will report in late 2012, after the Bill has been introduced.

Clause 31: Transmission licences: new licence for system operation

Power conferred on: The Secretary of State
Power exercised by: Order and licence/code modifications
Parliamentary procedure: Affirmative; Negative and None

118. Clause 31 gives the Secretary of State power to amend the licensable activity of “transmission” in the Electricity Act 1989 in order to separate the activities of transmission and system operation into two separate licensable activities. These powers give the Secretary of State the option of reinforcing the legal separation between National Grid’s system operator business (including the national transmission system operator’s obligations to administer the CFD, Investment Instrument and capacity mechanism) and its other activities by creating a new licensable activity for system operation. As set out above, the need for such measures is subject of a joint DECC/Ofgem project which will report by the end of 2012, after the Bill has been introduced. Use of the power will depend on the outcome of that project.

119. Clause 31 sets out that any Order making changes to primary legislation, for example the Electricity Act 1989, to amend the category of transmission licence and create a licensable activity for system operation will be subject to the Affirmative procedure. The Clause sets out that an Order amending or repealing secondary legislation, or making such provision together with standard licence conditions for the new system operation licence or other licence and code modifications would be subject to the negative procedure.

120. Clause 31 provides that there would be no parliamentary procedure for any instrument which set out only the standard conditions for a new system operation licence and any modifications to other electricity licences and industry codes. In line with the above, the Department considers that Parliamentary scrutiny of the standard licence conditions, and licence and code modifications made through these powers is not necessary. The key measures to amend the Electricity Act to separate the licensable activity of transmission will be subject to Affirmative parliamentary scrutiny. Any licence and code modifications made in a separate instrument would be limited in scope and very technical in nature. They would be concerned with separating out the standard conditions applicable to system operation from those which are applicable to transmission, and making other transitional and consequential changes to other electricity licences and industry codes which may be necessary as a result of the removal of system operation activities from a transmission licence.

Clause 32: Modifications of transmission licences: business separation

Clause 33: Section 29—Supplementary

Power conferred on: The Secretary of State
Power exercised by: Licence and code modifications
Parliamentary procedure: None

121. Clause 32 provides that the Secretary of State may modify the conditions of electricity licences and codes for the purposes of imposing business separation measures between: a) the national transmission system operator, EMR and system operation functions (or any combination of these); and b) any other functions, where this is necessary or desirable as a result of the conferral of new functions on the national transmission system operator to deliver Contracts for Difference, Investment Instruments and the Capacity Mechanism. Subsections (2) to (4) set out the scope of the power and make clear that it is limited to business separation measures which may be needed as result of the conferral of functions in relation to the Contract for Difference, Investment
Instruments and the Capacity Mechanism. Subsection (5) gives a non-exhaustive list of the types of measures which might include, for example, requiring functions to be carried out in a separate location or on separate IT systems. The power is therefore clearly prescribed in the primary legislation.

122. Clause 33 requires the Secretary of State to consult the holders of licences of the type being modified, Ofgem and any other persons that the Secretary of State considers appropriate before making any modifications. There is also a requirement to publish any such modifications as soon as reasonably practicable after they are made.

123. The Department considers that parliamentary scrutiny of licence or code modifications made through these powers is not necessary. This approach has been followed in respect of similar powers to modify licence conditions and industry codes. For example, the powers to make licence modifications in relation to (i) offshore transmission or distribution (section 90 Energy Act 2004), (ii) establishing new electricity trading and transmission arrangements (sections 133 and 134 of the Energy Act 2004), (iii) access to transmission systems (sections 84 to 86 Energy Act 2008) and (iv) schemes for reducing fuel poverty (section 12 Energy Act 2010) are not subject to parliamentary scrutiny.

124. There have been some cases in the Energy Acts of 2008 where licence modifications have been subject to a level of parliamentary scrutiny which is equivalent to the negative procedure. This has been included in cases where it has been considered that the modifications are of particular public interest, and where a policy has been implemented primarily through licence modifications. These have included modifications relating to the introduction of a feed-in tariff (sections 41–43 Energy Act 2008) and smart meters (sections 88–90 Energy Act 2008).

125. In this case, the Contract for Difference and Capacity Market schemes are set out in legislation and subject to parliamentary scrutiny. The licence and code modifications made through the power in this section will simply address any conflicts of interest associated with the carrying out of these functions. The modifications will be limited in scope and technical in nature, primarily affecting the transmission and national transmission system operator, National Grid, who will be consulted.

Chapter 5: Contingency Arrangements

and

Schedule 1: Transfer schemes in connection with Orders under Section 34

Overview

126. This chapter provides the Secretary of State powers to act in cases where the national transmission system operator becomes unable to continue delivery of the capacity mechanism and the contract for difference schemes. These powers enable the delivery functions to be conferred on a new delivery body in place of the national transmission system operator in circumstances such as insolvency, change of ownership and where the national transmission system operator is failing to carry out the functions properly.

Clause 34: Power to transfer EMR delivery function

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<tr>
<th>Power conferred on:</th>
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<tbody>
<tr>
<td>Power exercised by:</td>
<td>Order</td>
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<tr>
<td>Parliamentary procedure:</td>
<td>Negative</td>
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and

Schedule 1: Transfer schemes in connection with Orders under section 34

<table>
<thead>
<tr>
<th>Power conferred on:</th>
<th>The Secretary of State</th>
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</thead>
<tbody>
<tr>
<td>Power exercised by:</td>
<td>Transfer Scheme</td>
</tr>
<tr>
<td>Parliamentary procedure:</td>
<td>None</td>
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127. Clause 34 confers a power on the Secretary of State to transfer the EMR delivery functions from the national transmission system operator to a different delivery body. The power is exercisable by Order subject to the negative Resolution procedure.

128. Chapters 1 and 3 of the Bill confer functions, or enable the Secretary of State to confer functions, on the national transmission system operator to perform delivery functions under the CFD and capacity market schemes. The national transmission system operator—currently National Grid Electricity Transmission plc—has the role of coordinating the flow of electricity across the high-voltage transmission networks of Great Britain, and is licensed to perform that role under section 6 of the Electricity Act 1989 and regulated by the Gas and Electricity Markets Authority.

129. The Department considers that the national transmission system operator is particularly well-suited to carry out the role of delivery body for the CFD and Capacity Mechanism schemes. However, it is possible that circumstances may change, and the department considers it prudent to be able to confer the EMR delivery functions on a different delivery body if necessary, in order to ensure that the EMR schemes are successful.
130. This power therefore enables the Secretary of State to transfer the functions to another, consenting, delivery body. The functions may be transferred to the Secretary of State or to any other public or private sector body the Secretary of State considers appropriate. In Order to give practical effect to the transfer of the functions, Schedule 1 confers on the Secretary of State a power to transfer property, rights and liabilities in connection with a transfer of the functions.

131. The power may only be exercised in four situations—

— where the national transmission system operator has become insolvent;
— where there has been a change of ownership of the national transmission system operator and, as a consequence, the Secretary of State considers that it is necessary or desirable to transfer the functions;
— where the Secretary of State considers that the national transmission system operator is failing to perform its functions effectively and efficiently; and
— where the Secretary of State considers that it is necessary or desirable to transfer the functions in order to further the purposes of the EMR schemes (for the CFD, the purpose of encouraging low carbon investment; for the capacity market, the purpose of providing capacity to meet the demands of electricity consumers).

132. The power also enables the Secretary of State to make consequential amendments to legislation. It is envisaged that these would be used to amend the provisions in the Chapters 1 and 3 of the resulting Energy Act, and any subordinate legislation made using the enabling powers conferred by those sections; it is not obvious that any other enactments would need to be amended as a result of a decision to transfer the EMR delivery functions to a different person.

133. The department cannot foresee a time when it would definitely want the EMR delivery functions to a different body, only situations where it might wish to. Similarly, the department cannot be sure which EMR delivery functions might need to be transferred in such a situation. Finally, it cannot tell in advance which person will be in the best position to take over the EMR delivery functions.

134. The need for an exercise of discretion, tailored to the facts at the time, means that the department considers that the Secretary of State should be given a power to determine the most appropriate way to deal with the situation if it should arise.

135. It is also likely that, in any one of the situations described in the power, the department will wish to take action more quickly than would normally be compatible with the timetable primary legislation allows. That likelihood of the need for a quick response also suggests that a delegated power is appropriate. The power to make transfer schemes cannot be exercised independently of the power to make in an Order under Clause 34.

136. It is similarly fact sensitive, and it is not possible to know at this stage what property rights and liabilities may need to be transferred in order to perfect the transfer of the functions. In addition, transfer schemes tend to be highly technical in nature and it is appropriate for the function of drawing them up to be delegated.

137. The power is exercisable by Order under the negative Resolution procedure. The department considers that this is an appropriate procedure because it balances the need for proper scrutiny with the potential need for the power to be exercised quickly in certain circumstances.

138. The power is a Henry VIII power insofar as it enables the Secretary of State to make consequential amendments to primary legislation; however, the department considers that the nature of that Henry VIII power is particularly narrow, because its main use is likely to be limited only to allowing the Secretary of State to make the very amendments envisaged by the granting of the power itself. In other words, the granting of the power to transfer EMR delivery functions contains within it the natural implication that references “the national transmission system operator” in Chapters 1 and 3 would be changed to some other words.

139. So, while Henry VIII powers are usually subject to the Affirmative Resolution procedure, in this particular case the department considers that the potential need to act quickly—particularly in a situation where the national transmission system operator were to be become insolvent or were subject to a significant change of ownership—outweighs the desirability of debate before any amendments to primary legislation could be made. Parliamentary debates cannot in practice be arranged during recess or prorogation, and that might limit the Secretary of State’s power to act quickly to ensure the effective delivery of the schemes if an event were to take place at a time incompatible with Parliamentary timetable.

140. As is usual, the power to make transfer schemes is not subject to any parliamentary procedure. Transfer schemes are technical and often contain detail that is commercially sensitive, confidential or which are personal data. It is therefore usually inappropriate for transfer schemes to be published, laid before Parliament and scrutinised.
Chapter 6: The Renewables Obligation: Transitional Arrangements

Overview

141. This Chapter contains new powers for a Certificate Purchase Order which is intended to replace the existing Renewables Obligation Order (ROO) for the final 10 years of its operation from April 2027 to March 2037. The Certificate Purchase Order will impose an obligation on the Gas and Electricity Markets Authority or the Secretary of State to purchase certificates which have been issued to generators of renewable electricity. The Order will replace the current Renewables Obligation on designated electricity suppliers with a levy which will be used to fund the purchase of the certificates. The Order will fix the price of the certificates. This is intended to provide confidence in the final ten years of support for those generating stations supported under the Renewables Obligation (RO) following its closure to new generation in March 2017. This confidence is important for potential investors and developers taking long-term investment decisions, in order to encourage the construction and operation of renewable electricity generating stations.

142. In summary, this chapter confers new powers on the Secretary of State for the transition from the Renewables Obligation to a Certificate Purchase Scheme. The powers are for the Secretary of State to make a certificate purchase Order which imposes a certificate purchase obligation on the Authority or on the Secretary of State; to make provision generally in relation to the certificate purchase obligation; to provide for a certificate purchase levy which is charged in respect of supplies of electricity; to provide for the issue of fixed price certificates and to make various other provision.

Clause 35: Renewables Obligation—Transition to certificate purchase scheme

Schedule 2: The Renewables Obligation: certificate purchase scheme

Power conferred on: Secretary of State
Power exercised by: Order
Parliamentary procedure: Affirmative Resolution

143. The Electricity Act 1989 contains existing powers in Section 32 to 32M for the Secretary of State to make a Renewables Obligation Order. This Clause uses many of those powers as a model for the powers to make a certificate purchase Order but with changes and additional powers to reflect the different characteristics of a certificate purchase scheme. Some of the powers that differ from the powers for the renewables obligation are mentioned below.

144. The Clause includes power to impose a levy in respect of supplies of electricity (s.32AC), and for the funds raised by the levy to be used to enable the discharge of the Certificate Purchase Obligation by the Authority or by the Secretary of State (s.32AD). The levy would act as a replacement for the Renewables Obligation which is currently imposed on electricity suppliers.

145. The Clause includes power to require electricity suppliers to make up shortfalls in the amounts due to be collected by the levy in cases of insolvency or missed payment (s.32AC(9)). This is considered appropriate as electricity suppliers can currently be required to make up shortfalls in the amounts due in respect of the Renewables Obligation (s.32G(5) of the Electricity Act 1989).

146. Schedule 2 includes power to impose restrictions and conditions on the transfer of fixed price certificates (s.32CA(3)). This may be necessary to prevent fraud. The Schedule also includes power to provide for sums to be repaid to the Authority if a certificate has been wrongly issued and subsequently purchased by the Authority or by the Secretary of State, and if it is not possible to refuse the issue of another certificate in its place. This is necessary to prevent the operator of a generating station from benefiting from a certificate that they should not have been issued with.

147. The schedule includes power to specify the amount of electricity that has to be generated in order to receive a certificate, and for a banding review to be carried out before making subsequent Order containing such provision. The need for a banding review will not apply if the effect of the subsequent Order is to preserve the effect of the earlier banding provision in a Renewables Obligation Order or in a certificate purchase Order (s.32EA(4)). This will enable a transition from the RO to the certificate purchase scheme without changing the levels of support for grandfathered generating stations.

148. The schedule includes power to make the operation of a banding provision conditional upon the repayment of a grant (s.32EA(7)). The interest rate and period on the amount repayable may be determined in accordance with the Order or by a person. Given the range of persons that may have paid the grant, this will enable the Order to confer the function on the person who paid the grant, or on some other appropriate person.

149. The powers for a Certificate Purchase Order are put in place alongside the existing powers for the Renewables Obligation Order as it is intended to make a certificate purchase Order far in advance of it coming into force in 2027 in Order to provide greater certainty for investors in generating capacity.

150. The Department believes that it would not be appropriate to set out the detail of the certificate purchase scheme on the face of the Bill. As with the Renewables Obligation Order, the detailed design of the Certificate
Purchase Order is suited to secondary legislation as it involves technical issues and ones where consultation on the detail will be necessary.

151. As with the Renewables Obligation Order, we consider Affirmative Resolution is appropriate for a certificate purchase Order given its impact on investment decisions for renewable generating capacity. Another relevant factor is that a certificate purchase Order may impose a levy.

Chapter 7: Emissions Performance Standard

Overview

152. The Emissions Performance Standard (EPS) will limit emissions from new fossil-fuelled power stations and CCS plant associated with them, reinforcing the existing policy (set out in National Policy Statements under the Planning Act 2008) that no new coal-fuelled plant should be built unless equipped with CCS.

153. The Chapter establishes the EPS as an annual limit on emissions, equivalent to 450g of CO\(_2\) per kilowatt hour of electricity for a plant operating at baseload. This is below the level expected of new coal-fuelled plant when operating unabated, which is nearly 800g/kWh. It is, however, above the level of modern combined cycle gas-fired power stations, which operate below 400g/kWh.

154. The provisions establish a method of excepting plant which form part of the UK’s CCS Programme or benefit from European Union or Contract for Difference (under Chapter 1 of Part 1) funding for commercial scale CCS. Providing exceptions for such plant reduces regulatory risk and, therefore, supports the development of CCS technology.

155. The Clauses provide for the making of regulations about monitoring and enforcing compliance with the limit, with a view to basing both monitoring and enforcement arrangements on those for the EU Emissions Trading System, so as to minimise regulatory duplication. Provision is also made to apply the emissions limit duty with or without modification in a range of non-standard scenarios.

Clause 36(5)(a)—Duty not to exceed annual carbon dioxide emissions limit

*Power conferred on:* Secretary of State
*Power exercised by:* Regulations
*Parliamentary procedure:* Affirmative Resolution

156. The powers to make regulations under Clause 36 serve two principal purposes. In the first place, it is necessary to make provision about the precise scope of the emissions limit duty set out in Clause 36(1) and its application in a range of scenarios; secondly, it is necessary to provide for compliance with the emissions limit to be monitored and enforced. In both cases, the level of technical detail involved in such provisions and their close relationship to provision made in respect of similar matters in other legislation make them appropriate for inclusion in secondary legislation.

157. Clause 36(5)(a) specifically provides the Secretary of State with the power to make regulations relating to the interpretation of the emissions limit duty imposed by Clause 36(1). Subsections (6) and (7) provide particular details that the regulations can cover.

158. Subsection (6)(a) and (6)(b) provide for regulations to determine the emissions from fossil fuel plant and whether they are attributable to the use of fossil fuel.

159. Subsection (6)(c) makes reference to the use of fossil fuels for ancillary purposes. This is partly to ensure that incidental use of fossil fuels by biomass or energy from waste plant does not cause them to be regarded as fossil fuel plant for the purposes of the EPS and partly because gas and coal fuelled generating stations may sometimes include small generating units used eg for emergency purposes, that are separate from the main plant and whose emissions would not otherwise require separate monitoring.

160. Subsection (6)(d) provides for regulations to determine when plant ceases to be, or to be part of, fossil fuel plant.

161. Subsection (6)(e) provides for regulations to specify the meaning of “installed generating capacity,” relevant to calculating a plant’s emission limit under 36(1), “fuel produced by CCS plant”, and “constructed pursuant to a relevant consent.” This will provide flexibility for technology development and to clarify the position where a plant is built in stages or under a series of different consents.

162. In order to minimise administrative burdens on operators, the specification of the scope of the emissions limit duty in regulations may make reference to the requirements of regulations that implement the EU Emissions Trading System (EU ETS) from time to time (subsection (6)(f)) for example, in ensuring that the same emissions that count towards the retirement of EU ETS allowances count towards the emissions limit duty established in this chapter. It is important, therefore, that there is sufficient flexibility to adapt the requirement where there is a change in the EUETS requirements.

163. Subsection (7) provides for regulations to include provision to exclude emissions associated with the use of fossil fuel for heat supply from the calculation of a plant’s emissions. Good Quality (ie efficient) use of combined heat and power (CHP) in combustion generating stations will be a key technology in helping to
deliver our carbon budgets while the electricity generation sector decarbonises, and will still play a pivotal role in providing secure and cost-effective energy supplies, particularly for industry. The Government will therefore continue to promote the development of Good Quality CHP in the UK, and it is important that the EPS make allowances for the fuel used to generate useful heat when calculating allowed emissions to ensure that CHP facilities are not penalised.

164. Accordingly, the Clause provides for emissions attributable to CHP to be excluded from the calculation of a plant’s emissions for the purposes of determining its compliance with the emissions limit duty. The Department believes it appropriate to define these in secondary legislation as it may be necessary to reflect developments in technology and changes in the CHP Quality Assurance (CHPQA) programme, which provides the benchmark of what counts as “good quality” CHP.

165. Given that the scope of the emissions limit duty is a central point of EPS policy and that the matters involved in its specification, although quite technical, may also not be wholly uncontroversial, the Department believes it appropriate to apply the Affirmative procedure.

Clause 36(3)(b): Duty not to exceed annual carbon dioxide emissions limit

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166. The objective of this power is to give the Secretary of State the ability to apply or modify the emissions limit duty contained in Clause 36(1) in the circumstances contained in Part 1 of Schedule 3, relating in particular to the installation of new boilers at existing power stations, where CCS plant is associated with more than one generating station, the application of the regime to plant which does not export power to the grid, and adjustments to the emissions limit in the first and last years of a plant’s operation.

167. Provision is made in relation to new boilers because it is possible that if the main boiler of an existing coal-fuelled plant was replaced, its refurbishment would increase its operational life by a period similar to the life of a completely new plant.

168. The Department believes it appropriate to define these arrangements in secondary legislation as we will need to consult on specific provisions, including whether and how to apply the EPS where only one of a plant’s main boilers is replaced, and how to apply the EPS in respect of an extension, all of whose emissions do not pass through a separate exhaust stack from those of the rest of the plant.

169. It is very rare for plant of the size to which the EPS regime applies (50MW or more) not to export power to the Grid (or at least the local distribution network). However, should such a rare case arise in future, it may be necessary to adapt the regime to the special circumstances of such plant (particularly if, in order to avoid the incidental use of fossil fuels for start up and stabilisation purposes by biomass plants from causing them to be subject to the EPS, emissions resulting from generation while a plant is not exporting have been deemed not to count for EPS purposes, as we expect to be the case).

170. In the case of CCS plant associated with more than one generating station, in the future it is possible that plants will be built which extract fuels that do not produce CO₂ when burnt (eg hydrogen) from fossil fuels such as coal, with a view to supplying those non-CO₂ emitting fuels to power stations that will burn them to generate electricity. In some cases these extraction plants are likely to be fully integrated into a power station complex, and to supply the non-CO₂ emitting fuels wholly or mainly to the on-site power station. In other cases, the gasification plant may be physically separate, and under different management, from any power station they supply (and they may also serve non-power station customers). However, they would still be potentially large emitters of CO₂ whose emissions would be related to the generation of electricity, ultimately from fossil fuel sources.

171. The Clause, together with paragraph 3 of Schedule 3, gives the Secretary of State the power to make regulations, by way of Affirmative procedure, to apply a suitably adapted version of the EPS regime to such gasification plants where they are serving more than one power station. The modifications necessary may include provision to apply to such plants different annual emissions limits (or limits calculated in a different way) from those set out in the EPS Clauses. It is not possible to include full provision for these plants in the Bill Clauses because we do not yet have (nor do we expect to have at any stage prior to Royal Assent) a sufficiently clear picture of how they will operate, or interact with generating stations. The purpose of taking a power is therefore in essence to ensure that they can be regulated in line with the policy behind the EPS regime if and when the need to do so arises—and to discourage industry from regarding the use of separate gasification plant as a potential “way round” the EPS regime.

172. In the case of generating stations which start or end commercial operation part way through a calendar year, it will be necessary to adjust the limit to reflect the fact that plant will only be operating part of the year, to ensure that they are not given the full limit for the entire year.

173. The Clause, together with paragraph 4 of Schedule 3, allows the Secretary of State to make regulations to provide for such adjustments. This is a technical but important point which sits naturally with the other
matters, referred to above, that flesh out the details of the emissions limit duty. It is therefore appropriate to include provision for it to be dealt with in the same kind of regulations as those other matters.

Clause 36(5)(c): Monitoring and enforcement

| Power conferred on                  | Secretary of State |
| Power exercised by                  | Regulations        |
| Parliamentary procedure             | Negative Resolution|

174. The objective of these powers is to define the arrangements for monitoring and enforcing the EPS.

175. The Clause gives the Secretary of State powers to make regulations by way of negative procedure to make provision for monitoring the compliance of relevant operators with the emissions limits laid down in the legislation, and to provide for enforcement provisions in the event that operators do not comply with the limit.

176. It allows the Secretary of State to determine which authorities will be responsible for the monitoring and enforcement, impose requirements for the provision of information, and for a charging regime to fund the monitoring and enforcement functions. It also provides for the Secretary of State to confer specific enforcement powers on the designated regulator.

177. All plants which are subject to the EPS regime will also be subject to the EU Emissions Trading Scheme, for the purposes of which they will have to measure exactly the same CO2 emissions as will be subject to a limit under the EPS. The Government’s intention is therefore that the monitoring and enforcement mechanisms for EPS should be aligned as closely as practicable with those of the EU ETS. Since the latter are laid down in EU legislation, they may be subject to change from time to time in ways that cannot now be predicted. Providing for monitoring and enforcement rules to be the subject of secondary legislation is consistent with the approach taken under other Acts regulating emissions (for example the Pollution Prevention and Control Act 1999); with the need to consult on these matters against the background of clear primary legislative proposals for the main elements of the EPS regime; with the level of technical detail potentially involved; and with the need to have the flexibility to keep pace with relevant EU ETS developments as and when they happen, so as to avoid duplication of regulatory burdens where possible.

178. Getting the technical detail of these regulations right will be very important, and the Clauses provide for consultation before they are made. Once the parameters have been set by the relevant Bill Clauses (eg as regards what kind of powers to impose sanctions for non-compliance can be conferred under the regulations), the underlying policy intentions will be clear and the drafting of the regulations should not involve significant policy choices. It is therefore considered that the negative procedure would be most appropriate for the monitoring and enforcement regulations.

Clause 37: Exception for CCS demonstration projects

| Power conferred on                  | Secretary of State |
| Power exercised by                  | Order              |
| Parliamentary procedure             | None               |

179. Demonstrating Carbon Capture and Storage (CCS) for commercial-scale electricity generation is a key priority for the Government. The Government is undertaking a funding programme for CCS projects, and support may also be available for them from EU funds and through contracts for difference. A typical sized coal plant (around 1.6GW) would not be capable of meeting the EPS (without a significant impact on its load factor) with the amount of CCS that is likely to be supported through the UK’s CCS programme. Further, given the current state of the technology, some flexibility may be needed for the operation of the technology without undermining the host-power station’s ability to operate within the power market.

180. One approach would be for the Bill simply to exclude from the EPS regime those plants which would otherwise be subject to it, but whose construction or operation of CCS is being wholly or partly supported by the above sources of funding, in the interests of developing the CCS technology. However, the Government does not consider that such a blanket exclusion would be appropriate.

181. By introducing a delegated power to apply the exclusion in individual cases or to particular classes of a plant, it becomes possible to take appropriate account of individual circumstances, and in particular to provide not only that the exception applies subject to compliance with certain conditions but also that it will terminate at a defined point in the future or when certain criteria are fulfilled (for example, it would be inappropriate for the exemption to apply indefinitely if the technology has been successfully demonstrated and commercialised at a point when it would be reasonable to expect that it could be retrofitted to a larger proportion of the plant’s capacity). Conferring the exception through the exercise of a delegated power would allow the Secretary of State to take full account of all the relevant factors in each case. The objective of these powers is, therefore, to provide for individual plant to be excepted from complying with the EPS, so as to allow the possibility to demonstrate CCS across the range of technologies, and for individual projects to be selected based on their contribution to the programme, as opposed to dictating this at the outset with the EPS.

182. The Department believes it appropriate to apply exceptions in this way, as the development CCS programme develops over time. The exact projects, and need for and shape of any exception, will depend on
the outcome of the project selection process, and in some cases it be some time after the passage of the Bill before all the relevant details of the plant involved and the kinds of exception to be conferred are known. In practice, the process of formulating exception Orders is likely, at least in part, to be very closely linked to the negotiation of commercial terms for public funding of the CCS projects to which the exceptions will apply.

183. The Clauses provide for Orders to be the subject of consultation before they are made and for the Secretary of State, in making them, to have regard to a statement of policy on criteria for the award of exceptions which has been consulted on. The making of an exception Order is therefore envisaged as an executive, rather than a legislative act. It is the Government’s view that although they will be susceptible to judicial review (for example, if the Secretary of State fails to have regard to the published statement of policy), it would not be necessary to subject the Orders themselves to parliamentary control.

Chapter 8: Strategy and Policy Statement (SPS)—Overview

184. The new statutory Strategy and Policy Statement will set out the Government’s strategic priorities for energy policy; describe the roles and responsibilities of Government, Ofgem, and possibly other relevant bodies; and define policy outcomes that Government considers Ofgem to have a particularly important role in delivering. Both the Secretary of State and Ofgem will have to act in the manner best calculated to further the delivery of these policy outcomes, subject to fulfilling the principal objective ie protecting the interests of existing and potential consumers. The strategy and policy statement will replace existing guidance for the regulator on social and environmental matters. These provisions implement the recommendations of the Government’s review of the Gas and Electricity Markets Authority (“the Authority”) published in July 2011.

Clause 40: Designation of statement

185. Clause 40 enables the Secretary of State to designate a strategy and policy statement. This is a statement which sets out:

— the strategic priorities, and other main considerations, of Her Majesty’s Government in formulating its energy policy for Great Britain,
— the particular outcomes to be achieved as a result of the implementation of that policy, and
— the roles and responsibilities of persons involved in implementing that policy or who have other functions in connection with it.

186. The need for this power stems from a review of the Gas and Electricity Markets Authority (“GEMA”) carried out by the Department for Energy and Climate change in July 2011. One of the findings of this review was that, as GEMA’s role has become more complex, there has been a blurring of responsibilities between Government and GEMA. There is a need for Government clearly to take responsibility for setting and communicating strategic direction and for GEMA to take independent regulatory decisions as a logical and coherent part of this broader strategic framework. The provision of a power to designate a strategic policy statement addresses this recommendation.

187. GEMA, and the Secretary of State, will be under a duty to carry out regulatory functions in the manner considered best calculated to further delivery of policy outcomes contained in the strategy and policy statement. It is considered appropriate to give Parliament an opportunity to comment actively on the statement through an Affirmative Resolution procedure, given how the new duty in relation to it fits into the framework which governs how the Authority and the Secretary of State take energy-related decisions.

188. The Bill will also place a duty on the Secretary of State to consult extensively on the draft statement before laying the statement before Parliament for approval by Affirmative Resolution. Once approved, there will be a duty on the Secretary of State to publish the strategy and policy statement in such a manner as he/she considers appropriate.

189. The statement will be reviewed every five years (subject to earlier review in particular circumstances, eg Parliamentary election). If, following a review, the Secretary of State wants to amend the strategy and policy statement, any amended statement will follow the same procedure, including requiring approval by Affirmative Resolution before it can take effect.

Clause 46: Reporting requirements

190. This enables the Secretary of State to direct the Authority not to publish a document setting out the required information in relation to the Strategy and Policy Statement. Normally, the Authority will be required to include this information in its forward work programme for each financial year. There may be occasions
when it is known before the publication of the forward work programme that the Strategy and Policy Statement
will be revoked either before, or a short time after, the beginning of the financial year to which the work
programme refers (although after the publication of the forward work programme for that particular financial
year). This power will give the Secretary of State the flexibility to ensure that the Authority does not incur
unnecessary cost or time by directing it not to include the information related to the statement in the work
programme for that year.

PART 2—Nuclear Regulation

191. The provisions in the draft Energy Bill will consolidate the current nuclear regulator, the Office for
Nuclear Regulation (ONR), onto a statutory footing. The intention to create the ONR as a statutory body was
announced by the Government in February 2011. Pending legislation, the ONR was established as an agency
of the Health and Safety Executive (HSE) in April 2011.

192. As a statutory body, the ONR will retain the best of current practice, whilst creating a modern regulator,
based on the better regulation principles of transparency, accountability, proportionality and consistency. The
ONR will build on its current strengths as a world-class regulator. The legislation will ensure that the ONR
will be better placed to respond quickly and flexibly to current and future regulatory challenges while retaining
its focus on the protection of people and society from the hazards of the nuclear industry.

193. The Energy Bill will set out a clear governance model for the statutory ONR, giving it responsibility
for five key areas: nuclear safety; nuclear security; nuclear safeguards; the transport of radioactive material by
road, rail and inland waterway; and health and safety on nuclear sites. This will enhance the effectiveness of
the civil nuclear security regime. The ONR will play a key role in addressing some of the top risks outlined
in the National Security Strategy17 which are directly relevant to the sector.

Chapter 1: The ONR's Purposes

Overview

194. Chapter 1 sets out the purposes of the Office for Nuclear Regulation (ONR). These define the ONR’s
roles and responsibilities and cover each of the core areas in which the ONR will be able to exercise its
functions.

Clause 51: Nuclear security purposes

Powers conferred on: Secretary of State
Powers exercised by: Regulation
Parliamentary procedure: Negative Resolution

195. The purposes of the ONR will include its nuclear security purpose—which relates, among other things,
to ensuring the security of nuclear material, see for example clause 51(1)(b) and (g) which relate to the secure
use and storage and transportation of nuclear materials. Subsection (3) provides a definition of "nuclear
material" which covers certain types of fissile material specified on the face of the Bill (ie plutonium and
uranium metals, alloys and compounds) and any such other fissile materials as the Secretary of State. In addition, sub-section (4) provides that regulations may modify the definition of “nuclear material” which appears in subsection (3).

196. The approach here has precedents in section 77(7) of the Anti-terrorism, Crime and Security Act 2001
(ATCSA) and in section 71(1) of the Energy Act 2004, where in both cases the definition of nuclear material
may be added to by prescribing in regulations additional categories of fissile material (on top of those which
already expressly constitute such materials on the face of the legislation). We consider it is a precedent in the
case of section 77(7) of the ATCSA because the provision there enables the Secretary of State, through
delegated legislation, to decide which additional fissile materials are to be subject to security regulations under
that section. In the case of section 71(1), because it enables the Secretary of State to expand the responsibilities
of the Civil Nuclear Constabulary (see section 52 of the 2004 Act) in relation to the security of nuclear
materials (to include additional fissile materials).

197. In both cases the powers are subject to the negative Resolution procedure, see section 77(6) of the
ATCSA and section 71(4) of the Energy Act 2004.

198. The underlying reason for these powers of delegated legislation is the need for flexibility to respond to
developments at an international level about the definition of nuclear material and to changes in security threats.
For example, the definition of nuclear material in the Bill was drawn-up to take into account international
guidance and best practice in relation to the security of nuclear material (such as recommendations made by
the International Atomic Energy Agency in its publication The Physical Protection of Nuclear Material and
Nuclear Facilities (INFCIRC/225/Rev.4)). Should international guidance or best practice change in future the
Secretary of State may consider it appropriate to amend the definition in clause 51(3) to give effect to
international commitments and to give the ONR a core role here.

199. We believe that a negative Resolution procedure is justifiable because of the precedents above (as well
as section 7(1) and (3) of the Northern Ireland Arms Decommissioning Act 1997). In addition, the powers are
narrow because, in the Department’s view, they could not be lawfully used to expand the ONR’s purposes beyond the security concerns listed in clause 51 which relate to nuclear materials nor to include non-nuclear materials.

Clause 52: Notice by Secretary of State to ONR specifying sensitive nuclear information

Powers conferred on: Secretary of State
Powers exercised by: Notice
Parliamentary procedure: None

200. Amongst the ONR’s purposes are its nuclear security purposes (see clause 51) which relates to, amongst other things, ensuring the security of sensitive nuclear information (see subsection (1)(f)). “Sensitive nuclear information” is principally defined in clause 51(3) as information relating to, or capable of use in connection with, the enrichment of uranium—ie the treatment of uranium that increases the proportion of isotope 235 contained in it (isotope 235 is fissile and can be used in the production of a nuclear weapon).

201. Clause 52 permits the Secretary of State, by notice to the ONR, to expand on the definition of “sensitive nuclear information” in connection with activities at or relating to nuclear premises and thus the purpose of the ONR in ensuring the security of such information. Similarly, a notice under clause 52 would result in the Secretary of State’s regulation-making powers in clause 55(1)(b) changing.

202. The power is intended principally to provide for flexibility—to enable the Secretary of State, and therefore in turn the ONR, to respond to new security threats quickly. However, the power can only be exercised where the Secretary of State considers information should be protected in the interests of national security (see subsection (1)). The Secretary of State must also consult the ONR before issuing such a notice; this is to ensure that the ONR’s civil nuclear security expertise is fed into any additional definition of sensitive nuclear information. Therefore, the powers are constrained and indeed relate to one aspect of the ONR’s responsibilities in the area of nuclear security. In the Department’s view the powers could only be lawfully used to deal with issues concerning information connected with nuclear premises and are therefore, relatively narrow in scope.

203. There is currently a regime for civil nuclear security found in Part 8 of the Anti-terrorism, Crime and Security Act 2001 and regulations made under section 77. That regime covers “sensitive nuclear information” which includes information (see section 77(7)) which the Secretary of State has concluded needs to be protected. The Department considers it prudent to, following this approach—ie creating a legislative system which permits the Secretary of State to decide what additional information needs protecting in the interests of nuclear security but which does not constrain that power by making it subject to a Parliamentary procedure.

Clause 54: Transport purposes

Powers conferred on: Secretary of State
Powers exercised by: Regulation
Parliamentary procedure: Negative Resolution

204. Clause 54 of the Bill defines the ONR’s transport purposes by reference to the risks of harm arising from the transport of radioactive materials and by reference to the need to ensure their security whilst transported. In turn “radioactive material” is defined in terms of its meaning in three international agreements relating to the carriage of dangerous goods and to which the UK is a party, see subsection (2). These agreements, covering road, rail and inland waterway and known in short as ADR/RID/AND, are as follows:

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- “ADN”: the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterway (signed at Geneva on 26 May 2000);
- “ADR”: Annexes A and B to the European Agreement concerning the International Carriage of Dangerous Goods by Road (signed at Geneva on 30 September 1957); and
- “RID”: the Annex to Appendix C to the Convention concerning International Carriage by Rail (signed at Berne on 9 May 1980) (the Regulation concerning the International Carriage of Dangerous Goods by Rail).

205. Clause 54(4) provides a power for the Secretary of State to amend the definition of “radioactive material” in subsection (2) by means of regulations, which would be subject to the Negative Resolution procedure.

206. The reason for this power is to provide for flexibility. The definition of “radioactive material” is linked to the three international agreements, referred to in paragraph 6, which are currently implemented in England, Wales and Scotland by the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009. It is not possible to foresee how these agreements might be amended or replaced in the future and therefore the power is intended to allow for regulations to take account of such developments. Regulations could amend the definition to take into account new agreements, or else to ensure that the definition does not replicate any amendments to existing agreements which are not appropriate for the ONR’s transport purposes.

207. It is the Department’s view that this power should be subject to a Negative Resolution procedure. We consider that this approach is appropriate for a variety of reasons. First, the power is inherently constrained
and would not permit regulations to be made expanding the ONR’s transport purposes to cover other modes of transport, for example, the carriage of radioactive material by air. Moreover, given the context of the power it would not, in the Department’s view, be lawfully used to confer functions on the ONR to cover materials that are not radioactive or which do not pose a risk or whose transport does not have security implications. Second, the international agreements in question have been given effect to by the 2009 Regulations referred to above which were made subject to the Negative Resolution procedure. The underlying motivation here is to give appropriate effect to such agreements where they relate to the transport of radioactive materials. Finally, the principal powers used to make the 2009 Regulations (sections 15 of and paragraph 3 of Schedule 3 to the Health and Safety at Work etc Act 1974) may be used to confer functions and create a system for the regulation of the transport of radioactive substances.

Chapter 2: Nuclear regulations

Overview

208. Chapter 2 confers power on the Secretary of State to make nuclear regulations. This power will enable flexibility in the regulation of the civil nuclear industry and to confer powers on the ONR to react effectively in an evolving area.

Clause 55: Nuclear regulations

powers conferred on: Secretary of State
powers exercised by: Regulations
parliamentary procedure: Negative Resolution except where amendments or repeals are made to the Nuclear Installations Act 1965, where the Affirmative Resolution procedure is required.

209. Clause 55 would confer on the Secretary of State the power to make regulations for any of the following purposes—nuclear safety, nuclear security, nuclear safeguards, and the transport purposes, as defined in clauses 49, 51, 53 and 54 respectively. These regulations are referred to in the Bill as “nuclear regulations”.

210. The clause, together with Schedule 4, elaborates on the types of provision that may be included in nuclear regulations. For example, regulations may make provision applying to acts outside the United Kingdom by a United Kingdom person (see subsection (7)(a)) such as imposing duties on UK nationals in relation to sensitive nuclear information when outside the UK, or in relation to UK ships carrying nuclear materials and operating anywhere in the world (see clause 51(1)(g)). Or in the case of schedule 4, provision may be made imposing requirements about training, document and record keeping, or necessitating that approvals must be sought and given before certain activities can be undertaken.

211. Criminal offences may be created under nuclear regulations, see subsection (5), but the power here is circumscribed in two ways. Purely indictable offences cannot be created under the regulations and the penalties which may be imposed under nuclear regulations for a conviction are curtailed.

212. There would also be civil liability for breaches of nuclear regulations, see clause 56, consistent with the position under section 47(2) of the Health and Safety at Work etc Act 1974 (“the 1974 Act”). Though nuclear regulations may provide for exceptions to that rule and for defences to be available (akin to section 47(3) of the 1974 Act), see subsection (3) of clause 56)

213. Subsection (10) and (11) require any nuclear regulations which contain provisions made exclusively for the safeguards or the security purposes, or exclusively for both, to include provisions to identify where this is the case. The reason for this is to provide for clarity in relation to those provisions in the Bill which do not apply in relation to provisions in nuclear regulations made only for the safeguards or security purposes. See, for example, the powers for inspectors to issue improvement or prohibition notices under Part 2 of Schedule 6 which are prescribed by paragraphs 3 (1) and (5) and 4(1) and (5) of that Schedule.

214. A person who wishes to appeal against an improvement or prohibition which they have been served with may do so within such period (after the notice has been given) as is set out in regulations made by the Secretary of State under this clause (see Schedule 6 paragraph 6(2)).

215. It should also be noted that clause 84 which contains provision about how notices are to be properly served, provides for the provisions contained in that clause to be subject to any provisions contained in regulations (see subsection (12)). Therefore nuclear regulations may, for example, if they impose requirements about notices needing to be served on ONR inspectors, derogate from the provisions in clause 84 to provide that such notices cannot be validly served at an inspector’s last known home address.

216. We consider that delegated powers are appropriate in this case because they enable regulations to be made to empower the ONR to act quickly and effectively in the areas covered by the purposes. In addition, it is not possible to predict how the nuclear landscape will change, even in the short term (for example the events in Fukushima could have caused significant regulatory upheaval). Also, the pace of change in technological developments is very high, as is the pace of change in the level of international understanding about how best to protect people from the effects of radiation arising from nuclear power stations. Much of the regulation
required here, to give effect to international obligations and provide for controls in the relevant areas, can be very detailed and technical.

217. We believe that there are precedents for this approach in relation to the purposes for which nuclear regulations can be made—and precedents which permit subordinate legislation to be made subject to the Negative Resolution procedure. For example, regulations may be made under section 15 of the Health and Safety at Work etc Act 1974 covering the subject matter of a number of the purposes here, for example the transport of radioactive materials (see paragraph 3 of Schedule 3 to that Act). Another example is section 77 of the Anti-Terrorism, Crime and Security Act 2001 which permits regulations to be made by the Secretary of State relating to civil nuclear security.

218. The clause does contain a Henry VIII power in subsection (4)(a) to modify certain provisions in the Nuclear Installations Act 1965 (sections 1, 3–6, 22 and 24A). This power is required because the Nuclear Installations Act provisions will be “relevant statutory provisions” enforced by the ONR under the Act. Therefore, these provisions may need to be amended, from time to time, to take into account developments in the nuclear regulatory landscape. It is important to emphasise that if it is used the regulations will subject to the Affirmative Resolution procedure (see clause 88(2)).

219. There is a precedent for such a power in the 1974 Act, which provided for regulations to be brought forward to replace provisions of a number of Acts to allow for the modernisation of health and safety legislation (see section 1(2) of the 1974 Act). Provisions of the Nuclear Installations Act 1965 were covered by this power, although regulations have never been brought forward to amend that Act and those provisions remain largely unchanged. Despite this, to allow for such modernisation, the power to amend that Act to bring in nuclear safety regulations is in the Department’s view clearly one which needs to be retained in the Bill.

Chapter 3: Office for Nuclear Regulation

Overview

220. Chapter 3 sets out how the ONR will be structured and explains how it will operate, including: the constitution of the ONR; how the organisation will report and be accountable for its activities and delivery of its objectives; and its financial arrangements.

Clause 58: The Office for Nuclear Regulation

Schedule 5: The Office for Nuclear Regulation, paragraph 26 Payments, grants and borrowing

Powers conferred on: Secretary of State
Powers exercised by: Order
Parliamentary procedure: Affirmative Resolution (in the House of Commons only)

221. Clause 58 establishes the ONR as a body corporate. Details about the constitution and related matters are set out in Schedule 5, The Office for Nuclear Regulation, which subsection (3) provides for.

222. Paragraph 26 of the Schedule includes arrangements for the ONR to borrow money. The Secretary of State may amend the amount (currently set at £35 million) by Order that the ONR can borrow, up to a limit of £80 million.

223. The level of detail required is not appropriate for primary legislation, and sufficient scrutiny of any proposal will be undertaken by means of an Affirmative Resolution procedure.

224. It is the Government’s view that the Affirmative procedure is appropriate because the clause is concerned with the amount of public money the ONR is able to borrow. However, we propose that it should be considered in the House of Commons only since it is a financial matter.

Chapter 4: Functions of the ONR

Overview

225. The provisions in this chapter enable the ONR to undertake all its functions. The functions reflect the various roles of the ONR; it is primarily the regulator of the civil nuclear industry in the areas set out in its purposes, but it also has a role in maintaining public trust in the regulation of the nuclear industry.

Clause 60: Codes of practice

Powers conferred on: Secretary of State consent required for the ONR to issue codes of practice
Powers exercised by: Code of Practice
Parliamentary procedure: none

226. This clause enables the ONR to issue, revise or withdraw codes of practice with regard to the relevant statutory provisions; section 7 of the Health and Safety at Work etc Act 1974, which covers general duties of employees at work, so far as it relates to the relevant statutory provisions; and health and safety regulations
made for nuclear site health and safety purposes. The ONR must consult any government department or person as directed by the Secretary of State or that it considers appropriate. It must then seek consent from the Secretary of State, or the Health and Safety Executive if the Code of Practice relates to health and safety regulations. The ONR must publish the Code of Practice, publish any revisions to it or publish a notice that a Code of Practice is being withdrawn.

227. We believe that having no parliamentary procedure is appropriate as codes of practice will be essentially technical documents based on the requirements of existing legislation. Furthermore the consent of the Secretary of State, who is answerable to Parliament, is required before the ONR can issue, amend or revoke a Code of Practice. There is precedent for this approach in section 16 of HSWA 1974.

Clause 63: Inspectors

Schedule 6: Appointment and powers of inspectors

Powers conferred on: Secretary of State
Powers exercised by: Regulations
Parliamentary procedure: Negative Resolution

228. Clause 63 of the Bill gives effect to Schedule 6 which is concerned with the appointment and powers of inspectors by the ONR to investigate and enforce the regulatory regime for which the ONR will become responsible. Amongst the evidence gathering powers which may be conferred on inspectors is the power to take samples, see paragraph 13(2). Paragraph 6(2) of Schedule 6 contains a power for the Secretary of State to prescribe by regulations the period within which a person may appeal an improvement or prohibition notice given under Schedule 6 to the Bill. Paragraph 13(3) of Schedule 6 contains a power for the Secretary of State to prescribe by regulations the procedure to be followed by inspectors when taking samples and how samples are to be dealt with.

229. Section 24(2) of the Health and Safety at Work etc. Act 1974 provides a precedent for the approach in paragraph 6(2) of Schedule 6 to the Bill—where it was considered appropriate to leave this detail to regulations and to subject such regulations to the Negative Resolution procedure (see section 82(3)(b) of the 1974 Act). Paragraph 6(2) of Schedule 6 to the Bill is a re-enactment of section 24(2) of the 1974 Act as it currently applies to the civil nuclear industry in relation to matters of nuclear safety. We believe that it remains appropriate for this detail to be left to secondary legislation as it provides flexibility for the future in determining the period within which such appeals should be brought.

230. Section 20(3) of the Health and Safety at Work Act 1974 provides a precedent for the approach in paragraph 13(3) of Schedule 6 to the Bill where it was thought appropriate to leave this detail to regulations and to subject such regulations to the Negative Resolution procedure (see section 82(3)(b) of the 1974 Act). This provision re-enacts, with some modifications, section 20(3) of the 1974 as it currently applies to the existing ONR. Modifications are made to reflect the transfer of additional functions to the statutory ONR that is proposed in the Bill.

231. We believe that it remains appropriate for the subject matter of these regulations to be left to secondary legislation because they may cover, for example, such detailed matters as marking samples, giving notices, taking records when samples are taken, or specifying that inspectors must follow certain steps when taking samples from specific types of materials.

Clause 65: Inquiries

Powers conferred on: Secretary of State
Powers exercised by: Regulations
Parliamentary procedure: Negative Resolution

232. Clause 65 confers powers on the ONR to hold an inquiry into any matter related to its purpose with the Secretary of State’s consent. Any such inquiry must be held in accordance with regulations made by the Secretary of State, with there being a requirement to hold the inquiry in public and to publish the report of the person holding the inquiry unless regulations specify otherwise, see subsection (3). Subsections (3), (4) and (5) confer the powers on the Secretary of State to make the necessary regulations which will be subject to the Negative Resolution procedure. For example, the regulations may confer powers on the person holding the inquiry (or any person assisting them) to require witnesses to attend and to enable them to enter premises to gather evidence and to take evidence under oath. Also, the regulation-making powers would enable the Secretary of State to derogate from the rule that a public inquiry should be held in public where the evidence being heard may raise implications relating to national security.

233. We consider that it is appropriate for there to be delegated powers here because the regulations are likely to contain detailed provision about the conduct of inquiries which is normally left to secondary legislation (see, for example, section 14(3) and (4) of the Health and Safety at Work Act 1974 and section 323 of the Town and Country Planning Act 1990—which in both cases are regulation-making powers which are subject to the Negative Resolution procedure).
234. Clause 65 re-enacts with modifications section 14 of the 1974 Act as it would apply to the Health and Safety Executive in its current role as regulator of the civil nuclear industry. Modifications are made to reflect the transfer of additional regulatory functions to the statutory ONR from the Secretary of State.

Clause 70: Provision of information or advice to relevant authorities

Powers conferred on: Secretary of State
Powers exercised by: Regulations
Parliamentary procedure: Negative procedure

235. Under this clause a duty is imposed on the ONR to provide certain information or advice if it is requested to do so by a Minister of the Crown, the Devolved Administrations, the Health and Safety Executive, the Health and Safety Executive for Northern Ireland, the Civil Aviation Authority or the Office of Rail Regulation (see subsections (1) and (8)).

236. The ONR may require a person to whom information is provided under subsection (2)(b) or advice is provided under subsection (4) to pay a fee in respect of the costs that were reasonably incurred by the ONR in providing the information or advice. The Secretary of State may by regulations provide that the requirement to pay such a fee will not apply in particular cases or classes of case or in particular circumstances.

237. It is the Government’s view that Parliamentary procedure should be aligned with the approach taken for clause 81 (fees and charges) which is Negative Resolution. This approach is also in line with the procedure in the Health and Safety at Work etc Act 1974 for fee making regulations (sections 43 and 82).

Clause 73: Directions from Secretary of State

Powers conferred on: Secretary of State
Powers exercised by: Direction
Parliamentary procedure: None

238. Clause 73 would provide three powers that would enable the Secretary of State to give directions to the ONR. The first power, which is in subsection (1), is a power of direction (either to give specific or general directions) that may be exercised for any purpose. However, the power here cannot be used to confer new functions on the ONR nor may it be used to direct the ONR in relation to the exercise of any regulator function in any particular case. An example of a direction under this subsection would be where, the Secretary of State directs the ONR to undertake a general review of the appropriateness and effectiveness of nuclear site licensing conditions.

239. The second power which is contained in subsection (3) is a power to make directions for the purpose of national security. Again whilst this cannot be used to direct the ONR in relation to regulatory functions in a particular case, it can be used to confer functions. For example, in the event of a significant release of pathogens from a research or manufacturing plant, Secretary of State might direct the ONR to contribute its expertise to the arrangements to deal with the risk to the UK.

240. Finally, the third direction-making power (subsection (6)) allows the Secretary of State to issue directions in a specific instance with regard to a regulatory function, if he or she is satisfied that there are exceptional circumstances relating to national security and only for nuclear security purposes. The Department considers that there is a need for the Secretary of State to have exceptional powers here in relation to regulatory functions because security is dependent on the State’s “risk appetite” and intelligence on risk levels which are largely Government-generated. For example, the power might be used if the Secretary of State received advice that security measures proposed by the ONR for a particular nuclear site were inconsistent with the Secretary of State’s view of the nature of the threat.

241. Any directions made under this clause must be laid before Parliament to facilitate transparency. This is subject to the exception where the Secretary of State considers that a direction under subsection (6) should not be made public for reasons of national security and in which case a memorandum reporting that a direction has been made and its date must be laid instead, see subsection (8).

242. We consider that the direction-making powers here may be legislative in nature because they enable ONR functions to be modified or new functions to be conferred. There is a precedent in this respect to be found in section 12(2) and (4) of the Health and Safety at Work Act 1974 which, in the Department’s view, permits for directions under 12(2)(b) to confer functions on the Health and Safety Executive.

243. We believe that the approach of not having any Parliamentary scrutiny in case of these direction-making powers is justifiable. Generally, direction-making powers are not made subject to Parliamentary approval, in part because they are often administrative in nature but also because they are very specific in their application. Therefore, we think that many of the powers here should not be contentious. Secondly, in the more unusual case of the direction-making powers to modify or confer functions, these may only be exercised under circumstances relating to national security (and are thus clearly circumscribed) and are to some extent required because the ONR will be a body corporate. In other words the ONR cannot do something unless it has express or necessarily implied powers to do it. Furthermore, in the fundamentally important area of national security,
it is important that neither the ONR nor the Secretary of State should be constrained in this respect to take appropriate action.

244. Finally, there is an argument about the suitability of all directions here being made subject to Parliamentary approval or subject to the Negative Resolution procedure. First, that may inevitably require publication of directions—which might not be right in all cases where there are national security implications. Secondly, a number of the powers relate to situations where there is a need for the executive to act quickly and decisively (specifically in the case of the powers in subsections (3) and (6)). Evidently, with the Affirmative Resolution procedure the time for debates needs to be arranged in advance (which may make it too late to deal with the national security issue) and in the case of the Negative Resolution procedure, whilst a direction may cease to have effect it is potentially likely that the situation that needed to be dealt with will have passed.

Clause 74: Compliance with nuclear safeguards obligations

Powers conferred on: Secretary of State
Powers exercised by: Notice
Parliamentary procedure: None

245. Clause 74(1) imposes on the ONR obligations to take such action, as it considers is best calculated, to ensure compliance by the United Kingdom with safeguards obligations and to facilitate compliance with these obligations by Ministers of the Crown.

246. “Safeguards obligations” are principally defined in the clause in relation to Articles 77 to 85 of the Euratom Treaty and two international agreements made in connection with the Treaty on the Non-Proliferation of Nuclear Weapons. The safeguard obligations provide confidence that states do not use nuclear material from civil nuclear programmes to manufacture nuclear weapons. The obligations require the UK Government to provide information to the International Atomic Energy Agency and the Euratom Community about nuclear material held within the UK and the use of technology linked with the processing or enrichment of nuclear material.

247. However, there are other existing safeguard obligations which it is intended that the ONR will take responsibility for ensuring compliance with. We do not think that it is necessarily desirable to list all these obligations on the face of the draft Bill having set out the principal obligations. Furthermore, there may be developments in safeguards obligations at either the European or international level as neither international nor European law is likely to remain static. Therefore, clause 74(2)(d) contains a power for the Secretary of State to expand on the duty in subsection (1) to ensure that the ONR has the ability and duty to facilitate the UK’s compliance with any new safeguards obligations, as well as those pre-existing obligations which are not listed on the face of the draft Bill.

248. As way of example, existing safeguard obligations that would be expected to be included within the initial notice, on creation of the ONR, might include the:


— Agreement of 24 July 1979 between the United Kingdom of Great Britain and Northern Ireland and the Government of Australia concerning Nuclear Transfers between the United Kingdom and Australia; and

— UK commitments under the International Atomic Energy Association (IAEA) Guidelines for the management of plutonium (1997).

249. New obligations that might be added to the definition of safeguards obligations in the future by notice could arise from a number of sources including; new co-operation agreements with other States; new agreements with the IAEA to safeguards guidelines or a new international treaty.

250. The power here is exercisable by notice to the ONR but only after consultation with it (see subsection (4)) and any notice must be published.

251. This approach broadly replicates the current arrangements for defining safeguards obligations whereby the Secretary of State notifies the interim ONR of the relevant safeguards obligations via a Memorandum of Understanding.

Clause 81: Fees

Powers conferred on: Secretary of State
Powers exercised by: Regulations
Parliamentary procedure: Negative

252. This is a new free standing power to make various cost recovery provisions in secondary legislation including, for instance, how the costs will be recovered and from whom. The majority of such costs are already recoverable through existing charging provisions including section 24A of the Nuclear Installations Act 1965. The power enables the ONR, in accordance with regulations made for this purpose by the Secretary of State, to recover fees for or in connection with the performance of its functions, as well as to recover charges in
respect of those expenses which are not recoverable under other enactments relating to fees or charges. These other provisions include provisions of the draft Bill itself that enable the ONR to recover some of its costs directly, as well as existing provisions such as the Nuclear Installations Act and regulations made under section 43 of the Health and Safety at Work etc. Act 1974.

253. The intention is that where possible the fees should be charged to particular duty holders, including nuclear site licensees, in connection with whom the relevant costs are incurred. Where it is not possible to link expenses directly to work done for particular duty holders then the intention is that these costs will be apportioned in a fair manner between the various groups of people to be regulated by the ONR. It is the intention that expenses which are recoverable under other existing fees and charges provisions will not be recoverable under regulations made under subsection (2) of this clause.

254. Specified categories of person, in particular employees, will be exempt from fees and charges under the legislation. The detail required for the fees legislation is such that it is more suitable for inclusion in secondary rather than primary legislation. In addition secondary legislation provides the Government with flexibility to amend the regulations should it be required to reflect the rapidly evolving nature of the nuclear industry. The ONR must carry out consultation before submitting proposals for regulations under clause 81 to the Secretary of State (clause 61(3)).

255. We believe that it is appropriate for this clause to be under a Negative procedure in order to be aligned with the procedure for fees regulations in the Health and Safety at Work etc Act 1974 (sections 43 and 82).

Chapter 5: Supplementary

Overview

256. This chapter covers a range of diverse areas not included in the previous chapters. These include staff and property transfers, offences and minor and consequential amendments.

Clause 86: Crown application: Part 2

Powers conferred on: Secretary of State
Powers exercised by: Order
Parliamentary procedure: None

257. This clause provides that Part 2 of the draft Bill applies to the Crown with certain exceptions set out in the clause. It also makes provision for the Secretary of State to exempt the Crown, by Order, from any provisions in Part 2 that would otherwise bind the Crown—see subsection (5). Therefore, for example, inspectors powers of entry may be curtailed in relation to Crown property.

258. The Order-making power is not subject to either the Affirmative Resolution procedure or the Negative Resolution procedure, consistent with the position under section 48(4) and (5) of the Health and Safety at Work etc Act 1974.

259. As a general rule an Act will not bind the Crown unless express provision is made to that effect or it can be necessarily implied from the terms of the Act. Clause 86 would reverse this normal rule and the power, therefore, is considered desirable to ensure flexibility where it would be inappropriate for the Crown to be bound.

Clause 88: Subordinate legislation under this Part

Powers conferred on: Secretary of State
Powers exercised by: Statutory Instrument
Parliamentary Procedure: Affirmative Resolution for any regulations under section 55 which amend or repeal any provision of the Nuclear Installations Act 1965 or an Order under paragraph 26 of Schedule 5 (payments and borrowing). An instrument containing any other subordinate legislation under this Part, other than an Order under section 86(5) (Crown application), is subject to annulment in pursuance of a Resolution of either House of Parliament.

260. This clause makes clear that any power to make subordinate legislation under Part 2 of the draft Bill includes the power: to make different provision for different cases; to make provision for some cases only or subject to exceptions; and to make provision generally or only in particular respects. Subordinate legislation made under this Part may include consequential, incidental and supplementary provision, as well as transitional, transitory and savings provisions.
Clause 89: Transitional provision etc

Powers conferred on: Secretary of State
Powers exercised by: Order
Parliamentary procedure: Negative Resolution

261. Clause 89 enables the Secretary of State to, by Order, make such transitional, transitory and savings provisions as appear appropriate in consequence of the provisions of Part 2 of the draft Bill. This power is considered necessary to enable a smooth transition of the regulatory powers from the Health and Safety Executive and the Secretary of State to the ONR. The level of detail likely to be required which will primarily be about the mechanics of the transfer of the regulation functions is not appropriate for primary legislation. In addition, this power contains a power to modify any provision of primary legislation passed before the end of the session in which the Bill is passed or an instrument made before the end of the session. It would not be practical to make such amendments on the face of the Bill.

262. An Order made under this provision will be subject to the Negative Resolution procedure. This is considered to be sufficient for Orders giving effect to the substantive change in identity of the regulator for the civil nuclear industry as set out in the draft Bill.

Clause 90: Transfer of staff etc and Schedule 8

Powers conferred on: Secretary of State
Powers exercised by: Statutory Instrument
Parliamentary procedure: Negative Resolution

263. This makes provision for the transfer of staff and property to the ONR by introducing schedule 8—Transfers to the ONR. The Schedule states which staff or property a transfer scheme can apply to and the matters which may be included in such schemes. Any such scheme will be made by Order by the Secretary of State.

264. The work required to transfer the ONR from an agency model to a separate statutory corporation is such that the commencement of the relevant provisions of the draft Bill are likely to be phased. As a consequence, the powers in Schedule 8 are sufficient to enable the Secretary of State to make more than one transfer scheme and to make any amendments he or she considers appropriate to any existing Order made under those powers. The Secretary of State will be required to carry out consultation before making any Order under Schedule 8. The persons to be consulted are those who appear to the Secretary of State to be likely to be affected by the making of scheme or appearing to the Secretary of State to represent such persons.

265. An Order made under Schedule 8 will be subject to the Negative Resolution procedure. It is considered that the detailed provision dealing with the mechanics of the transfer of staff from the Health and Safety Executive to the ONR and the transfer of property from the HSE and the Secretary of State to the ONR would most appropriately be dealt with in secondary legislation. As the Secretary of State must consult those likely to be affected by the scheme or their representatives before making any Order under this provision, the Negative Resolution procedure is considered to be sufficient.

Clause 91: Minor and consequential amendments

Powers conferred on: Secretary of State
Powers exercised by: Regulations Order in Council
Parliamentary procedure: Negative Resolution

266. This clause introduces the minor and consequential amendments to primary legislation which are set out in Schedule 9 (minor and consequential amendments related to Part 2). It also enables the Secretary of State to make further modifications, by Order, to existing legislation, either primary or secondary, that are required to give full effect to the provisions of Part 2 of the Bill. Primary legislation is defined for these purposes in clause 87.

267. It is anticipated that most of the amendments required to be made to primary legislation in consequence of the creation of the ONR will be made on the face of the Bill. However in the event that any further amendments to primary legislation are subsequently identified, the Secretary of State has the power to make consequential amendments to primary legislation. The creation of the statutory ONR will also require a substantial number of changes to be made to secondary legislation and consequently it is more appropriate for them to be dealt with through secondary legislation, rather than on the face of the draft Bill.

268. As the changes made by an Order under clause 91 will be to give effect to the Bill and will for the most part contain detailed amendments to secondary legislation it is considered that the Negative Resolution procedure is sufficient.
Clause 92: Application of Part 2

Powers conferred on: Her Majesty
Powers exercised by: Order in Council
Parliamentary procedure: Negative Resolution

269. This clause provide that Her Majesty may, by Order in Council, extend the application of Part 2 of the draft Bill outside the United Kingdom.

270. Orders in Council are commonly used to extend United Kingdom legislation to Crown territories outside the United Kingdom (such as the Channel Islands and the Isles of Man). For example, section 28 of the Nuclear Installations Act 1965. In addition, section 84 of HSWA contains a power to extend the application of certain provisions of that Act to persons premises and other matters outside Great Britain as they apply within Great Britain or a specified part of Great Britain.

271. The power gives flexibility to extend the application of Part 2 to ensure that the provisions of this Part apply to persons, premises, activities, articles, substance or other matters outside the UK just as they would if they were within the UK. It is the Government's view that the appropriate procedure for this power is the Negative Resolution procedure. Section 84 of HSWA provides for Orders in Council made under that provision to be subject to that procedure. As the power in clause 92 is equivalent to that in section 84 of HSWA it is considered appropriate to follow the same procedure.

PART 3—GOVERNMENT PIPE-LINE AND STORAGE SYSTEM

272. The draft Energy Bill proposes provisions to allow the sale of a Ministry of Defence (MOD) held asset that supplies aviation fuel to military airbases in the UK, as well as a number of civilian airports. The MOD has previously reviewed the pipeline and concluded that it does not need to be owned by the Government. Legislation is required to create a set of transferable rights necessary to operate the GPSS and remove restrictions on developing the system for greater commercial usage unless there is an underlying defence requirement. The power to make an Order conferred by Clause 103 is exercisable by statutory instrument.

Clause 103: Power to dissolve the Oil and Pipelines Agency by Order

Power conferred on: The Secretary of State
Power exercisable by: Order by Statutory Instrument
Parliamentary procedure: Negative Resolution

273. Clause 99 provides that the Secretary of State may transfer the Government pipe-line and storage system. The system consists of around 2,500 kilometres of cross-country pipelines of differing diameters, together with storage depots, associated pumping stations, receipt and delivery facilities and other ancillary equipment. The system receives, stores, transports and delivers light oil petroleum products for military and civil users. The Oil and Pipelines Agency is a statutory corporation set up for the purposes of exercising and performing functions assigned to it by the Oil and Pipelines Act 1985 (c.62). One of the main functions of the Agency is the management of the system.

274. Given that Clause 99 provides that the Secretary of State may transfer the system, subsection (1) of Clause 103 provides that the Secretary of State may provide by Order for the repeal of the Oil and Pipelines Act 1985 and the dissolution of the Agency. Subsection (2) provides that if the Agency is dissolved under subsection (1), the Secretary of State may by Order make a “transfer scheme” for the transfer to the Secretary of State of property, rights and liabilities. Subsection (3) provides that Schedule 10 makes further provision about any transfer scheme contained in an Order under subsection (2). Paragraph 1 of the Schedule provides that the things that may be transferred under a transfer scheme include certain property. Paragraph 2 provides that a transfer scheme may make consequential, supplementary, incidental or transitional provision and may, in particular, may certain kinds of provision. Paragraph 3 provides that a transfer scheme may provide for its modification. Subsection (4) provides that an Order under subsection (2) may make different provision for different cases or circumstances or for different purposes.

275. These matters are to be dealt with in delegated legislation so that if the system is transferred and the Agency is considered, by the Secretary of State, to have no remaining function the Act can be dissolved and the Act that created it can be repealed. If the system is transferred, detailed provision will also be able to be made for the consequential transfer to the Secretary of State of property, rights and liabilities of the Agency. It has not yet been decided if or when the whole, or part, of the system will be transferred or what the effect on the Agency will be. Therefore, it would be inappropriate to provide for the repeal of the Oil and Pipelines Act 1985 and the dissolution of the Agency in the draft Bill itself. Dealing with these matters in delegated legislation will also allow appropriate provision relating to the transfer of property, rights and liabilities to be made at a level of detail that would be inappropriate for inclusion in the draft Bill.

276. The Government considers it appropriate that an Order under Clause 103 should, unlike the Order made under section 3(5) of the Oil and Pipelines Act 1985 for the dissolution of the Agency’s predecessor—the British National Oil Corporation—for which there was no procedure, be made by statutory instrument subject
to the Negative Resolution procedure. This is because an Order under Clause 103 may contain a transfer scheme and Parliament should have the opportunity to scrutinise such a scheme.

PART 4—MISCELLANEOUS AND GENERAL

Offshore Transmission


Clause 108(1) and (4): Commencement

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278. This Clause contains a standard power to bring certain provisions of the Bill into force by commencement Order. By virtue of subsection (4), an Order can make different provision for different purposes and can make transitional provision and savings.

279. Consistent with the usual practice, commencement Orders under this Clause are not subject to any Parliamentary procedure. Parliament will have approved the principle of the provisions in the Bill by enacting them; commencement by Order enables the provisions to be brought into force at a convenient time.
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<td><strong>Chapter 6—The Renewables Obligation: Transitional Arrangements</strong></td>
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<td>36(5)(a)</td>
<td>Duty not to exceed annual carbon dioxide emissions limit</td>
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<td>36(5)(b)</td>
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<td>36(5)(c)</td>
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<td><strong>Chapter 8—Strategy and Policy Statement</strong></td>
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<td>Designation of statement</td>
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<td>Reporting requirements</td>
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<td><strong>PART 2—Nuclear Regulation</strong></td>
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<td>Transport purposes</td>
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<td><strong>Chapter 2—Nuclear Regulations</strong></td>
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<td>POWER EXERCISEABLE BY</td>
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<td>55</td>
<td>Nuclear regulations</td>
<td>Secretary of State</td>
<td>Regulations</td>
<td>Negative resolution except where amendments or repeals are made to the Nuclear Installations Act 1965 where the Affirmative Resolution procedure is required</td>
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<td>63</td>
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<td>Compliance with nuclear safeguards obligations</td>
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<td>None</td>
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<td>88</td>
<td>Subordinate legislation under this Part</td>
<td>Secretary of State Statutory Instrument</td>
<td>Order Instrument</td>
<td>Affirmative Resolution for any regulations under section 55 which amend or repeal any provision of the Nuclear Installations Act 1965 or an Order under paragraph 26 of Schedule 5 (payments and borrowing). An instrument containing any other subordinate legislation under this Part, other than an Order under section 86(5) (Crown application), is subject to annulment in pursuance of a Resolution of either House of Parliament</td>
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<td>89</td>
<td>Transitional provisions etc</td>
<td>Secretary of State Order</td>
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<td>91</td>
<td>Minor and consequential amendments</td>
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<td>Regulations Order in Council</td>
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<td>92</td>
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**PART 3—Government Pipe-line and Storage System**
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<td>Schedule 5</td>
<td>The Renewables Obligation: certificate purchase scheme</td>
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<td>Order</td>
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<td>The Office for Nuclear Regulation (para. 26—Payments, grants and borrowing)</td>
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<td>Order</td>
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