



MAINSTREAM
RENEWABLE
POWER

Response to the UK Government
Consultation on EMR

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1 Foreword

Mainstream Renewable Power is a leading renewable energy company developing renewable energy projects across several continents, including Europe, Africa, and both North and South America. The Company expects to be a major provider of renewable capacity for the UK and has a development pipeline in excess of 5,000MW.

In the UK, we are developing two large offshore wind projects. In Scottish territorial waters we are developing the 450 MW Neart Na Gaoithe project. Through the SMart Wind consortium, we are developing the 4000MW Hornsea Round 3 zone with our partners, Siemens Project Ventures.

In doing so, we will be attracting new sources of finance, encouraging new entrants to broaden and deepen the supply chain, and pursuing innovation at all levels to lower the cost of offshore wind. We are concerned that some of the proposals contained in EMR, if implemented, may militate against these goals. We provide below our response to the Consultation, together with detailed answers to the Consultation questions.

Mainstream Renewable Power supports the Government's objective to decarbonise electricity generation in the UK. We believe that the current market arrangements will not facilitate the required rate of decarbonisation to deliver the UK's 2050 ambitions, nor enable the UK to fully exploit its offshore renewable energy assets over this period.¹ We agree that the incentives to invest in low carbon generation need to be strengthened, as do instruments to ensure that high carbon energy sources are not "locked in" to the energy mix, as the UK pursues measures intended to accelerate the transition to a low carbon energy sector.

The investment challenge for the UK electricity industry is the highest it has ever been, with both generation and transmission assets requiring renewal on an unprecedented scale. This represents a singular opportunity for the UK. With the appropriate suite of market reforms, skilfully delivered, not only will our ambitions for low carbon generation and the networks to support it be realised efficiently, but the consequent multiplication of investment benefit through additional high quality industrial activity, skills and jobs will provide a continuing benefit to the economy.

That is why it is important that the reforms are the right ones to bring about this necessary transformation; and have the broad support of both industry stakeholders and those parties who will provide the finance to enable the realisation of the vision. The confidence to provide this support will be underpinned by reform proposals which are clear, detailed and widely accepted, together with an implementation/transition plan which charts a low risk path from where we are now, to where we need to be. It is imperative that reforms are robust and enduring, to avoid the necessity of further near term revision and the accompanying damage this would cause to investor confidence.

¹ Which could exceed the electricity equivalent of 1bn barrels of oil a year by 2050: *The Offshore Valuation* (2010) DECC and ors

Any proposed reforms must be based on the fundamental objective of promoting confidence, in order to ensure that there is not a damaging hiatus, or permanent diversion of investment away from the UK energy sector. It is vital that investment in renewables is seen as an increasingly attractive opportunity by all stakeholders involved in the sector. We look to the government to continue the constructive process of engagement as the Energy Market Reform (EMR) initiative moves to the next stage of development.

We are particularly concerned that the preferred CfD mechanism presented in the EMR effectively removes capacity from exposure to the market and relies instead on central direction, with its attendant need for “perfect foresight” and constant corrections as events unfold. Further, by removing a significant proportion of capacity from the market, the fundamental operation of the *residual* competitive, liberalised market is inevitably compromised and distorted.

There is value in recognising the importance of avoiding or minimising regulatory change where possible, and in particular, the impacts any changes could have upon investment signals and the confidence of a highly competitive investment market. Any changes should only be made where there is clear and demonstrable benefit to reaching government priorities.

In order to assess the suitability of the proposed reforms, we have applied the following criteria, which are vital if offshore wind is to continue its contribution to the UK’s energy and climate change objectives:

- ☐ **Protection of existing projects, and of projects already in the pre-commissioning pipeline**
- ☐ **Certainty and stability prior to the implementation and development phases of any reforms and through to continuing operation**
- ☐ **A seamless transition from the current support arrangements to ensure that there is no hiatus in investment**
- ☐ **Appropriate allocation of risk between stakeholders including Government, on a “best ability to bear” basis**
- ☐ **Intervention by government only in areas which have proven intractable to other solutions**
- ☐ **The ability for investors to map out clear and robust investment cases for projects, based on confidence in the future regulatory and policy environment and the minimisation of uncertainty – effectively closing the gap between investment requirements and revenue uncertainty**
- ☐ **A clear route to market for low carbon generation at the initiation of development**

2 Executive Summary

The purpose of reform is to *accelerate* deployment by de-risking renewables and other low carbon generation investment and provide strong new incentives for the massive additional sources of capital required to deliver our ambitions and provide value for the consumer.

Any reformed arrangements must, *as a minimum*, be at least as effective as the current ones, in order to allow this objective to be achieved.

We have measured the proposals in the Consultation against these core requirements and conclude that without further refinement, they will not deliver the intended outcomes that both Government and Industry are seeking. As they stand, the proposals do not provide sufficient clarity and confidence in outcomes for investors to proceed.

We consider that the proposals detailed in the EMR package should be taken as the starting point for further engagement with the energy industry. While elements of the package have merit, the mechanics of implementation and the extensive detail necessary to underpin the reforms will need to be the subject of considerable further work before industry is in a position to endorse the reforms as being capable of delivering the stated objectives.

We believe that there are elements which are compatible with the criteria we set out above but that, with suitable amendment, the government's suite of options will have a much higher probability of delivering the intended outcome and will minimize the risk of unintended consequences. We are concerned that without modification the reforms may act to deter investment.

We set out below our preferred reform package which includes:

- ☐ ***Appropriate use of the Carbon Price support initiative***
- ☐ ***A Premium FiT mechanism for providing support***
- ☐ ***A Low Carbon Obligation on suppliers***
- ☐ ***Reform of the balancing mechanism and short term markets to allow more effective solutions to the incorporation of variable low carbon generation***
- ☐ ***Enhanced incentives for reserve/backup capacity and the pursuit of increased continental interconnection, based on market facing initiatives, rather than premature administered capacity solutions***
- ☐ ***An emissions performance standard at a level which allows and incentivises opportunities for reserve/backup capacity, but which does not encourage another "dash for gas" which locks in a high carbon generation mix for the next 30-40 years***
- ☐ ***A transition process which adequately protects existing investment and provides the necessary confidence for industry to continue its expansion as we move forward to operation under the reformed arrangements***

2.1 The Overriding Need to Accelerate Investment

A primary objective of the reform package is the requirement to attract significant additional sources of capital into the offshore wind sector to meet our renewable and low carbon ambitions, at the most efficient cost, to both consumer and developer.

In preparing our response, we have used this objective, together with the criteria detailed above, to assess the proposals in the EMR consultation. The UK is competing with other investment opportunities for limited pools of capital. The hurdle rates used in the analysis do not adequately reflect this competitive pressure. We are concerned that these optimistic assumptions will form a key part of the processes for setting the parameters of any support mechanism, under the revised arrangements. This in turn will lead to inadequate incentives and shortfalls in delivery.

2.2 The Importance of Seamless Transition

It is essential that projects have a smooth transition from the Renewables Obligation (RO) to the new support mechanism, with a real choice between the RO and the reformed arrangements for an appropriate period of time. This will need to ensure that the lead times for projects are taken into account when determining eligibility for the new arrangements. The proposed accreditation deadline of 2017 is incompatible with this objective and effectively introduces a guillotine, whereby projects in development will be deprived of the RO but have no guarantee of the level or shape of the replacement FiT. This presents an unacceptable risk and will lead to a hiatus in investment unless addressed. We believe that the accreditation deadline should be moved to 2020, with an accompanying extension to the RO until 2040. Failing this, projects should be allowed to qualify for RO support based upon a revised set of parameters, which can be met at an earlier part of the development process, ahead of the 2017 date.

There is a need to provide indicative tariffs for the revised support arrangements as early as possible in the process. Our view is that these need to be published by Q1 2012 in order to allow an ordered transition to commence.

The arrangements for protecting investments made under the RO need to be robust and detailed as early as possible. Grandfathering/vintaging arrangements need to properly account for the long term structural changes in the wholesale price profile and possible capacity incentives post-EMR implementation, as these will have a major impact upon the revenues of renewables projects.

2.3 Market Distortions and Centralised Direction

The potential introduction of a CfD mechanism and targeted capacity mechanism represent a significant degree of centralised control over the electricity market. This in turn would increase policy risk, diminish the ability of the residual market to provide efficient and effective

investment/operational signals and undermine the scope for innovation and competitive differentiation within the low carbon sector.

2.4 Enduring Barriers to Investment

We are concerned that the reforms concentrate primarily on operational mechanisms, and neglect the need to reduce the considerable barriers to investment and project development in the sector. Given the need to attract significant additional capital into the development process, we are concerned that any proposals will not be able to achieve their desired effect due to a reform process which does not address the complete suite of issues.

2.5 The Unsuitability of Auctions

We consider that auctions are incompatible with the objectives of the EMR initiative and would act to introduce further risks, uncertainty and barriers to investment.

2.6 Benefits of Market Facing Support Arrangements coupled with Supplier Incentives

The renewables sector has delivered substantial benefits for the UK. As the electricity market moves towards full decarbonisation and the maturity of operation according to a different paradigm, we would expect the need for both additional support and “market pull” to decline. At that point we would also expect fossil fuelled generation to face the full cost implications of currently excluded externalities, including overall process carbon costs and appropriate emission levels for other pollutants.

However, we are unlikely to be in that situation for some time and as such it is imperative that a Supplier Obligation mechanism is retained within the market arrangements; to ensure that suppliers are appropriately incentivised to provide a viable route to market for renewable and other low carbon generation.

2.7 A Robust and Considered Approach to Backup and Reserve

We agree that the provision of appropriate backup and reserve capacity is important. However, the case for capacity mechanisms, of the type outlined under the EMR reform proposals, has not been made. The options examined appear to be fundamental interventions into the operation of the market, which will necessarily change its characteristics in ways which have not been mapped out or fully understood. A great deal more work is required in this area prior to such fundamental choices being made. We believe that there is further scope to provide the required services through market based solutions and increased interconnection, particularly via the proposed SuperGrid. We would also wish the results of both National Grid’s fundamental reviews of reserve requirements and the GB SQSS to be available, prior to further policy initiatives in this area.

We set out below our analysis of the proposals, together with our own preferred suite of reforms, which we believe will provide the necessary confidence, facilitate the smooth transition to the new regime and deliver the objective that Government and Industry seeks; namely, the most effective and economic transition to a decarbonised electricity market.

3 Analysis of Proposals

3.1 Carbon Price Support

We support the introduction of the Carbon Price support initiative. The challenge is to ensure that it delivers the intended result. There will be a need for close and continuing dialogue between DECC and Treasury as to ongoing implementation, to ensure that its primary function continues to be support of energy market objectives. In particular, we note the possibility of unintended consequences, where if GB power prices were to rise to levels determined by unilateral action, there may be perverse incentives to import **high carbon** power from our European partners, via the increased interconnection capacity - primarily planned to reduce carbon intensity.

3.2 Low Carbon Support – Premium FiT or CfD

We consider that with the reforms to the RO, it now represents an effective and well understood means of providing necessary support to renewable generation. However, we recognise the government's intention to widen support to a range of low carbon technologies and the consequent need for reform. Given the many uncertainties which will continue to surround the proposed FiT with CfD support option, we favour, in principle, the introduction of a premium FiT. This too, requires considerable further work to provide the details which industry needs prior to final endorsement. A key variable which needs to be addressed is the impact of market reform itself on the trajectory of long term power prices.

An essential element to ensure success of any revised arrangement is the need to retain the element of obligation on suppliers. This should be in the form of a **Low Carbon Obligation**. We detail later how this would operate in practice, building on the operational experience of the RO and retaining appropriate elements of its framework, thereby promoting confidence in the transition from one mechanism to another.

One of the key design objectives of the RO was to ensure that renewable capacity was exposed to market dynamics and signals, and could respond appropriately and effectively to them. This has been a cornerstone of its success to date and continues to allow appropriate support to be efficiently integrated with market disciplines. It is important that any revised low carbon support scheme retains this objective, as far as possible.

A CfD mechanism effectively removes capacity from exposure to the market and relies instead on central direction, with its attendant need for "perfect foresight" and constant corrections as events unfold. Further, by removing a significant proportion of capacity from the market, the fundamental operation of the *residual* competitive, liberalised market is compromised and distorted.

The introduction of a CfD mechanism would have a number of undesirable outcomes:

- *Increase in financing and transaction costs* - CfDs would require substantial contracting, payment and cost-recovery systems which would involve both high setup and running costs. The CfD mechanism will place additional, uncertain liabilities on a generator's balance sheet over the lifetime of the project, including the requirement to meet the increased working capital requirements as a result of negative difference payments. These liabilities will remain difficult to forecast, particularly for non portfolio generators without a comprehensive trading capability. This has a detrimental impact on financeability and will further increase the risk that generators are exposed to. This, in turn, will lead to an increase in financing costs, potentially to the point where investments are no longer viable
- *Reduction of market learning benefits and increased risk premia* - CfDs effectively require the government to determine prices, based on necessarily imperfect and soon-to-be out of date information, no matter how much effort is put into the process. Once set, these parameters are unable to respond to general market dynamics and additional new information in the way that a market based process can. In particular, the scope for the market to 'self-correct' for general movements in construction costs over time would be removed. This will necessarily require the inclusion of additional risk premia, raising costs to consumers
- *Basis risk* - under the CfD variable output generators are exposed to basis risk in terms of the difference between the index used to determine CfD payments and the market into which they sell their power. Basis risk is a significant factor in the current market, but only affects the energy element of the price, not the support element [under the RO]. With a CfD regime, basis risk would affect both the energy and support elements of a generators income. Basis risk is inherent in the market arrangements and is forecast to increase significantly with the rise in wind generation.
- *Offtake risk* - the CfD as proposed carries no obligation on suppliers to purchase output from renewable sources. An obligation is necessary to provide a clear route to market for low carbon generation and ensure the necessary "pull" from suppliers. The RO has also been successful in incentivising all of the major UK suppliers into the offshore wind sector. The presence of large established utilities has given confidence to the wider supply chain that they can commit to the necessary significant investments to supply the offshore wind industry. In order to retain these fundamental enablers, any new support scheme must retain an obligation on suppliers.
- *Liquidity* - for a CfD to meet the needs of renewable generators its price index must be based on a liquid spot market that renewable generators can freely and fully access. This is not currently the case. The EMR Consultation is silent on how the necessary degree of liquidity, in terms of range of products, depth of market and tenor can be achieved. The Ofgem work on liquidity is incomplete and unlikely to suggest the radical reforms necessary to deliver an acceptable outcome. This is a fundamental issue and we believe that only radical reform of the current market trading arrangements has the possibility of delivering the necessary liquidity. The EMR does not address this.

- *Level playing field* – FiT with CfD based support, as presented in the Consultation, cannot provide a level playing field for variable generation relative to other low carbon technologies where the output profile may be more compatible with the application of a CfD. We believe that a CfD cannot be made to work equitably for ALL low carbon generation technologies without the wide ranging and fundamental reforms referred to above.

Of the options presented in the Consultation, we believe a Premium FiT provides the least uncertainty for renewable generators; would allow a seamless transition from the current support mechanism under the RO; and will provide the least disruption to current and planned investments.

3.3 A Low Carbon Obligation

The draft reforms propose to remove suppliers' obligation to contract for renewable electricity. This undermines the strategy of utilities that have supported Government policy in pursuing renewable development as well as weakening competition in the renewable energy market. The power purchase agreement (PPA) market is primarily determined by the demand from utilities. If suppliers no longer have an obligation or target to purchase renewable electricity then they will naturally be less inclined to contract. Without an Obligation, the PPA market will become distressed, with higher discounts applied to PPA terms. This loss of revenue is likely to significantly offset any notional gains from a reduction in hurdle rates and will increase the overall cost to the consumer. In order to avoid the introduction of significantly increased off-take risk [and the associated additional risk premium] the Supplier Obligation should be retained and transformed into a Low Carbon Obligation.

3.4 Auctions

We do not support the use of auctions in any form, in the EMR proposals. Auctions inherently assume that there is a surplus of potential capacity, thus generating a competitive tension and seeking to identify the most "cost effective" tranche. This is not the challenge before us. There is currently not enough capacity in existence, or crucially, firmly committed in the near future, to meet our needs. We therefore require a system which provides longer term incentives for the development of additional, more economic capacity, rather than "snapshot" contests between current, limited resources. Auctions by their nature are unpredictable and provide no basis for longer term investment decisions and accompanying cost reduction.

The auction structures mentioned in the Consultation will not lead to reliable price discovery. In competitive market segments there will be a tendency to bid over-enthusiastically, impairing project delivery, while in less competitive markets there is the potential to abuse market power.

UK experience with the Non Fossil Fuel Obligation is likely to be repeated, but with undesirable outcomes an order of magnitude significantly greater than previously experienced.

A simple, all inclusive auction approach is incapable of dealing effectively with the fundamentally different financing, operational and investment characteristics of different low carbon

technologies, whilst the penalty for non-delivery is incompatible with the UK's protracted planning and grid development regimes. It would also act to significantly increase the risk adjusted development cost. The process would constitute a substantive additional barrier to entry for the new market players required to deliver the UK's low carbon capacity.

An auction system cannot be implemented without increasing risk and uncertainty. It has the capacity to undermine the industry's ability to deliver the Government's low carbon and renewable objectives.

3.5 Capacity Payments

The case for capacity mechanisms, of the type outlined under the EMR reform proposals has not been made. The options examined appear to be fundamental interventions into the operation of the market, which will necessarily change its characteristics in ways which have not been mapped out or fully understood. The objective is to ensure that the whole electricity system can be operated efficiently and effectively with an increased penetration of low carbon generation. Administered capacity mechanisms are but one of a range of initiatives which could achieve this objective. Others include enhanced objectives on the system operator with regard to reserve and backup provision, the establishment of an effective reserve market and reform of the balancing mechanism itself. Before taking such a fundamental step as establishing an administered capacity mechanism, further work is necessary to ensure that the optimum suite of measures has been explored. National Grid should be supported in its present fundamental review of future reserve options and the scope broadened to ensure that a comprehensive stakeholder engagement can be conducted when the results are available. Another element essential to the derivation of appropriate solutions is the long awaited Review of the GB SQSS. The provision of these two pieces of work will provide the opportunity to address capacity issues in an informed and integrated manner. Whilst we concur that the provision of adequate backup and reserve capacity is a central issue, we have the opportunity to subject it to due consideration, prior to making fundamental decisions which will affect the underlying operation of the energy market itself.

3.6 Transition

We support giving projects the choice between the RO and FiT based support, for a transitional period; however, we are concerned that the long lead time associated with large-scale projects means that an accreditation deadline of 2017 may, in practice, result in no choice at all. The lack of a properly designed, smooth transition to a new and untested support mechanism has the high probability of engendering a significant hiatus in investment. Whatever approach is adopted, 'vintaging' arrangements must properly address wholesale price and capacity payment changes post-EMR, as these will have a major impact upon the revenues of renewable projects. The principles of the transition must be to protect existing RO investments and prevent a hiatus in renewables deployment.

We believe that the accreditation deadline should be moved to 2020, with an accompanying extension to the RO until 2040. Failing this, projects should be allowed to qualify for RO support

based upon a revised set of parameters, which can be met at an earlier part of the development process, ahead of the 2017 date.

This will ensure key renewable projects, such as the third offshore wind leasing round, are not adversely affected. The schedules for Round 3 projects are likely to mean that accreditation onto a revenue support scheme would occur close to 2017. This would put Round 3 projects in a position where they are too late to access the terms of the Renewables Obligation, but faced with the uncertainty of both terms and operational experience of the new regime.

3.7 Emissions Performance Standard

We recognise the need to introduce an emissions performance standard, in order to ensure that new unabated coal plant is prevented from entering the generation mix. The proposed level of the EPS appears to place no additional requirements on new gas fired plant, over and above those currently in operation. Gas is likely to remain the marginal fuel and the fuel of choice for new capacity, for some time to come. The EMR proposals are silent on the role and volume of gas fired generation in the future energy mix. Our concerns centre on the potential for a significant development programme of gas fired generation – a new “dash for gas” - which effectively both limits the potential deployment of low carbon technologies and locks the UK into a higher carbon electricity mix which is incompatible with our energy and climate change objectives. In assessing the next steps for EMR, it would be helpful for the industry to understand the government’s views on the preferred path of future gas fired generation deployment.

3.8 Cost of Capital

The UK is competing with other investment opportunities for limited pools of capital. The hurdle rates used in the analysis do not adequately reflect this competitive pressure. We are concerned that these optimistic assumptions will form a key part of the processes for setting the parameters of any support mechanism, under the revised arrangements. This in turn will lead to inadequate incentives and shortfalls in delivery.

4 Mainstream Renewable Power - Preferred Reform Package

- ☐ The establishment of a Carbon Price support mechanism subject to the caveats in Section [1] above.
- ☐ The introduction of a Premium FiT[s] for all low carbon generation, under a Low Carbon Obligation on suppliers. This will ensure that the ability of low carbon generation to reach final consumers continues to be incentivised and facilitated. A Premium FiT keeps capacity “in the market” allowing a response to market dynamics and learning. As all generation capacity moves towards a low carbon basis, a Premium FiT provides a ready-made “exit strategy” - allowing support levels to be reduced as future competition is established between low carbon technologies
- ☐ The existing tried and trusted mechanisms developed for the RO have the support and confidence of both investors and developers. These should be used as the basis to administer and refine the extended Low Carbon Obligation. The Renewables Obligation has previously been reformed to deliver an expectation of 10% headroom going forward. This would be translated into a FiT equivalent to 110% of the Buyout price for currently eligible generation. Other low carbon sources would be subject to an initial Banding review. The FiT would retain an RPI escalator in line with that currently applied to the RO Buyout price. Suppliers would be required to fund the FiT payments to generators, dependent upon their level of compliance with revised Obligation. There would be no “buy-out fund” and no additional recycling element paid to eligible generators as they would only receive the FiT. Suppliers who met their obligation would be required to pay less than those who did not. Additional monies received would allow the provider of the FiT[s] to offset its cost.
- ☐ The Banding process should be retained and adapted to cover all eligible low carbon generation. FiTs would be provided under an expanded system of Banding. In order to secure a smooth transition from the RO, there would need to be a defined path for current Bands.
- ☐ Further, we would envisage an additional role for the administrator of the scheme. This would be in line with the references in the Consultation to the introduction of an additional government counterparty into the market. The benefit of this counterparty would be that it could enter into financial instruments with those parties eligible for the FiT in order to allow them to adjust their financing needs on an individual basis, exchanging floating for fixed risk and monetising support revenues if required. We suggest that this additional flexibility would allow individual market participants to have a wider choice as the risk/reward profile attached to their support, rather than a mandated “one size fits all” administered solution.
- ☐ The central agency would be funded by a levy on suppliers. Those suppliers who had met their Obligation by the presentation of Low Carbon Certificates would not be liable to further charges. Those with a shortfall would be required to pay a levy proportionate to their shortfall and the overall cost of the Obligation. Full compliance would be expected to bring two benefits, a more economic solution to the requirements of the Obligation and greater certainty of costs.

- ☐ Pursue reform of the electricity balancing mechanism (BM), specifically to address the penal nature of its impact on variable low carbon generation. Industry concerns have been expressed over the operation of BM since its inception. The ongoing review of wholesale market liquidity, naturally sits alongside this work and taken together with the final EMR package would provide the opportunity to deliver a holistic and effective solution. [More detail of our proposed reforms is attached as an Annex].

5 Possible Structure of a Premium Feed in Tariff

In order to engage constructively with the EMR process we put forward here a mechanism we believe could be workable and deliver the Government's objectives. In developing this proposal we consider the following to be essential:

- ☐ Suppliers would have a requirement or incentive to source low carbon generation.
- ☐ The level of support would be determined through independent analysis and consultation with industry; auctions cannot produce financeable, stable market signals and are unsuitable to determine prices.
- ☐ The level of support should be transparent.
- ☐ Low carbon generators should benefit from the carbon floor price with the expectation that over time, the required level of support will be reduced for new projects as wholesale power prices increase and the supply chain delivers economies of scale .
- ☐ The new arrangements should ensure a smooth transition for existing projects

The proposal:

- ☐ A Premium FiT for all low carbon generation
- ☐ Projects would receive the Premium FiT based on, but separate to, their output. Generators would continue to enter into PPAs with suppliers for their output, and the Premium FIT would be paid according to metered output by a central agency.
- ☐ The cost of the Premium FiT would be recovered from suppliers according to the proportion of electricity that they supply from non-low carbon sources.
- ☐ By charging the Premium FiT according to non-low carbon supply, suppliers would be strongly incentivised to source low carbon generation to minimise the cost to their consumers.
- ☐ The reporting structures for this have already been established with Fuel Mix Disclosure.
- ☐ The Premium FiT would be complemented by an appropriate carbon floor price and suitable emissions performance standard.
- ☐ The level of the Premium FiT would be differentiated by technology and Banded, using the established processes in place for the RO [Review, level setting, duration etc]. Our expectation is that they would last for 20 years and be indexed linked.
- ☐ At the end of a projects' eligibility for the Premium FiT, the electricity generated would still be considered low carbon in the cost recovery mechanism.
- ☐ The level of the Premium FiT would be reviewed periodically, with technologies being able to move down to lower bands as the level of deployment increased. Once operational, projects premium levels would be grandfathered.

6 Annex

Energy Market Reform

The Need to Address Deficiencies in BETTA

Introduction

There is an urgent need to examine the performance of the current electricity market trading arrangements as an essential element of the wider EMR proposal being considered by Government. Without this consideration, there is a risk that the current trading arrangements could inhibit realisation of the Government's policy goals.

In order to understand why the trading arrangements need reform, we have tested their appropriateness against the following challenges:

- ☐ how has BETTA performed in terms of meeting its design objectives but also in the light of new objectives flowing from government policy?
- ☐ how might recognised deficiencies in trading structures be addressed to support desirable changes identified by the Government?
- ☐ what changes would enable better alignment with current policy moving forward, and how might they be implemented with minimum disruption to wider commercial arrangements within the sector?

The Current Situation

The GB electricity market incorporates a residual feature to deal with uncontracted trades – the Balancing Mechanism (BM). The BM is used by the system operator on behalf of the market as a last resort to meet uncontracted supplies and any metered imbalances against contract. Its central defining feature is that it is based deliberately upon the premise of decentralised bilateral contracts with strong incentives on trading parties to avoid uncontracted trades.

- ☐ there is no centralised market place but instead multiple bilateral contractual arrangements, which are largely opaque to the wider market.
- ☐ bilateral contracts are effectively obligatory as the market rules render uncontracted trading a high-risk option, which additionally attracts unpredictable balancing costs targeted through imbalance prices.

- all parties with rights to flow on to the transmission system (TEC) can self-commit or self-despatch as long as the physical system is available and subject to pre-despatch notification. If there is over-supply as a result of contract nominations exceeding actual demand or if the local transmission system is over-loaded or unavailable, despatchable generators can be constrained back and are compensated provided they offer in through the BM.

The issue of establishing a route to market is a major problem under BETTA for all but the largest trading parties. This is because of a number of factors, including:

- market domination by a small number of participants who control 75% of generation and over 90% of supply to consumers. The benefit of a large portfolio is that trading can be largely avoided or discretionary at the margin. Independent trading parties are then faced with a choice of contracting with counter-parties who have considerable market power, or to find credit worthy counter-parties among a dwindling number of other players;
- one natural consequence of this is the poor liquidity levels in traded markets compared with other traded products; and also with international electricity markets. Risk management options for independent developers are minimal;
- the absence of a central market place has militated against the emergence of suitable reference prices to foster trading and risk management, and the bilateral markets are opaque.

The ability of renewables to compete on a level playing field is compromised by the way imbalance pricing – the mechanisms applied for pricing uncontracted trades – works. It is intended to encourage parties to contract with one another by reflecting short-run costs onto parties that do not contract cover. But for many those options to trade do not exist or are heavily circumscribed because trading is limited to short-term products typically traded in large strips between the largest players. Another key side-effect has been that the market structure has provided a strong incentive to vertically integrate. While vertical integration will take place in any market structure because of the natural hedge provided between generation and energy supply, the BETTA design with a fundamental emphasis on balancing encourages strong links between generation and suppliers because of the ability to avoid trading.

Furthermore, while imbalance prices may or may not be reasonably benign, they remain unforecastable and unknown *until after the event and cannot be hedged*. Any price excursions (positive or negative) have the scope to cause disproportionate financial harm to one-sided players who struggle to be in contractual balance. Again this reinforces incentives to integrate.

These drivers are mutually reinforcing under the current arrangements. Supply businesses will grow and verticos will buy/build generation until they can fully self hedge, insulating themselves from exposure to imbalance prices.

Another consequence of the current Trading Arrangements is that an overall merit order designed to deliver efficient despatch, does not exist. Each of the large utilities effectively manages its own

internal merit order, trading only at the margin. In an electricity market increasingly being constrained by the lack of timely investment in transmission, and with a greater penetration of variable renewables, options for “sharing” transmission capacity are being investigated with greater urgency. Sharing can be facilitated by incentives for overall efficient despatch, but as noted above, the current arrangements provide incentives which are directly contrary to this initiative.

The current structure of the BM can be characterised as acceptable, where the majority of the market comprises flexible, despatchable plant, and was an effective solution to the previous concerns about market power and the basis on which market prices were set. It allows for more efficient use of some conventional plant in that it allows a generator to run at their most efficient level and set a price (or cost) for deviating from that but without setting a marginal price for all flexible generation². However, it increases risk for virtually all low-carbon technologies, which are either typically variable or inflexible - because of their likelihood of moving into imbalance.

As we move forward increasing tranches of variable and must-run generation will be coming onto the system. Conventional generation will move to mid-merit operation with an increasingly important need to provide stand-by and back-up. At some point over the medium term the current arrangement will become untenable due to the potential large volumes of imbalance and associated costs. Ensuring orderly despatch of must-run plant will be a much more important consideration.

The Solution

For these reasons a system which incorporated the benefits of a more centralised or pooled system, without replicating the shortfalls of the previous Pool design, would deliver real competitive and efficiency benefits. If it could incorporate the desirable elements of BETTA and provide a smooth transition, then discontinuities could be minimised.

Key Features

In the past a key issue – but a distraction – was whether the pool should be mandatory or voluntary. This does not matter provided the largest players active on both sides of the market are required to trade their requirements within minimum defined parameters creating a liquidity pool. The lack of liquidity under the current arrangements, and the problems surrounding prospective measures to achieve it, are a major source of both risk and uncertainty for stakeholders, in mapping out how the government’s initial proposals for Energy Market Reform would actually deliver their objectives in practice. It is probable that a fundamental reform to address liquidity will be needed under the BETTA arrangement.

Recognising this liquidity imperative, a revised trading structure could be based on what the US market designers term the **two settlement process**, with an ex ante stage (perhaps day ahead)

² The BM is based on “pay-as-bid” pricing.

based around a liquid traded market and a real-time market to deal with flexibility and operational exigencies.

The market would need to be **two-sided**. Both generation and supply above a *defined level* should be required to take a position.

All generation would be able to offer into the **ex ante auction** probably at the day-ahead stage giving both generation and supply parties a guaranteed market. Low carbon technologies would be able to freely access the market price in each half hour under their contracts for committed quantities, in addition to additional support provided by government policy mechanisms [RO, Premium FiT etc].

Renewables incentives and CCS funding streams would continue to be administered out with the market, but the existence of the “pool” would provide a *ready reference point* and *reliable market index* for political support mechanisms looking to regulate pre-determined levels of technology support. The day-ahead traded prices would also provide a credible benchmark against which any guaranteed minimum carbon price could be administered.

All suppliers would have access to power, subject to meeting a **single credit test** but, critically, they would no longer be price takers as they were under the old Pool. They too would need to commit quantities and prices for contracted power and prices for any uncontracted power they bid in. Current multiple, over-lapping credit requirements could be dispensed with, and credit risk could be administered through a single underwritten scheme by the market administrator.

Under this approach, although the day-ahead market would be a financial market, **physical contracts** could still be the main commercial focus of trading parties if that is what they chose. However, with an appropriate form of centrally coordinated daily auction there would be a reference price for each half hour trading period that would permit trading parties to strike contracts for differences/financial contracts as well if they were so minded.

This would not necessitate a *radical upheaval*, as those with physical bilateral deals that wished to stay outside the trading arrangements could keep their current delivery contracts or migrate to new arrangements as existing contracts expired. Exactly as at present, they would need to nominate committed quantities. If their price bids were not cleared at the ex ante stage, uncontracted trades as at present would be dealt with through the real-time market.

The **real-time market** would be an on-the-day market, rolling through the day potentially from one-hour out to the close of each half-hour trading period. It could operate along similar lines to the BM but supplemented by the ex ante market that allows parties to nominate (and commit) their positions.³ It would be operated by the system operator, although reconciliation and settlement process would logically continue to be operated by a market administrator as at present. In effect generators, suppliers *and* large customers could then sell back flexibility

³ The ex-ante market effectively produces physical notifications through trading parties nominating schedules or committing parties to contracts for uncontracted plant that is offered/bid in.

(including load interruption)/peak reduction into the real-time market.⁴ The scope of engagement by the system operator would be consistent with its current role of residual balancer.

It is a point for debate whether the ex ante and real-time markets should be based on a marginal auction or as at present pay-as-bid. But unlike the day-ahead market which would be based on simple quantity/price bids and offers, the system operator would, as now, need to take into account plant inflexibilities and locational effects.

A two-settlement market would provide an opportunity for demand-side managers to fully participate in the market. A major shortcoming in the current arrangements is that there is no indicative real-time price. This would need to be communicated to the market [e.g. 15 minutes] ahead of the start of each trading period. Flexible generation and demand would need to finalise schedules or supplemental offers and bids at this point. A market price would also permit the offer of half hourly prices by suppliers to customers, also encouraging flexible demand, subject of course to commitments made in the ex-ante market.

Market prices would be uncapped, but the two-settlement process would also be able to administer a capacity pricing mechanism (if one were introduced at some future date). Alternatively the market operator could administer a contracting obligation on suppliers⁵. The more sophisticated US pools combine the two through capacity trading markets that sit along-side the organised energy markets.

There is no necessity under this reformed market to move to new business processes and systems. Significant elements of the current arrangements could be retained – BM processes and systems, schedules (in effect contract notifications), metering and settlement. Even cash-out *could* be retained largely in its current form as, given the availability of a must-run/can buy market, all parties will be much more able to access power at market-related prices, and imbalance would be calculated against the nominated schedules and the metered output. In a world of *fully and easily accessible* market access, imbalance prices could potentially be made more marginal at times of system stress—provided these prices reflected true energy costs.

With regard to central despatch there is no reason why, once participants have nominated their production/consumption schedules, there should be central despatch. In fact using schedules in this way (effectively in place of contract nominations) would allow the current imbalance pricing mechanism to work as part of the real-time market, rather than as at present, an administered mechanism to which market participants are unable to respond.

There would, of course, need to be some form of market power monitoring to deal with price setting worries by generators with potential market power, and the large vertically-integrated players would need to be required to declare volumes in the ex ante market.

⁴ At present only flexible generators avail themselves of this option.

⁵ Such an obligation could only be contemplated where all suppliers can fairly access contracts or quantities.

In summary, it should be possible to build on current structures, introduce a centralised trading system but without the many and significant failings of the England and Wales Pool. At the same time it should be possible to preserve some of the design objectives and concepts that informed the NETA vision.

Would it be worth the major investment and time needed to set up?

Yes, definitely. The proposed arrangements would guarantee a liquidity pool and be able to accommodate increasing volumes of must-run plant. They would also be compatible with any administered arrangements with regard to carbon pricing and generation capacity support.

But the change-over need not be such a radical shift as the proposals might suggest. Much of the current contract notification processes (for nominations); reconciliation and settlement systems could be retained largely in their current form. The BM already provides the framework for a real-time market. Noting the system operator's current significant investment in replacement market systems based on the existing design, this ability to make a smooth and efficient transition, is a key feature.

EDL and current physical communication protocols could also be retained.

Crucially, it would be possible to retain choice for merchant generators that wanted to exist outside the arrangements and preserve their current physical delivery contracts and reflect this in the design of the reformed market. The arrangements need not be more onerous than the current ones whereby physical parties above 100MW (generation) and 5MW (supply) nominate quantities and give physical notifications.

Conclusion

We believe that the concepts outlined in this paper—in particular the two-settlement concept—provide a valid solution to the challenges posed by deep seated lack of market liquidity and the penal nature of the current balancing mechanism - to the promotion of the necessary reforms proposed in the Energy Market Reform Consultation. We recognise that there is further work required to transform the concepts into a detailed and fully coherent set of proposals. However, we believe that framework has the potential to provide effective solutions to some underlying defects in the energy market and look forward to the opportunity to work with government to achieve the desired outcome.

7 Consultation Questions – Mainstream Renewable Power Response

Current Market Arrangements

7.1 Do you agree with the Government's assessment of the ability of the current market to support the investment in low-carbon generation needed to meet environmental targets?

Mainstream Renewable Power believes that the current market arrangements will not deliver the required rate of decarbonisation to deliver the UK's 2050 ambitions. We agree that the incentives to invest in low carbon generation need to be strengthened, together with measures to ensure that high carbon energy sources are not "locked in" to the energy mix, as the UK pursues measures intended to accelerate the transition to a low carbon energy sector. Any proposed reform carries the fundamental need to preserve confidence, in order to ensure that there is not a damaging hiatus or permanent diversion of investment away from the UK energy sector. We look to the government to continue the constructive process of engagement as the EMR reforms move to the next stage of development.

We consider that the proposals detailed in the EMR reform package should be taken as the starting point for further engagement with the energy industry. Whilst elements of the package have merit, the mechanics of implementation and the extensive detail necessary to underpin the reforms will need to be the subject of considerable further work, before industry is in a position to endorse the reforms as being capable of delivering the stated objectives.

7.2 Do you agree with the Government's assessment of the future risks to the UK's security of electricity supplies?

Yes.

Options for Decarbonisation

- Feed-in Tariffs

7.3 Do you agree with the Government's assessment of the pros and cons of each of the models of feed in tariff (FIT)?

We do not agree with the Government's assessment. We do not accept the figures quoted in Table 4, for the reduction in hurdle rates for wind energy under a CfD.

The document states that “fixed FIT and CfDs might be more attractive to a wider group of investors - in particular to smaller independent generators and institutional investors” As an independent developer closely in touch with the financial community, our view is that CfDs are seen as bringing additional risks, which have the potential to add rather than reduce costs.

We do not believe that a premium FIT reduces policy risk for wind generators relative to the baseline under the RO.

A major omission from the Consultation is the consideration of increased risks facing independent generators as a result of removing the current Obligation on suppliers, currently implemented via the Renewable Obligation. This provides both a route to market and promotes a more level playing field for independent generators in the negotiations regarding off-take agreements with suppliers. These usually take the form of power purchase agreements (PPAs), which also serve as the means of managing and partially mitigating exposure to operational risks and imbalance costs.

Under the draft proposals, generators will still need to secure a route to market for their generation and be required to manage their imbalance exposure, but without the necessary obligation on potential counter parties to provide such routes. We do not believe that the reforms address the need to provide the necessary market liquidity to offset this risk. As such, in the absence of an Obligation, routes to market will come at a higher cost to independent generators than at present. We expect this to more than offset any prospective benefits in moving renewable generators from the current arrangements under the RO.

7.4 Do you agree with the Government’s preferred policy of introducing a contract for difference based feed-in tariff (FIT with CfD)?

We do not consider that the reforms address the necessary conditions that need to be established in order to allow a contract for difference based feed-in tariff (FIT with CfD) to operate effectively or equitably in the GB market.

We understand why the government has considered the use of a CfD. Under a revised set of trading arrangements and under the right conditions, a CfD *could* be made to work well, but requires certain key elements to operate very effectively.

- ☐ Setting the “right” strike price for the particular technology or “band”
- ☐ Sufficient liquidity in terms of depth, time and diversity of available traded products
- ☐ A market mechanism which allows the counterparty full and free access to the traded market that the strike price is based on

The current market arrangements, [BETTA], certainly do not provide full and free access to the “market index”. The design of the Trading Arrangements actively discourages the liquidity necessary to establish a market which is sufficiently deep, of appropriate tenor and provides the broad range of product offering required to deliver a reliable index.

By far the most effective way to trade in the BETTA market is to be vertically integrated, with a responsive generation portfolio; and indeed the vast bulk of power completely bypasses the market and moves from the generation to supply accounts of large, vertically integrated utilities. It is difficult to envisage a situation where without wide ranging fundamental reform, this situation will change. Certainly the EMR proposals are silent on the issue and the work currently being carried out by Ofgem can only deliver remedies [if any] within a landscape constrained by the pillars of the current arrangements. We therefore cannot envisage a situation where market liquidity will evolve sufficiently to support the introduction of a workable CfD for variable renewable generator.

There is a further barrier for variable renewables to access any proposed market index and this is the penal nature of the Cash Out arrangements which are an integral part of BETTA. The emphasis is on individual gross balancing with penalties derived via a complex, opaque and unhedgeable algorithm, rather than the opportunity to trade imbalances and settle the residual imbalances on a net basis. The outcome of this is that variable renewables face an in-built discount [or basis risk] against the value of their output, whether this is traded via a shorter term contract market, or via longer term PPAs. Analysis suggests that as the proportion of low carbon generation increases in the years ahead, this basis risk will increase significantly. Nothing in the EMR proposals addresses this issue, which if addressed effectively has the potential to significantly reduce the barriers and costs faced by variable renewables.

Depending on their ability [or not] to secure access to contracts and mitigate balancing risk, a situation can be envisaged where parties can only capture a proportion of the value of the published market index, but with any CfD assuming 100% effectiveness – the outcome is LESS return than the desired level. This could potentially be rectified by intervention to increase liquidity to the desired level, more fundamental reform of the trading arrangements, or “micromanagement” by the administrator in setting numerous CfD prices to compensate. Without such further measures, this threat to value will continue to be a feature of the market.

7.5 What do you see as the advantages and disadvantages of transferring different risks from the generator or the supplier to the Government? In particular, what are the implications of removing the (long-term) electricity price risk from generators under the CfD model?

Cost optimisation results from the allocation of risks to those parties best placed to manage them. It is important to note that risks do not reduce or disappear due to a particular allocation, but the cost of the particular risk can vary considerably, depending on where it falls and the ability of the party to manage it. In the extreme, where risks are allocated which are unmanageable by a particular party, then the risk will not be accepted and projects will not proceed.

The government has acknowledged the beneficial role played by the underlying disciplines and efficiencies of market operation and has decided to intervene in order to *accelerate* the transition to a low carbon electricity sector, to secure delivery on a timescale deemed unattainable by current arrangements in isolation.

We have fundamental concerns that the use of a government administered CfD mechanism effectively removes a substantial and increasing tranche of generation from participation in, and being affected by the market. This reduces the incentives on the affected capacity to a simple availability risk.

The impact on the generation which is outside of these arrangements, and tasked with setting the “market price” will be significant. As deployment increases, price setting will be left to a residual and specific segment of the generation capacity, resulting in increasingly unpredictable, volatile prices which are unreflective of the underlying fundamentals. Further, since the majority of capacity will be indifferent to the price profile, under a CfD arrangement, there will be no incentive to respond in a manner consistent with market signals.

Imbalance risk is likely to increase, further disadvantaging variable renewable generators, as described above. A CfD arrangement would not insulate these generators from this aspect of long-term electricity price risk.

Under the current arrangements, **support** is provided by a mechanism which is independent of the price of power and incentivises the production of *energy* with very little temporal risk. Whilst there are risks associated with the value of a ROC, these are well known, fall within predictable parameters and generators have experience of managing them. Under the CfD arrangement, support would additionally be exposed to the same time-based **offtake and basis risks** that devalue a generator’s energy output. Support would be transformed from being based on *energy* to being based on *power*, with a consequent significant increase in risk and diminution of value.

Rather than removing some uncertainty, this represents a significant increase in the overall risk profile for variable renewable generators

7.6 What are the efficient operational decisions that the price signal incentivises? How important are these for the market to function properly? How would they be affected by the proposed policy?

In order to incentivise efficient operational decisions, the price signal must be reflective of market fundamentals, meaningful, capable of being responded to [in complementary timeframes] and forecastable. Variable renewable generation responds to market signals and to the availability of its resource. In the case of offshore wind, the incentive will always be to utilise the greatest possible proportion of the resource and schedule maintenance and other essential activities at predicted least opportunity cost periods. As such, it is difficult to discern what market efficiencies for variable renewable generation are provided by a CfD.

We have noted above that a CfD has a very strong availability incentive. However, exposure to the market price, based on a premium FiT, or the current support mechanism, provides a more sophisticated and appropriate suite of signals for a generator to respond to.

7.7 Do you agree with the Government's assessment of the impact of the different models of FITs on the cost of capital for low-carbon generators?

We do not agree with the Government's assessment of the impact of the different proposed on the cost of capital. We believe the cost of capital (hurdle rate) reductions for wind projects under a CfD FIT, listed in Table 4, are inaccurate. The Consultation uses generic rates of return for wind projects. Even ignoring that every project has its own cost of capital, the rates suggested may overstate the potential reduction in the cost of capital for wind projects from a CfD based FIT.

Moreover, the table implies that a CfD FIT reduces risk to the same extent as a fixed FIT. This is clearly inaccurate, since the CfD leaves generators exposed to "index risk" and balancing risk. There are a number of significant risks and costs that have not been incorporated into the analysis and assessment of the CfD option:

- index-basis risk
- balancing-basis risk
- offtake transaction costs
- counterparty credit requirements

With regard to the structure of the FIT, fixed and premium FITs have a record of operational experience in other international markets, unlike CfDs. This lack of experience will be reflected in higher risk premiums being applied to a CfD mechanism.

As a leading independent developer, Mainstream Renewable Power receives continuous feedback from potential new entrants to the offshore wind industry. Our sources suggest that the assumption of a 13.3% hurdle rate may be a reasonable estimate for an operating offshore wind farm with a proven performance history. However, the new investors required for both the early stage development and construction stages of a project will be facing significantly higher hurdle rates given the risks involved, including permitting risk and construction risk. As such, the hurdle rate for an independently developed wind farm over its entire lifecycle is likely to be significantly higher than the 13.3% figure given in Table 4.

Also, the lower hurdle rates assigned to utilities are based on their current equity betas. This is unlikely to remain the case over the next 20 years, as both the risk profile of the industry changes and the utilities' response to the changing energy market is assessed.

The ability to raise finance on utility balance sheets is finite: it is becoming increasingly common for utilities to refinance operational wind projects on a non-recourse debt basis - which will increasingly expose these projects to the same risks and challenges as independently developed wind projects.

7.8 What impact do you think the different models of FITs will have on the availability of finance for low-carbon electricity generation investments from both new investors and the existing investor base?

EMR as a package represents a major set of reforms to the electricity market and at this stage carries a significant degree of uncertainty with regard to final arrangements and confidence in effective implementation/operation. Investors will not commit capital to new projects until the details are finalised and an orderly value-protecting transition from the RO is clearly established. A critical element is the need to provide early confidence that RO projects will be properly protected by the Grandfathering/vintaging arrangements. This in turn will determine whether investors have the confidence to take part in the market under any reformed arrangements that will inevitably be subject to change in the future.

Of the options presented, we believe that the premium FiT, coupled with a suitable supplier obligation, will prove to be the most attractive to the investment community.

A Premium FiT provides the least disruptive transition from the RO, promoting confidence for investors, whilst providing the opportunity to widen support across the range of Low Carbon technologies. However, the retention of an obligation on suppliers is a critical element in order to ensure that investors can identify a secure route to market.

7.9 What impact do you think the different models of FITs will have on different types of generators (e.g. vertically integrated utilities, existing independent gas, wind or biomass generators and new entrant generators)? How would the different models impact on contract negotiations/relationships with electricity suppliers?

Please see answers to previous questions.

7.10 How important do you think greater liquidity in the wholesale market is to the effective operation of the FIT with CfD model? What reference price or index should be used?

Market liquidity is vital to the success of the CfD. The Consultation does not address how sufficient liquidity will be delivered and without this essential element, a CfD cannot be made to work satisfactorily for variable renewable generation. We believe that the issue of market liquidity should be coupled with reform of the Balancing Mechanism/cash out arrangements and integrated into the next steps of the EMR process in order to deliver a more holistic solution to the shortfalls of the current arrangements.

7.11 Should the FIT be paid on availability or output?

The primary objective of facilitating renewable and other low carbon generation capacity is the production of low carbon energy. For this reason we favour support being based on **output**. For despatchable low carbon generation, ensuring that it can respond to market signals will ensure that value optimisation drives availability decisions. Underlying availability incentives for capacity across the generation sector should be addressed separately as part of the overall market design, not incorporated into a support mechanism.

- Emissions Performance Standards

7.12 Do you agree with the Government's assessment of the impact of an emission performance standard on the decarbonisation of the electricity sector and on security of supply risk?

We agree with and support the introduction of an EPS as part of the suite of measures intended to limit the deployment of high carbon generation. Given the need to ensure that sufficient backup plant, capable of performing the required duty is available in a timely manner, we endorse the approach used of basing allowed emissions on "equivalent annual baseload" operation. This will enable operators to optimise their use of the particular emissions "bubble" whilst capping the overall environmental impact.

7.13 Which option do you consider most appropriate for the level of the EPS? What considerations should the Government take into account in designing derogations for projects forming part of the UK or EU demonstration programme?

We do not have a view on the particular level. However, we do wish to set out some criteria for its determination. It should not be set at a level which imposes additional onerous requirements on plant operators in the UK, compared with best practice in the rest of Europe. It should not be applied retrospectively, either to plant in operation now, or to future commissioned capacity, should the original EPS level be revised downwards. Given the nascent stage of carbon capture and storage (CCS) development, care needs to be taken where requirements may be placed on plant to be CCS "ready". This could either lead to excessive and ultimately unrealistic requirements being placed on new capacity, or alternatively result in little actual impact on the design of the plant. Since the drivers on capacity choice are difficult to forecast with sufficient accuracy very far into the future, we would favour the retention of a wider decision base (including the use of an EPS) when the government decides whether or not to approve the construction of new capacity. Reliance on the use of one mechanism alone, such as the EPS should be avoided to allow the necessary flexibility to respond to the entirety of issues pertinent at the time.

7.14 Do you agree that the EPS should be aimed at new plant, and ‘grandfathered’ at the point of consent? How should the Government determine the economic life of a power station for the purposes of grandfathering?

We agree that the EPS should be aimed at new plant, and ‘grandfathered’ at the point of consent.

7.15 Do you agree that the EPS should be extended to cover existing plant in the event they undergo significant life extensions or upgrades? How could the Government implement such an approach in practice?

Care will need to be taken in deciding what constitutes “significant”. Operators should be incentivised to invest to improve plant performance, where there is an economic and environmental case, but should have a clear basis on which to make those decisions. The process will need to ensure on the one hand that “upgrades” are not used as a way of avoiding compliance with obligations, but on the other should not deter investment in plant which would otherwise continue to operate at a higher level of environmental impact.

7.16 Do you agree with the proposed review of the EPS, incorporated into the progress reports required under the Energy Act 2010?

N/A

7.17 How should biomass be treated for the purposes of meeting the EPS? What additional considerations should the Government take into account?

N/A

7.18 Do you agree with the principle of exceptions to the EPS in the event of long-term or short-term energy shortfalls?

Yes

Options for Market Efficiency and Security of Supply

7.19 Do you agree with our assessment of the pros and cons of introducing a capacity mechanism?

The case for capacity mechanisms, of the type outlined under the EMR reform proposals has not been made. The options examined appear to be fundamental interventions into the operation of the market, which will necessarily change its characteristics in ways which have not been mapped out or fully understood. The objective is to ensure that the whole electricity system can be operated efficiently and effectively with an increased penetration of low carbon generation.

Administered capacity mechanisms are but one of a range of initiatives which could achieve this objective. Others include enhanced objectives on the system operator with regard to reserve and backup provision, the establishment of an effective reserve market and reform of the balancing mechanism itself. By implementing an administered mechanism, it would exclude the possibility of a more diverse range of emerging market based solutions to provide a more efficient answer. In particular, we believe that there is further scope to provide the required services through increased interconnection, via the proposed SuperGrid.

Before taking such a fundamental step as establishing an administered capacity mechanism, further work is necessary to ensure that the optimum suite of measures has been explored. National Grid should be supported in its present fundamental review of future reserve options and the scope broadened to ensure that a comprehensive stakeholder engagement can be conducted when the results are available. Another element essential to the derivation of appropriate solutions is the long awaited Review of the GB SQSS. The provision of these two pieces of work will provide the opportunity to address capacity issues in an informed and holistic manner. Whilst we concur that the provision of adequate backup and reserve capacity is a central issue, we have the opportunity to subject it to due consideration, prior to making fundamental decisions which will affect the underlying operation of the energy market itself.

7.20 Do you agree with the Government's preferred policy of introducing a capacity mechanism in addition to the improvements to the current market?

No.

7.21 What do you think the impacts of introducing a targeted capacity mechanism will be on prices in the wholesale electricity market?

It will distort the underlying operation of the energy market in ways which have not been sufficiently analysed or articulated. It will introduce additional uncertainty, and make forecasting and planning more difficult.

7.22 Do you agree with Government's preference for the design of a capacity mechanism:

- a central body holding the responsibility;
- volume based, not price based; and
- a targeted mechanism, rather than market-wide.

We do not support the implementation of a capacity mechanism.

7.23 What do you think the impact of introducing a capacity mechanism would be on incentives to invest in demand-side response, storage, interconnection and energy efficiency? Will the preferred package of options allow these technologies to play more of a role?

An administered solution on the generation side will lead to distortion of the incentives on the demand side. There will be uncertainty and inability to forecast the benefits of demand side investment. Effective demand side participation will be key to the UK meeting its 2050 objectives.

7.24 Which of the two models of targeted capacity mechanism would you prefer to see implemented:

- Last-resort dispatch; or
- Economic dispatch.

If a capacity mechanism is implemented, we prefer the last-resort dispatch, as it is less likely to distort the electricity market price. Capacity subject to last-resort dispatch would play no part in setting "normal" market prices and operational balances. Remuneration and investment decisions for this capacity could be more clearly defined and delineated to minimise the distorting effects on the underlying energy market.

7.25 Do you think there should be a locational element to capacity pricing?

We do not support any locational element in capacity pricing.

Analysis of Packages

7.26 Do you agree with the Government's preferred package of options (carbon price support, feed-in tariff (CfD or premium), emission performance standard, peak capacity tender)? Why?

No. Our preferred package includes:

- ☐ Appropriate use of the Carbon Price support initiative
- ☐ A Premium FiT mechanism for providing support
- ☐ A Low Carbon Obligation on suppliers
- ☐ Reform of the balancing mechanism and short term markets to allow more effective solutions to the incorporation of variable low carbon generation
- ☐ Enhanced incentives for reserve/backup capacity and the pursuit of increased continental interconnection, based on market facing initiatives, rather than premature administered capacity solutions
- ☐ An emissions performance standard at a level which allows and incentivises opportunities for reserve/backup capacity, but which does not encourage another "dash for gas" which locks in a high carbon generation mix for the next 30-40 years
- ☐ A transition process which adequately protects existing investment and provides the necessary confidence for industry to continue its expansion as we move forward to operation under the reformed arrangements

We do not support such a radical intervention into the capacity market as has been proposed. Greater interconnection and the incentives on the market to provide suitable backup plant need to be allowed to deliver solutions, prior to administered solutions being imposed on the electricity sector.

7.27 What are your views on the alternative package that Government has described?

We believe that the introduction of a premium FIT, coupled with a continuing Obligation on suppliers will more effectively meet the government's objectives than the current lead option.

However, there are important issues with regard to liquidity, balancing risk, and transition which need to be more fully defined prior to implementation.

7.28 Will the proposed package of options have wider impacts on the electricity system that have not been identified in this document, for example on electricity networks?

N/A

7.29 How do you see the different elements of the preferred package interacting? Are these interactions different for other packages?

Please see our responses to questions above.

7.30 What do you think are the main implementation risks for the Government's preferred package? Are these risks different for the other packages being considered?

The CfD proposal has a low probability of success as there is currently insufficient liquidity in the GB electricity market. It is therefore impossible to derive a "market index" to base a CfD upon which would remove revenue volatility. The implementation risk of the premium FiT is significantly less than that posed by the CfD because it does not expose the support element of a generator's revenue to market price risk and has many elements in common with the widely understood operation of the RO.

We consider that auctions are incompatible with the objectives of the EMR initiative and would act to introduce further risks, uncertainty and barriers to investment. Auctions by their nature are unpredictable and provide no basis for longer term investment decisions and accompanying cost reduction.

The auction structures mentioned in the Consultation will not lead to reliable price discovery. In competitive market segments there will be a tendency to bid over-enthusiastically, impairing project delivery, while in less competitive markets there is the potential to abuse market power.

UK experience with the Non Fossil Fuel Obligation is likely to be repeated, but with undesirable outcomes an order of magnitude greater than previously experienced.

The draft reforms propose to remove suppliers' obligation to contract for renewable electricity. This undermines the strategy of utilities that have supported Government policy in pursuing renewable development as well as weakening competition in the renewable energy market. The power purchase agreement (PPA) market is primarily determined by the demand from utilities. If suppliers no longer have an obligation or target to purchase renewable electricity then they will naturally be less inclined to contract. Without an Obligation, the PPA market will become distressed, with higher discounts applied to PPA terms. This loss of revenue is likely to significantly offset any notional gains from a reduction in hurdle rates and will increase the overall cost to the consumer. In order to avoid the introduction of significantly increased off-take risk [and the

associated additional risk premium] the Supplier Obligation should be retained and transformed into a Low Carbon Obligation.

7.31 Do you have views on the role that auctions or tenders can play in setting the price for a feed-in tariff, compared to administratively determined support levels?

We consider that auctions are incompatible with the objectives of the EMR initiative and would act to introduce further risks, uncertainty and barriers to investment

7.31.1 Can auctions or tenders deliver competitive market prices that appropriately reflect the risks and uncertainties of new or emerging technologies?

No.

7.31.2 Should auctions, tenders or the administrative approach to setting levels be technology neutral or technology specific?

A technology specific, administered approach, based on the principles established and honed under the RO Banding process.

7.31.3 How should the different costs of each technology be reflected? Should there be a single contract for difference on the electricity price for all low-carbon and a series of technology different premiums on top?

We support the introduction of a banded, Premium FiT mechanism.

7.31.4 Are there other models government should consider?

Should prices be set for individual projects or for technologies

Do you think there is sufficient competition amongst potential developers /sites to run effective auctions?

Could an auction contribute to preventing the feed-in tariff policy from incentivising an unsustainable level of deployment of any one particular technology?

Are there other ways to mitigate against this risk?

Please see above.

7.32 What changes do you think would be necessary to the institutional arrangements in the electricity sector to support these market reforms?

Pursue reform of the electricity balancing mechanism (BM), specifically to address the penal nature of its impact on variable low carbon generation. Industry concerns have been expressed over the operation of BM since its inception. The ongoing review of wholesale market liquidity, naturally sits alongside this work and taken together with the final EMR package would provide the opportunity to deliver a holistic and effective solution. [More detail of our proposed reforms is attached as an Annex].

7.33 Do you have view on how market distortion and any other unintended consequences of a FiT or a targeted capacity mechanism can be minimised?

Please see our answers above regarding the application of a Premium FiT mechanism to provide support, the use of a Low Carbon Obligation, and the undesirability of a major distorting intervention into the market such as the prospective administered capacity mechanism.

7.34 Do you agree with the Government's assessment of the risks of delays to planned investments while the preferred package is implemented?

We support giving projects the choice between the RO and FiT based support, for a transitional period; however, we are concerned that the long lead time associated with large-scale projects means that an accreditation deadline of 2017 may, in practice, result in no choice at all. The lack of a properly designed, smooth transition to a new and untested support mechanism has the high probability of engendering a significant hiatus in investment. Whatever approach is adopted, 'vintaging' arrangements must properly address wholesale price and capacity payment changes post-EMR, as these will have a major impact upon the revenues of renewable projects. The principles of the transition must be to protect existing RO investments and prevent a hiatus in renewables deployment.

We believe that the accreditation deadline should be moved to 2020, with an accompanying extension to the RO until 2040. Failing this, projects should be allowed to qualify for RO support based upon a revised set of parameters, which can be met at an earlier part of the development process, ahead of the 2017 date.

This will ensure key renewable projects, such as the third offshore wind leasing round, are not adversely affected. The schedules for Round 3 projects are likely to mean that accreditation onto a revenue support scheme would occur close to 2017. This would put Round 3 projects in a position where they are too late to access the terms of the Renewables Obligation, but faced with the uncertainty of both terms and operational experience of the new regime.

7.35 Do you agree with the principles underpinning the transition of the Renewables Obligation into the new arrangements? Are there other strategies which you think could be used to avoid delays to planned investments?

We propose that accreditation under the RO would remain open until 31 March 2020.

7.36 The Government's ambition is to introduce the new feed-in tariff for low carbon in 2013/14 (subject to Parliamentary time). Which of these options do you favour:

All new renewable electricity capacity accrediting before 1 April 2017 accredits under the RO;

All new renewable electricity capacity accrediting after the introduction of the low-carbon support mechanism but before 1 April 2017 should have a choice between accrediting under the RO or the new mechanism.

Please see previous answers.

