

Independent Renewable Energy Generators Group

Submission to DECC for the Call for Evidence on Barriers to Securing Long-Term Contracts for Renewable Generation Investment

1. Executive summary

- 1 The Independent Renewable Energy Generators Group (IREGG) is comprised of Banks Renewables, Fred.Olsen Renewables, Infinis and RES. Collectively, the Group operates some 20% of total UK onshore wind capacity and accounts for over 25% of UK capacity in development.
- 2 IREGG supports the objectives of the Energy Bill, but as currently drafted the Energy Bill does not work because it jeopardises the ability of independent generators to invest in vital infrastructure. Below is a summary of our concerns.
 - a) The Feed-in-Tariff with Contracts for Difference (CfD-FiT) is unable to provide confidence to invest because unlike a true Feed-in-Tariff, which allows generators to “feed-in” their generation at a set tariff to a defined counterparty, generators need to *sell* their electricity in the open market.
 - b) For an independent renewable generator to sell their electricity into the open market, they will require a Power Purchase Agreement (PPA) from a credit worthy counterparty.
 - c) The only organisations in the UK currently capable of providing long-term financeable PPAs at scale are the vertically integrated utilities.
 - d) As a consequence of EMR there is no long-term structure that aligns the strategic interests of the utilities, with long term objectives of the Government and long-term finance. Accordingly a vertically integrated utility has limited incentive to contract beyond the short term, as it knows that changes in cost can be passed on to the end consumer.
 - e) With the withdrawal of the obligation on vertically integrated utilities to source a proportion of electricity from renewables there will no longer be an incentive to offer a viable PPA to independent generators under the EMR. Without viable PPAs being available, investment in onshore wind generation by independent renewable energy generators faces an absolute “cliff-edge” in early 2015. (After 2015 it becomes too late to engage an 18-24 month construction cycle in time to remain eligible for ROCs).
 - f) The drop off in onshore wind development could begin as early as 2013 as a consequence of the three-year plus period for design, planning permission and condition consents. To avoid obvious consequences for the UK’s supply chain and jobs, it is vital that the uncertainty created by EMR is addressed and a viable route to market secured for independent renewable generators.
 - g) There is a fundamental deterioration in the current PPA market that is occurring now because the obligation is being fixed alongside the introduction of the EMR. This introduces new risks for utilities and we have presented evidence that explains why this is undermining the willingness to offer PPAs with long-term ROC exposure to the extent that there could be a significant reduction in the projects being built out to 2017.
 - h) The deterioration in PPA terms that has arisen from the reduced Renewables Obligation (RO) appetite demonstrates what will become a downward trajectory when the obligation is entirely removed under the EMR. Suppliers will be able to command a larger share of the revenue stream and independent generators will be forced to accept a reduced share of that revenue stream.
 - i) As a result of this reduced share of revenue, the Government will either need to increase the “strike-price” to account for the higher share of revenues taken by the vertically integrated utilities (with consequences for household bills), or independent generators will be unable to operate in the market (with consequences for the Government’s objective of securing low-carbon generation at least cost)
 - j) The Government cannot afford to wait until 2015 before taking action. We have presented evidence that shows a dearth of viable PPA providers in the market at the moment. As a group we have not had a project fail (yet) as a result of being unable to source a viable PPA, however, with only a couple of viable counterparties in the market each experience is increasingly difficult and more complex which undermines confidence in further project development.
 - k) The market-led initiatives proposed by the Government do not provide any confidence to independent renewable generators that a viable PPA will be available, whilst the competition measures proposed are not expected to have any impact and could not be introduced in time.

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Without evidence that these solutions can have the desired effect, and in the time required then the risk of developing projects in the UK increases significantly under the EMR.

- I) Of the options put forward, the PPA Provider of Last Resort is the only one presented that has the potential to provide a robust and enduring solution that delivers the confidence that we need to maintain investment. Given the current state of the PPA market it is very important that this solution is implemented from the outset alongside the first CfDs.
- 3 Independent generators are central to achieving the Government's low carbon objectives, ensuring security of supply, promoting competition in the electricity sector, providing a conduit for investment and pension funds to come into the UK, and encouraging innovation across the low carbon economy. IREGG is keen to engage with Government to develop a solution that allows independent generators to continue accessing the market post-EMR and deliver these objectives.

2. Context

- 4 The provision of long-term contracts for independent renewable generation investment will be vital if the Government is to meet its objective of moving towards a secure, more efficient and low-carbon energy system in the most cost-effective way. Such long-term contracts will be particularly important in achieving the Government's objectives, as set out in the July 2011 White Paper on Electricity Market reform (para. 11 EMR White Paper):
- a) *Provide a more efficient and stable framework for investors ensuring that the cost of capital required for new low-carbon generation capacity is lower. This varies by technology but the overall effect of the cost of capital reductions from electricity market reform will be a potential saving of £2.5 billion over the period to 2030;*
 - b) *Encourage investment in proven low carbon technologies, but also allow new technologies such as CCS to get off the ground and allow them to become cost-effective and compete without support. This is vital to our ability to adjust to different scenarios for fossil-fuel prices;*
 - c) *Boost competition as it will provide the framework for independent generators and new investors in low-carbon generation. The ability of new entrants to enter the market will also be supported by action from Ofgem to improve liquidity;*
 - d) *Lead to competition within and between different low-carbon generation technologies for their appropriate role in the energy mix as we move to technology-specific auctions for contracts towards the end of the decade and technology-neutral auctions further in the future;*
 - e) *Introduce an appropriate policy framework in the electricity sector to contribute toward delivery of the fourth carbon budget; and*
 - f) *Achieve these aims at least cost to the consumer.*

Independent Generators are critical to delivering the Government's objectives

- 5 Independent generators and investors are critical to delivering low-carbon generation and a competitive electricity market. This is because:
- a) As the Government has recognised, the incumbent vertically integrated utilities alone cannot deliver the investment required. The UK needs to invest £75bn in new renewable generation by 2020, one part of the larger £200bn investment required for the country's whole energy infrastructure. Incumbents have constraints on their balance sheets along with a range of opportunities across many markets; they have no specific commitment to low-carbon generation in the UK and their appetite to invest is susceptible to pressures from their home markets.
 - b) Independent generators and financial institutions are required to make up the shortfall. Independents and financial institutions are expected to provide between 30%-50% of the investment required. Both independents and financial institutions have similar investment requirements. Typically they look at projects as stand-alone companies with a defined set of cash flows where each project must be able to operate as a viable independent business.
 - c) Independent generators promote innovation, competition and efficiency. Increasing the role of independents will also support the broader objectives of the Government and are vital to bringing about competition in the wholesale market.
 - d) A vibrant onshore wind sector builds broader industry confidence and innovation. Onshore wind is the barometer for the broader renewables industry. It has delivered over 4.6 GW of capacity in the UK, has the longest history, provides confidence and continuity to investors in offshore and the wider renewable energy supply chain.
 - e) Onshore wind is an essential component of a fully diversified energy mix that provides energy security and reduces our dependency on increasing imports of natural gas.

The draft Energy Bill jeopardises the ability of independent generators to continue investment

- 6 As it stands, the draft Energy Bill is structured in a way that jeopardises the ability of independent generators to continue investment in onshore wind. This will have major consequences for household bills, security of supply and the UK's ability to meet its CO2 reduction targets.
- 7 In the opening summary of the Energy Bill, the Government describes the key element of the reform as "the introduction of new long-term contracts (Feed-in-tariffs with Contracts for Difference, CfD-FiTs) to provide stable financial incentives to invest in all forms of low-carbon electricity generation." However, there are critical issues that undermine the ability of CfD-FiTs to deliver stable financial incentives and the consequential likelihood of drawing through investment.
 - a) The CfD only covers one element of the income stream, the support or top-up payment. It does not cover the underlying electricity related revenues. This creates a critical difference with a standard FiT payment model where certainty is created as the FiT covers the full revenue stream.
 - b) As a result of this difference, the generator is left with critical risks that will undermine any potential savings from moving to the CfD structure. The risks that remain are balancing, basis and price risks.
 - c) These risks present a significant barrier to entry and will increase the cost of capital or reduce the attractiveness of the project to international finance.
 - d) The large vertically integrated utilities (hereafter referred to as the "Big-6"), have benefitted from historical precedence to have access to large, diverse portfolios of generation assets and demand which enables them to manage these risks effectively. Furthermore, these organisations have established trading desks, infrastructure, risk management practices and experience, providing them with a competitive advantage.
 - e) For independent generators, who look to attract third party finance to make investments in their projects, these risks present an insurmountable obstacle. As a result they have to share these risks with a third party through a PPA for the duration of the finance agreement.
 - f) Any reduction in the cost of capital will depend on how effectively these risks can be transferred or shared and there will be a cost associated with this. Prior to the announcement of the EMR there has been an incentive for the "Big-6" to take on these risks and provide PPAs because of the Renewables Obligation (RO). This has provided sufficient competition between the "Big-6" to ensure that the cost of undertaking these risks is viable for the independent generator.
- 8 With the announcement of the removal of the RO, there is no incentive for the "Big-6" to continue offering PPAs or to ensure that they are reflective of the risks incurred. As a result any savings in the cost of capital that may be expected to arise as a result of the improved revenue certainty could be easily outweighed by an additional cost of accessing the PPAs.

The lack of a viable route to market for independent generators undermines the Government's aspiration of competitive price discovery

- 9 It is clearly the Government's intention to introduce auctioning as a method of competitive price discovery to determine the level of low-carbon support in later years. And, whilst we have serious concerns about how the uncertainty created by auctions could be combined with the risk of development to maintain a sustainable level of investment in low-carbon generation, it is absolutely clear that competitive price discovery cannot work whilst one party is dependent on another party in the same auction to secure their route to market.

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- 10 As it stands, an independent renewable generator is dependent on a PPA provided by one of the large utilities (typically one of the "Big-6"). The level of the discount that the utility applies to that PPA will define the level of support required to make the project economically viable. If a large utility is aware that it will be in competition with the same independent renewable generator through an auction to determine not only the level of support, but also the allocation of that support, then they will be in a position to manipulate the auction by adjusting the PPA terms they are prepared to offer.
- 11 This ability to distort the competitive price discovery mechanism will have a direct benefit to the utility, as it ensures they are more likely to be successful in the auction and if the independent renewable generator is also successful, then the utility will also receive a higher share of the revenues through that PPA.
- 12 This clearly undermines the ability of the Government to introduce a competitive price discovery process whilst independent renewable generators remain dependent on one of the Big-6 for a PPA.

The draft Energy Bill will not secure low-carbon objectives at least cost to the consumer and risks delivery of the fourth carbon budget

- 13 A central objective of the reform package is to deliver the low-carbon objectives at least cost. However, under the current EMR proposals, the RO that has driven much of the renewable investment to-date has been removed. As a direct result there is less incentive for suppliers to offer viable PPA terms and the supplier's interests are no longer aligned with the Government's low-carbon objectives.
- 14 This trend of deteriorating PPA terms due to the removal of the obligation and the lack of clear targets will be exacerbated by three factors that combine to create a strong disincentive to offer attractive terms to independent renewable generators in the UK:
 - 1) The regulatory uncertainty inherent in the scale and complexity of current policy changes (EMR, review of balancing costs, implementation of the European Target Model, and retail market review).
 - 2) Higher value investment opportunities (inside and outside of the UK).
 - 3) Increasing financial pressure in many of the suppliers', home markets.
- 15 This situation arises due to the lack of competition for PPAs between the existing suppliers and the absence of new entrants to the market capable of establishing a position among the incumbents. This creates a dearth of effective competition and PPAs terms will be driven by the commercial opportunity of the "Big 6" to extract excessive gains rather than strong competition minimising costs.
- 16 If PPA terms are driven by an oligopoly's ability to extract value rather than effective competition forcing the setting of PPA terms according to cost, then independent generators will be unable to make the returns expected by the Government.
- 17 As a consequence, if the Government is going to incentivise the deployment of low-carbon generation from independent generators, as planned in the White Paper, then this decline in PPA terms will need to be recognised in the strike price and this will increase the cost to consumers.
- 18 The result of the Government not increasing the strike price is that the independent renewable generators will be unable to play their full role in the market and there will be fewer opportunities to attract low cost-of-capital investment funds into the market which risks jeopardising the objective of achieving the Fourth Carbon Budget.

3. Direct Response to Questions raised by the call for evidence

1. Please could you provide a summary of your experiences with the PPA market over the past three years?

- 19 There has been an increasing problem accessing PPAs since the EMR White Paper was published and the Government announced its intention to abandon the obligation on electricity suppliers to source a proportion of electricity from renewables. The consequence has been an increasing reluctance to offer PPAs or the provision of null bids (through which suppliers insist on terms that are not financeable) and increasing discounts.
- 20 At the moment, the RO provides the only long term mechanism that aligns the objectives of the incumbent Big-6 generators with the objectives of the Government. The EMR does not provide an equivalent mechanism and as such there is no incentive for the Big-6 to enter into contracts outside of their own generation plant apart from the commercial ability of being able to extract excessive rent.

1 a. How many counterparties have issued responses to your PPA tenders and has this number changed? If this number has changed, what has the trend been over this period?

- 21 **There is now only one commercially viable PPA provider offering terms in the market on a reliable basis.**
- 22 In the last year there has been a significant reduction in the number of PPAs being offered to different projects. In 2007 all the bids for the tendered project were commercially viable and competition drove a very high response rate. In 2008 some responses were not viable or were unable to respond however, there were 4 commercially viable responses and these were all from the large utilities. There was a similar response in 2009 and 2010.
- 23 During 2010 the market began to change and the competition from the Big-6 appeared to deteriorate around the time that EMR was announced. By 2011 the situation had deteriorated further and currently it is clear that there is no competition in the market.

Table 1: PPA experience of the IREGG companies

[Table 1 of the original submission has been removed for reasons of commercial sensitivity]

1 b. Generically what proportion of these responses have been from utilities and what proportion from independent aggregators / non-utilities? Have you seen new PPA providers enter into the market in this period?

- 24 **The established “Big-6” utilities all offer terms that make them commercially unviable: the only viable route to market of significant size is through one European Utility that has come into the market.**
- 25 Below we have described our experience with each of the market sections. However, it is clear that the current PPA market is dependent on a single player. The Big-6 have opted to default themselves out of the market, the small suppliers do not have the credit position to support significant investment and the large industrial companies remain a niche with limited appetite.
- 26 There is one aggregator that is talking about coming into the market, and we would welcome that. However, we are not aware of any evidence that the aggregator has been able to support their words with anything concrete, and are very conscious that many other companies have expressed similar intentions and been unable to deliver on them.

Established Utilities – “Big 6”

- 27 Since the announcement of the EMR we have seen a number of the large PPA providers withdraw from the market, either through unwillingness to provide a bid or unwillingness to provide a commercially viable bid. In a recent round of tenders that occurred during the response period for this call-for-evidence none of the established utilities offered a commercially viable PPA that was suitable for long term finance. Of the four offers received each ruled themselves’ out of the market by a combination of refusing to take balancing risk, refusing to offer a floor price, or limiting the duration of the PPA offered to the end of the EMR transitions period (2017).

European Utilities

- 28 During the last couple of years we have seen one of the larger European players enter the market and take a substantial proportion of the market, and an energy major make positive noises. As recipients of PPAs, however, it is clear that these new entrants are not offering favourable terms compared to historical values. In spite of this, although they have offered less attractive terms they have averted a collapse of the market that would have materialised for a large number of independent renewable energy projects otherwise.
- 29 It is not possible to have an effective market with only one PPA provider and irrespective of the terms they offer and their willingness to offer the terms. The market will be limited as financiers have an increasing exposure to a single counterparty for a large proportion of their projects.
- 30 There is another provider that occasionally offers headline terms that appear to be financeable on paper (although unattractive). When they have offered terms they have been less attractive and as such we are not aware of any PPAs that have been signed with them and whether they provide a viable route.

Aggregators

- 31 The draft Energy Bill states that the Government “believes” that aggregators will provide viable PPAs and this will provide a viable route to market for independent generators but the Government has offered no evidence to substantiate this belief and historical evidence suggests otherwise.
- 32 [This paragraph has been removed for reasons of commercial sensitivity.]

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Large Industrials

- 33 The second development we have seen in the market is the increasing interest of large energy consumers who are looking to obtain a direct agreement with the renewable generator through an existing electricity supply agreement, although these have typically been for smaller renewable energy sites. They are able to do this as their large consumption enables them to exert significant commercial pressure on the Big-6 in exchange for a supply agreement. In return they will also receive a preferential price on a valuable product and a potential long-term shield from increasing prices. It is not clear, however, the depth or longevity of this market (it is certainly not deep enough to secure the Government's low-carbon objectives). For example, under the EMR, one of the key drivers for this new market, long-term price certainty will no longer be available.

Smaller Suppliers

- 34 The smaller independent suppliers do not have a large and established position in a 'home' market. Therefore, they have never been a viable alternative for projects of a significant size as they do not have the credit rating required to provide sufficient comfort to the financial community. There is one smaller independent generator that has suggested it can provide a parent company guarantee from a company that has a significantly stronger credit line. However the ability to offer this appears limited. Secondly, when smaller independent companies do offer terms, they are typically at a significant discount as they do not have sufficiently diverse portfolios in place to manage the risks as effectively.

1 c. Typically what length of PPAs have been offered to you in responses and if this has change how has it changed?

- 35 **The standard PPA term has fallen significantly, with one provider unwilling to go beyond the end of the RO transition period in 2017.**
- 36 Prior to the announcement of the EMR the standard PPA terms was typically 15 years and in some instances it was possible to extend this to a longer periods of 18 years. We are not aware of any organisation that pushed for shorter PPA terms than 15 years.
- 37 Recently, of those providing PPA offers, the current preference has been towards much shorter time periods often with PPA terms of less than 10 years [this part of the sentence has been removed for reasons of commercial sensitivity].
- 38 The implication of this for independent generators is that if PPA terms are limited then the ability to raise finance will also be limited - as any financial repayment structure will be constrained by the length of the PPA term. This will reduce the amount of debt they can put into a project and their ability to invest. The second implication is that this will undermine the attractiveness of the UK market to the investment and pension funds (who typically seek longer-term investment opportunities), as these funds will be unable to confidently secure a low-risk route to the market for the duration of the project life. This is in direct contradiction to the Government's stated objective of attracting long-term low-cost-of-capital finance into the UK.

1 d. Broadly, what are the sizes of discount factors that have been included in these responses and if these have changed how have they changed?

- 39 **Risk is being transferred to the generator as a result of moving from the season- or year-ahead index to the day-ahead index, whilst headline discounts have remained broadly constant.**
- 40 Across the PPAs that we were offered since mid-2010 (before the EMR announcement) the share of total revenues that was extracted from the PPA ranged from [figures have been removed for reasons of commercial sensitivity].
- 41 At the end of 2011, once the EMR had been announced and it was clear that the RO was being removed, the range had increased to between [figures have been removed for reasons of commercial sensitivity]. This change has occurred in terms of headline discounts only and makes no attempt to quantify other changes that have occurred (examples include removing balancing risk, only taking part of the ROCs, moving to short term price indices, change of law provisions or unwillingness to offer a floor price).

Discounts on Electricity

- 42 In 2008 we were able to secure PPAs with discounts of between [figures have been removed for reasons of commercial sensitivity] referenced against long-term price indices of the season- to the year-ahead. Currently the discounts are typically [figures have been removed for reasons of commercial sensitivity] but against a day ahead or within day price indices. This movement from the year-ahead price index to the shorter index is a significant transfer of value from the generator towards the PPA provider, as the shorter index price will become increasingly influenced by wind forecasts (at times of high wind output the price in the day-ahead market will fall and there will be a higher price at times of lower wind output) which will not affect the year- or season-ahead indices.
- 43 The extent of this inverse correlation between wind output and price in the day ahead market will depend on the level of wind generation built in the UK. However, using Poyry's forecasts, it would suggest that over the lifetime of a project that reaches financial close today, this could represent a loss of value to the generator of 6% (on an present value basis). If there had been effective competition, there would have been a corresponding improvement in PPA discounts offered to reflect this change in risk profile.
- 44 In addition to this, some PPA providers are providing additional steps in the level of discounts that they are prepared to offer. [This sentence has been removed for reasons of commercial sensitivity.] In the absence of competition, PPA terms will deteriorate to the point where generators become unable to invest and there will be no incentive to invest in further asset development.
- 45 [This paragraph has been removed for reasons of commercial sensitivity.]
- 46 The level of discount that is observed in these contracts is in stark contrast to the Non-Fossil Purchasing Agency (NFPA) e-Power auction results where the purchaser takes the full balancing risk for a six month period. Observing the results from July this year shows that onshore wind traded at a discount of between 1-3% compared to firm landfill gas and hydro. As this is a competitive market price, it would suggest that there is a significant additional premium being applied in PPAs to reflect risk exposure over the contract duration.

Discounts on ROCs

- 47 Whilst the change in the discount on ROCs has been less noticeable, the willingness to contract for the ROCs has changed dramatically. There are several PPA providers that are only willing to take a percentage of the ROCs generated by the project or may only take the ROCs for a limited amount of time.

Discounts on Levy Exemption Certificates (LECs):

- 48 Similarly the discount on LECs has changed significantly, with typical discounts historically being X% [figures have been removed for reasons of commercial sensitivity] (or in some cases no discount). Current discounts available are [figures have been removed for reasons of commercial sensitivity] but with some providers only willing to offer [figures have been removed for reasons of commercial sensitivity]. Therefore, it can be seen that since the announcement of the EMR, the ability to obtain a competitive and viable PPA has been diminished, with increasing risks being placed on independent generators with either no change or increased discounts from the underlying reference prices.

1 e. Have floor price levels and conditions changed and if so, how have they changed?

- 49 **Floor prices, once common place, are now no longer available from the 'Big-6'.**
- 50 Since the financial crisis in 2008 a floor price has been a basic requirement for all PPAs. This could either be a floor price directly for the electricity revenue or a blended floor price comprised of both ROCs and electricity.
- 51 Until recently a floor price was widely available with only one of the major PPA providers unwilling to offer a floor price in their PPA contracts.
- 52 In a recent tender, however, three of the Big-6 were unwilling to offer a floor price for the duration of the PPA, [this section of the sentence has been removed for reasons of commercial sensitivity]. It is not clear whether this is due to an increased perception of market price risk or whether it is a desire to effectively nullify their PPAs from a banking perspective.

1 f. Has the nature of risk allocation relating to imbalance, change of law and collateral changed and if so, how has it changed?

- 53 **The recent experience of PPA negotiation can be summarised as a 'death by a thousand cuts' with the continual transfer of risk from the PPA provider to the generator at every opportunity.**
- 54 In the section below we have tried to give an overview of the main points that have changed in the PPA terms, although, these only capture the major points. PPA negotiations are taking longer and are more expensive as a result an endless stream of small adjustments and negotiations on terms that were taken for granted until recently. This increases the costs and undermines confidence.

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Balancing Risk

- 55 Balancing risk is a critical issue for all generators as it defines the cost of having a difference between the contracted generation position and the actual generation. In the GB electricity market the balancing market is particularly complex and is designed to be particularly penal to encourage generators to meet as far as possible their contracted position.
- 56 Under its current structure the complexity of the balancing market and its penal nature make this risk impossible to accept by financiers. With the uncertainty presented by the current OFGEM balancing mechanism review this perception of risk is increased significantly.
- 57 This risk is a fundamental concern to intermittent generators that have less direct control on the output of their plant. This risk is less of a concern within the context of a broad system or large portfolio where differences can be balanced. However, for an individual generating plant it presents a very significant risk.
- 58 Independent generators do not have flexible thermal assets or energy trading risk management systems nor do they have energy traders or risk managers required to understand or manage balancing risk. Costs of establishing such a capability is prohibitive for independent generators and if the equity owner cannot contract out this balancing risk the project will not attract debt and will not be financeable.
- 59 Normally the balancing risk is one part of the discount that is included in the PPA. However, it is noticeable that at some large utilities will not offer a PPA that includes balancing risk and this renders the PPA non-financeable. It has been suggested that this is due to the potential impact of changes in the balancing mechanism. However, if this was the case then they should have improved their terms. The fact that these remain the same as other PPA providers suggests that they simply want to nullify their PPA.

Change of Law

- 60 Negotiations over change of law provisions have become significantly more complex as a consequence of a lack of competition in the PPA market. PPA providers have become far more determined to push change of law risks on to the independent generators where previously they would have been accepted by the PPA provider. This has been to the point that it can make it difficult or even impossible to finance a project. These openers make it very difficult to secure financing as the banks struggle to get comfortable with the fact that future project revenues can be materially changed on, what in some instances are, hair line triggers. Two recent examples include;

[The two examples given in this submission have been removed due to reasons of commercial sensitivity]

- 61 The willingness to accept change of law provisions is an inevitable consequence of the regulatory uncertainty that exists with the introduction of the EMR and the political uncertainty that has arisen as a result of media speculation and the protracted uncertainty that surrounded the RO banding review. However, the lack of competition means that these terms are being increasingly forced on to generators, increasing the cost of financing project, and undermining its viability.

1 g. Have financiers become more or less risk averse and if their risk appetite has changed, how has this impacted the PPA terms they are requesting to secure project finance?

- 62 **There is increased scrutiny on certain provisions as a result of the regulatory and political uncertainty. However, the overall requirements of a PPA have remained constant since the financial crisis.**
- 63 As a direct result of the financial crisis in 2008, the vulnerability of banks to specific risks and the resulting requirement for the banking community to manage risk exposures more strictly resulted in a change in financial terms to make them more risk averse. As such, following the financial crisis, most financiers have required a floor price to be in place within the PPA. This requirement, however, predates the introduction of the EMR and therefore does not account for the change in the PPA terms.
- 64 Related to the floor price are the limits of liability that are acceptable to the financiers. These limits provide a cap on the exposure of the PPA provider in the event that they should default on the contract and is often determined as a multiple of the floor price. Inevitably the generator and their financial backer look to have a higher limit on their liability. Again these limits of liability have been required and predate the introduction of the EMR so do not account for changes in the PPA terms. However, while the actual liability caps have not changed, banks have become more nervous about the increasing demands from suppliers in change of law negotiations. The result is a shortage of banks willing to lend. Moreover, the banks have also expressed concern in their potential exposure to a single off-taker.
- 65 A second implication of the financial crisis has been the resulting pressure on national support mechanisms and the potential exposure of the financial community to changes in support, particularly after the experience of Spain. Whilst the UK has maintained a strong reputation for grandfathering projects this inevitably increases the focus on change of law clauses and risks, which might have been acceptable prior to the financial crisis, are no longer available. The focus on these change of law clauses have been further sharpened by the regulatory uncertainty created by the EMR and the wish of some utilities to pass a significant proportion of change in law risk to generators.
- 66 A more recent change in the financing of projects has been a change in the tenor of the debt term. This is as a direct result of changes arising from Basel III and the disincentive that these new regulations provide to maintaining significant long-term debt exposure on the bank's balance sheet. As a result banks have been less willing to provide longer-term debt terms, rather they look for short-term debt and look to encourage project refinancing part way through the project life. This should have no implications on the PPA terms that the utility is willing to offer.

2. Have you seen significant changes to the PPA market over the past three years, and if so what do you think has driven this? If you have asked PPA providers for explanations of why changes have occurred what reasons have been provided?

- 67 **It is clear that the removal of the obligation has removed any long-term investment signal that links the strategic aims of the 'Big-6' with long-term aspirations of the Government and the long-term finance requirements of independent renewable generators.**
- 68 As we made clear in the preceding section we have seen significant changes in the PPA market and the willingness of the Big-6 to enter into a PPA. The reasons behind our conclusions are:

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Removal of the Renewables Obligation: Risk of being long in ROCs

69 It is very clear that the removal the RO is a central factor in the changes in the PPA market. Prior to the announcement of the EMR there was an expectation that the headroom mechanism would continue to drive investment in renewables and that the increase in the cap would enable the utilities' own investments to be absorbed into the market. With the removal of the obligation and the annual increase in the headroom mechanism ending in 2017, this can no longer be assured.

70 [Paragraphs 71- 79 of the original submission have been removed for reasons of commercial sensitivity].

Removal of the Obligation: Strategic Objectives

71 With the removal of the RO, there is no longer a clear strategic reason for utilities to invest in renewables. Therefore, their strategic objectives are no longer aligned with the Government's strategic objectives of delivering a low-carbon economy.

72 As a result of this misalignment, utilities are likely to revert to their default position of investing in natural gas CCGTs. These have a low upfront cost of capital and the risk of increasing gas prices can be passed directly on to the end consumer through higher bills.

73 This then opens up the question of compliance benefits and why in the absence of any long-term incentive that aligns the objectives of the utility with Government policy would they want to offer a PPA to a smaller renewable generation plant? These PPAs are administratively burdensome to operate, can be complex to negotiate, expose the utility to an uncertain market risk and provide relatively little absolute value compared with investing in their own generating equipment.

Removal of the Obligation: Financial Benefits

74 A number of PPA providers have argued that there is no financial benefit from the RO and as a result it does not influence their willingness to offer a PPA in the current market. Whilst we accept the financial benefit of achieving RO compliance may be limited in the current market, it is a financial benefit none-the-less and as a result alongside the compliance objectives encourages PPAs to be offered where otherwise they would not be.

75 We are aware that several utilities have argued that the obligation is a soft obligation as they can buy their way out of it and therefore it does not incentivise PPA terms. This would appear to be at odds with the position before the EMR was announced where it was difficult to separate the electricity from the ROCs. On several occasions before the financial crisis (it is unlikely that this would be possible now) members of the group tried to raise the option of entering into an electricity only PPA with utilities. This would enable them to then avoid the discount imposed by the utilities and to sell the RO elsewhere (such as through the NFPA auction site). This was never acceptable to the utilities involved and it was clearly stated that the value was considered to be in the ROCs rather than the electricity.

Balance sheet impacts of entering into a PPA

76 It has also been suggested that one of the reasons why utilities have become less keen on entering into a PPA is due to the impact on their balance sheet. Whilst it is clear that there is a balance sheet implication of offering a floor in the electricity contract, as it presents an open liability, this is up to the limits of liability that was discussed previously. With increasing financial pressures on many utilities this has become a more pertinent issue since the financial crisis and with the unexpected change in the nuclear phase out programme in Germany.

77 However, it is clear that all investment will have a balance sheet implication. A utility would prefer to maintain their balance sheet strength or to use their balance sheet to make investments in its own equipment. Using their own balance sheet to make investments provides greater growth benefits and returns to their own shareholders rather than open up the market to new insurgents and competition.

Projections of demand

- 78 A further reason that has been suggested for a reduction in the willingness to offer a viable PPA is that the electricity market as a whole may be long as a result of demand destruction in the recession. Whilst it is correct that there has been a reduction of demand (DUKES shows that in 2011 total consumption was 326 TWh compared with 351 TWh in 2007) this is not expected to be a lasting situation. Rather the projections presented in the Fourth Carbon Budget show a dramatic and continuing increase in electricity demand to over 450 TWh in 2030 as result of the electrification of heating and transport necessary to bring about the low-carbon economy. Furthermore, this takes a very short term view and overlooks the closure of plant under the Large Combustion Plant Directive (LCPD), Industrial Emissions Directive (IED) and the phasing out of nuclear.

Implications of Basel III & CRD IV

- 79 It has also been suggested that the Basel III and Capital Requirements Directive (CRD IV) will have the impact of putting financial pressure on the utilities and that this will increase the cost of providing a PPA and their willingness to provide a PPAs. There appears to be two aspects of this that have been highlighted by McKinsey. The first is an increase in the cost of unsecured debt and corporate facilities which McKinsey has estimated could increase the cost of structured finance and unsecured loans by approximately 60 basis points. This is not expected to feed through to the cost of PPAs.
- 80 The second impact is the potential impact on trading financial securities such as derivatives, where the CRD IV has brought about a change in the assessment of the value of risk arising from holding derivatives and therefore is likely to require the utilities to hold greater capital stocks to avoid impacting their credit rating. McKinsey estimate that the cost implications of this could be 85 basis points and depending on the trading strategy of the utility then this could feed through to the costs of the PPA.
- 81 However, the implications for derivatives is likely to have a far more fundamental impact on the cost of trading post EMR implementation as the contract-for-difference is likely to be considered a derivative and it will therefore have a far more significant impact on the willingness of aggregators to enter into the market. This risk highlights the concern surrounding the availability of PPAs post EMR implementation rather than current PPA pricing policing where it is amalgamated into a basket of trading and in-house service provision.

3. How does the GB market for PPAs compare to other international markets? If you operate in other markets, how do PPA terms structures and terms differ? If terms differ what are the drivers behind the differences?

- 82 **Direct comparison between markets is likely to be misleading, however, costs are significantly lower, transparency is much higher, and competition is much more effective in Nordpool compared to the UK**
- 83 As well as the GB market, we also have active experience in the development of onshore wind projects in Norway and Sweden, which operates under Nordpool (a market that extends across the Nordic countries). It is clear that the market for PPAs is fundamentally different, particular differences include:
- a) The cost of PPAs are significantly less in Nordpool relative to the UK. In the UK a PPA costs the generators approximately 10-17% of their net revenue, in Nordpool the equivalent cost is between 2-6%. This is in a market where prices are typically lower than in the UK, so absolute values are significantly higher in the UK.
 - b) Much greater competition for PPAs. There are a large number of participants operating in Nordpool (>130) who are and do provide aggregation services. These represent a wide variety of different organisations operating from conventional banking institutions and finance/investment banks to trading companies and large energy companies. This provides much greater competition for PPAs compared to the 40 companies that are registered under N2EX in the UK which may be less actively involved.
 - c) PPAs in Nordpool have a much higher level of transparency. Typically PPA pricing structures are clearly separated into identified costs of volume risk, balancing risk and management costs. This level of information provides much greater clarity to generators and combined with greater

competition allows generators to negotiate much stronger PPA terms. Typically the cost of balancing in Nordpool is in the region of € 1.00 - € 1.30 / MWh and a management cost of between € 0.3 – € 0.5 / MWh. This compares to the UK where these different costs are lumped together into a single discount and the true costs of balancing either has not been explicitly defined by PPA providers or is being tightly held commercially confidential.

- d) The structure of the PPA is typically a fixed price against a long-dated forward product (i.e. a sale of electricity for the next 5 years at a given price). This is possible in Nordpool as there is a much greater level of liquidity throughout the forward curve.
 - e) In Nordpool the banks are more comfortable lending beyond the fixed term of the PPA as there is clearly much greater depth to the market and much greater competition. This gives banks confidence that there will be a reliable route to market beyond any fixed term, although there is an additional risk associated with this and banks terms are typically more stringent with higher cover ratios and less debt overall being put into projects.
- 84 Fundamentally this difference is possible as Nordpool is a much deeper and more liquid market which results in generators being able to hedge against the volatility in the pool price and imbalance. For example, every physical MWh inputted is traded 6 or 7 times before it is physically delivered, significantly more than the UK market which is just over 3¹. A more extreme difference is apparent on the exchange traded volumes which are between 85% and 400% of demand compared with 4-9% in the UK (NB: This analysis is from the OFGEM 2010 and will not include recent initiatives to improve trading on N2EX. However, we are not aware of these figures being recalculated more recently).
- 85 A part of the reason why Nordpool is deeper and more liquid is due to the characteristics of the market. Specific differences include:
- a) A much more fragmented market structure. The supply side in particular is much more fragmented than the UK market with many suppliers being local municipalities. Due to this fragmentation the demand for trading and balancing services is much greater. In contrast, in the UK the supply market is dominated by the Big-6 of who control almost 94% of the total supply and of the remaining 6% the majority of the supply is already long in generation and, therefore, less likely to offer a PPA. Only 2.6% is likely to be interested in a PPA, and many of these will be too small and not have a financeable credit rating or serving larger companies and be unable to commit to long term PPAs (figures provided by Poyry).
 - b) Fundamentally different market structures. Nordpool is a financial market up until the day ahead when it becomes a physical market. This encourages a very liquid day ahead auction market, where approximately 70% of the demand is auctioned creating a deep and liquid pool. This compares directly to the bilateral market in the UK where physical contracts are signed earlier and as a result may not re-enter the market and only approximately 5% of demand is traded in the day-ahead auction. As a result a wind generator in the Nordpool market has certainty that it will be able to sell its power with the ability to fix or hedge its position and mitigate its risk against price volatility and imbalances over a fixed tenure.
 - c) Within day liquidity in Nordpool (the ELBAS Market) is higher than in the UK with larger traders contracted as market-makers to provide a defined bid-offer spread and improve liquidity. This is one of the options considered under OFGEM's liquidity review that was subsequently ruled out.
 - d) Less punitive balancing mechanism exists in Nordpool compared to the UK. This reduces the barriers to entry for new entrants and aggregators.
 - e) Single trading platform concentrates liquidity on a single exchange, rather than the multiple exchange structure in the UK. This may be partly addressed cosmetically by the creation of the GB hub but the markets will remain separated and therefore the advantages of liquidity will be limited.

¹ Ofgem, Retail Market Review: GB Wholesale market liquidity update, 16th July 2012

4. How (and why) do you expect these to change over time?

- 86 **There are structural factors that present a barrier to new entrants coming into the GB market and the effective competition that would bring. Whilst these remain unaddressed market participation is unlikely to change.**
- 87 With the formation of NETA it was expected that the new trading arrangements would specifically encourage aggregators into the market and they were an important focal point of discussion surrounding the design. Since its inception, however, market participation has declined dramatically such that only 6 independent suppliers of significant size remain in the market. During that 10 year period, 20 independent suppliers have either been unable to survive or been bought out by one of the large utilities. There is nothing fundamentally changing that suggests that this process of increasing concentration in market power will change without specific regulatory intervention beyond that which is already proposed and even current proposals will not be enabled before the EMR comes into force.
- 88 As it stands there is no effective and sustainable business model available for aggregations services in the UK market. There are a number of specific factors that discourage participation in the GB market which are identified for new suppliers, aggregators and balancing services providers below:

New Suppliers

- 89 As the majority of the supply side is dominated by the six large utilities who control up 94% of the market, there is limited potential for new suppliers to come in and compete, except in the very fluid large consumer market. However, this market is fluid precisely because it is very price sensitive. Therefore, there is a mismatch between the long-term PPA requirements of independent generator and the short-term supply contracts which they enter into with customers. This limits their willingness to offer long-term PPAs in case they are outcompeted by one of the incumbents in later rounds.

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Aggregators

- 90 The draft Energy Bill states that the Government “believes” that aggregators will provide viable PPAs and this will provide a viable route to market for independent generators but the government has offered no evidence to substantiate this belief and historical evidence suggests otherwise.
- 91 Aggregators provide risk management practices and look to manage risk along the forward curve. They look to gain access to a diverse portfolio of generation and demand to mitigate and manage risks. With the EMR putting the majority of new generation into the day ahead market, the potential for risk management services is largely removed (as everyone wants to achieve the day-ahead market reference price) and there is limited potential for forward trading and risk management services that may (if other issues such as liquidity were resolved) attract aggregators.
- 92 Secondly, as we discussed previously there is a stark contrast between the UK market and Nordpool. Nordpool has many more supply side entities actively involved in the market allowing greater scope for aggregators to play a role in the market offering risk management services and managing that risk in a fully diversified portfolio that includes generation and demand.
- 93 Given that the majority of new generating equipment is likely to be built either by the existing Big-6 or by the independent renewable energy generation developers then this provides a very limited market entry point for aggregation services. As the Big-6 do not require aggregation services, any portfolio that an aggregator is able to establish is likely to be heavily biased towards onshore wind and intermittent renewables rather than establishing a fully diversified portfolio that enables them to manage their risk effectively.

Balancing services Brokerages

- 94 The provision of balancing services in other markets such as Nordpool is typically a low margin service provision and run on the back of broader aggregation and risk management services. As such it is unlikely that the larger aggregations services (that have the balance sheets that can support long term PPAs) will be attracted into the market and any brokerage services offered will remain a small boutique section of the market.

Market Barriers to entry

- 95 This absence of a sustainable business model available for participants in the UK market is then exacerbated by market specific factors that increase the risk and cost of operating in the UK market and provide a significant barrier to entry. These can be summarised as;
- a) **Complexity and cost of Energy Trading:** The assets, systems and people required to risk manage a company through the complexity of the UK's energy trading arrangements are significant and a major barrier to entry. If you are out of balance then it can cost the company a significant amount of money.
 - b) **Regulatory Risk:** The UK market is characterised by dramatic policy intervention that can quickly change and undermine business models – cash out arrangements, liquidity reviews, EMR, potential zoning etc - this can discourage new entrants into the market whilst these uncertainties remain unresolved and proven to be working effectively.
 - c) **Trading and Liquidity:** Liquidity is significantly worse in the GB market, and whilst headlines suggest that it has improved over the last 6 months, these are based on voluntary agreements and can be rapidly withdrawn. Secondly, reviewing the trading behaviour that is available to us suggests that trading behaviour is such that it increases the headline volume, whilst providing little practical benefit to encourage smaller players (and could suggest intra-company trading). Reviewing the trades that have occurred over the last 3 weeks it is noticeable that:
 - i. **Clip Sizes:** almost 80% of trades shown on N2EX have been of clip sizes of 50MW or more. The majority (70%) was recorded as trades of 50MW. This size of trade is not conducive to small participants and managing the balancing of smaller portfolios which may have a large proportion of wind.
 - ii. **Intra-day trading:** Intra-day trading is going to be extremely important for managing basis risk under the CfD. Currently approximately 1% of total demand volume is traded in the intra-day market (N2EX and APX).

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- iii. **Timing of trades:** Almost 90% of trades occurred before 9am with over 60% occurring before 8am. This is a pattern that has been confirmed by N2EX who have informed us that the most liquid trading period is between 07.30 and 09.00. Furthermore there are clear patterns of trading when a series of trades will occur during a very condensed time period. On one example day, 148 trades took place between 7:30 and 8am, 98 trades were then registered as occurring in the rest of the day. This suggests that trading patterns are limited, potentially computer driven, and that the headline traded volume figures may create a misleading impression of actual behaviour.
- 96 Just to set up the physical systems that will enable you to trade effectively costs between £1m and £1.5m. This is before the cost of providing sufficient collateral with Elexon, NG and the financial community which allows you to actually trade physically, and then there are the staff costs and the time it takes to become established in the market. This creates a very significant barrier to entry in a market where it will be difficult to build significant volume as a result of the dominance of six vertically integrated companies.
- 97 As a result of these barriers to entry and the lack of a sustainable business model for new entrants we have very low expectations that participation in the market will fundamentally change. Even though there appears to be significant margins that could be eroded, new entrants will be unable to provide that vital competition as a result of the barriers to entry and costs of trading.

5. receive and if so how do you believe they will change? What do you think is the primary driver for these changes?

98 The removal of the obligation will allow PPA terms to deteriorate further and the Governments expectation of new entrants entering the market to drive competition is incorrect

99 From the response that we gave to question 2 above it is very clear that under the EMR, independent generators can have little confidence that there will be a viable PPA available for them to finance to finance their projects. Either the PPA may be unviable because PPA providers are unwilling to provide financeable terms or it may become unviable because the value extracted by the PPA providers significantly exceeds the costs allowed for when setting the strike-price.

100 In the call for evidence the Government suggests that there are a number of drivers that will increase the attractiveness of PPAs. Below we have set out a table listing some of the Government's assumptions for assuming that PPA terms will improve and why they are incorrect:

Comment given in the call for evidence	Reason why this is incorrect
"compared to the RO, the CfD is likely to result in a simpler PPA as we expect the PPA to just cover power and associated flows"	<p>It is wrong to assume that the RO significantly increased the complexity of the PPA. The complex negotiations on the PPA are focused on the risk management, change of law and limits of liabilities. Prior to the introduction of the EMR the discussion around the RO was a relatively straightforward negotiation of shares.</p> <p>It has been argued that because the CfD does "the heavy lifting", that the PPA for the electricity will be simpler and more cost effective.</p> <ul style="list-style-type: none"> Firstly if the PPA is required to cover both the payments of electricity and the payments of the CfD (as is likely to be the case under the proposed contractual structures) then the "heavy lifting" is still on the books of the utilities and therefore there is no direct benefit. Secondly, utilities are more interested in large offshore wind farms, which deliver scale and the potential for greater returns. The inability to source viable PPAs for independent generators is likely to have a disproportionate impact on onshore wind delivery and this will increase the cost to the consumer of meeting our low carbon targets. <p>The one advantage of the CfD that may make it more likely for a PPA provider to provide a PPA is that the requirement for a floor price on the electricity price is likely to be removed, which may allow some improvement in the risk profile. However, recent experience shows that there is no evidence to suggest that this benefit will be passed on to generators in the absence of effective competition.</p>
"combined with there no longer being a requirement to monetise the ROC this may make the market more attractive to independent aggregators"	<p>Given the evidence presented earlier it is clear that the risk of monetising the ROC has only been created as a result of the removal of the obligation and the risk that the market will be defined by a single buyer short on their obligation.</p> <p>Prior to the announcement of the EMR it was very difficult to separate electricity and ROCs within a PPA, demonstrating that the ROCs were more sought after than the electricity in order to fulfil their obligations. Furthermore brokers were actively interested in sourcing ROCs independent of the electricity.</p>

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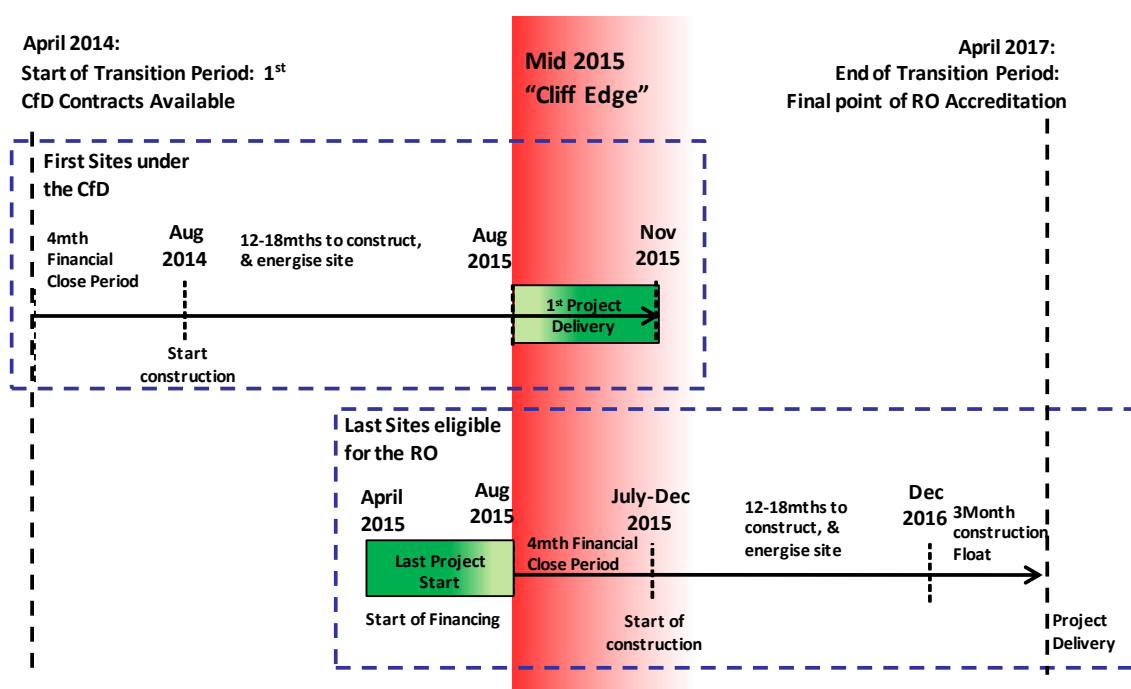
Comment given in the call for evidence	Reason why this is incorrect
“independent aggregators are already in the market and it is notable that a large European Utility won the majority of PPA business during 2011”	<p>It is unreasonable for DECC to point the existence of aggregators in the market and claim that this is sufficient evidence of the market working.</p> <p>The European utility that is mentioned has taken a leading position, as a result of a lack of viable PPAs from other participants. Overall the terms have declined significantly and the entrant is now increasingly reluctant to offer new PPAs. This single entry prevented a complete hiatus in the PPA market last year and cannot be relied upon to sustain the market going forward.</p> <p>There is an aggregator that is making significant noises about coming into the market. However, it is clear that they do not have a product at the moment and it currently cannot clarify what sort of products they will be willing to offer in the EMR world.</p> <p>We have spoken to others that are certain that the business model does not exist in the UK, for them to provide these services and some of the reasons they have given have been elaborated on above.</p> <p>Finally of the UK based aggregators that have been operating in the market, they are trading off the back of existing PPAs, precisely because they are unable to manage the full risks associated with balancing.</p> <p>We see no evidence that there is a long-term sustainable business model for an independent aggregator in the UK market.</p>
“We consider increased liquidity as critical to maximising the opportunities for independent aggregation. Other reforms including cash-out arrangements are also likely to be important factors”	<p>Liquidity is critical but by itself is insufficient. OFGEM have been very clear that the purpose of the liquidity reforms is to improve conditions for independent suppliers and improve their ability to access longer-dated products. If these reforms are successful, then true competition will still take a long time build and grow. However, the current indications are that these liquidity reforms appear to be stalled.</p> <p>Other reforms that have been suggested in the cash-out reforms process are sharpening the cost of balancing. This will increase the risk and cost of imbalance and make it harder to attract aggregators into the market.</p> <p>It may be possible to improve the balancing arrangements for renewables. However, this will take at least 5 years to propose and fully implement.</p>
“The government believes in the medium to long term there will be incentives to offer PPAs because there are commercial opportunities in providing risk management services”	<p>These incentives have always been there, the fact is that they have not been sufficient to attract new entrants into the market because of the risks involved.</p> <p>The resulting basic premise should be that these conditions do not develop quickly enough as they have not developed over the last 10 years. The Government should present evidence on why it thinks things will differ this time.</p> <p>The question then becomes how significant does the commercial opportunity have to be to either entice new entrants into the market or incentivise utilities to offer a PPA and is the Government prepared to pass this cost onto the consumer.</p>
“large suppliers will also have an incentive to offer PPAs linked to the CfD reference price. This would provide a hedge against their exposure to CfD top-up payments”	<p>It is a completely false premise to suggest that this provides any incentive on the supplier to provide for a PPA.</p> <p>Presumably, the rationale for this argument is that by entering into a contract with a renewable generator that feeds directly into the day ahead market that a supplier will be able to mitigate their exposure to the variable CfD element and generate a fixed value (the CfD strike price) to charge onto their consumers. Whilst with a gas fired generator, there would be a mis-match so they would be more exposed.</p> <p>If this is the case, then it is would not provide any incentive. The supplier can match the day ahead plant with their coal or gas plant and achieve exactly the same impact without entering into a PPA and without incurring any of the balancing risk.</p>

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- 101 For the reasons listed above, independent generators are not confident that these drivers are substantive enough to create the competitive PPA market that will ensure an accurate reflection of costs. Furthermore in some cases we would question whether these drivers exist at all.
- 102 Without real and substantive competition driving viable PPAs then independent generators will face an absolute cliff edge in 2015, despite RO eligibility running out two years later in 2017. In order to be accredited for the RO the generator has to be operational and exporting electricity. To be certain of reaching this point, they need to have started financial close approximately 2 years beforehand to allow time to construct the plant.

Figure 3: RO Transition Period.



- 103 After 2015 any plant that reaches financial close will be unable to export electricity before the closure of the RO mechanism and will therefore be locked into the CfD structure. For any project that is starting financial close and looking for non-recourse finance (typical of the independent generators in the electricity sector) then there has to be certainty on the contractual structures that will govern the projects' cashflows over the life of the project (or at least the tenor of the debt).
- 104 The drop off in onshore wind development could begin as early as 2013 as a consequence of the three-year plus period for design, planning permission and condition consents. To avoid obvious consequences for the UK's supply chain and jobs, it is vital that the uncertainty created by EMR is addressed and a viable route to market secured for independent renewable generators.
- 105 This deterioration in the current PPA market is occurring now because the obligation is being fixed alongside the introduction of the EMR. This introduces new risks for utilities, which increases the cost associated with having a long-term surplus in ROCs in 2017.
- 106 The deterioration in PPA terms that has arisen from the reduced Renewables Obligation (RO) appetite demonstrates what will become a downward trajectory when the obligation is entirely removed under the EMR. Suppliers will be able to command a larger share of the revenue stream and independent generators will be forced to accept a reduced share of that revenue stream.
- 107 As a result of this reduced share of revenue, the Government will either need to increase the "strike-price" to account for the higher share of revenues taken by the vertically integrated utilities (with consequences for household bills), or independent generators will be unable to operate in the market (with consequences for the Government's objective of securing low-carbon generation at least cost)
- 108 The Government cannot afford to wait until 2015 before taking action. It is crucial that the CfD contracts are seen to be robust by investors, that the dispute resolution procedures are effective, that the market reference price is reliable and that a secure PPA provides a viable route-to-market for the electricity. Uncertainty around any of these key issues will increase the perception of risk and the associated cost of capital. The absence of any of these key issues will not make the project financeable.

6. What has been the determining factor in selecting a preferred PPA and PPA provider

- 109 There are several essential factors which determine whether a PPA provider is suitable or not for a long term PPA. These include:
- a) **Credit Rating.** BBB+ credit rating is the minimum that banks will finance against. If the credit rating is reduced, then sufficient collateral would need to be placed instead.
 - b) **Transfer of Risks.** It is extremely important that the key risks: balancing risk, trading etc. are all transferred through the PPA to the supplier.
 - c) **Length of PPA term.** As the debt will be sized on an equivalent tenor to the PPA, a 15 year PPA is considered preferable.
 - d) **Level of discount.** Whilst this is an easy headline differentiator, it can be misleading if it masks risks that are embedded within the rest of the document.
 - e) **Rapport.** It is very easy for a PPA provider to provide a notional PPA with terms that are clearly difficult to finance and then be either exceedingly slow or unwilling to negotiate on them. As a result certain PPA providers have a reputation for being uncooperative and may not be approached as often.
 - f) **Floor Price.** The floor price is important as it is used to size the debt under the finance agreement.
 - g) **Reference Price.** This is dependent on the equity investor, some investors prefer the security provided by a year or season ahead reference price, other investors may be willing to take a higher risk of the day-ahead market if the discounts are adjusted appropriately.
 - h) **Change in Law Provisions.** That these are fair, equitable and reflect the commercial understanding of the PPA.

- 110 The critical issue that rules parties out is therefore the credit rating of the company holding the PPA. It may be that a parent company guarantee can be arranged to a larger parent company, and this may satisfy the credit requirements, however, this can often be complex.

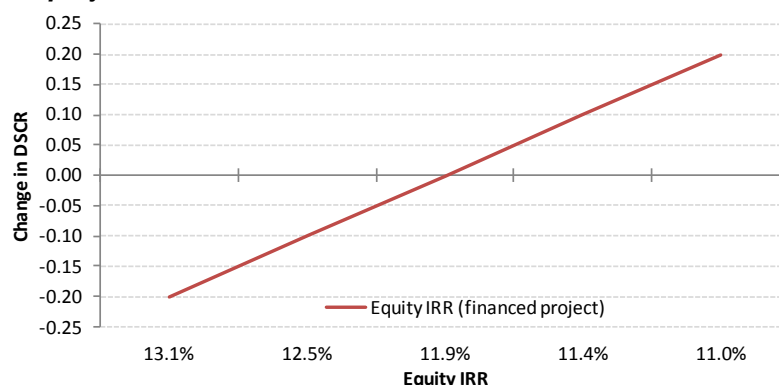
7. Have you seen a change in investment returns as a result of the changing nature of PPA terms and can you provide an example, including how this has been calculated? Do you expect the EMR Package to change investment returns and if so what is the driver for this?

- 111 **Investment returns have diminished directly as a result of the changing nature of the PPA, and will continue to do so as the PPA deteriorates under the EMR.**
- 112 For onshore wind projects and subject to the level of strike price, we would expect the EMR package to have a downward impact on investment returns. Our experience of onshore wind projects under the RO mechanism is that projects are able to raise sufficient finance to make the business case robust (debt ratios of greater than 80% is common). We do not envisage the EMR reforms provide greater clarity or confidence to the onshore wind sector and indeed in the short to medium term expect it to have a negative impact on investment returns
- 113 Whilst in principle the EMR has the ability to enable greater certainty on revenues, under the existing RO independent generators have been able to raise funding for projects and achieve robust debt to equity levels. The RO has stimulated demand for wind energy projects, through supplier obligations, which previously provided for a “relatively” competitive PPA market place with an appropriate allocation of risk between the PPA provider and the generator.

Risk transfer

- 114 As competition for PPAs diminishes with the removal of the RO, there will be a continual transfer of risk from the PPA provider to the generator. PPAs will no longer be financeable (as in the instance where the PPA provider refuses to accept balancing risk) or the finance community will apply more onerous terms (lower gearing, higher cover ratios, shorter tenor etc).
- 115 This change in financial terms is likely to significantly outweigh any benefits associated with revenue stability. Whilst we cannot provide precise estimates as to the impact on financial terms, the level of risk is normally reflected in the debt service cover ratios (DSCR) applied to a project. The figure below shows the implication of changing the Internal Rate of Return (IRR) by reducing it (ie reducing the risk exposure of the generator and hence the finance provider) or increasing it (ie increasing the risk exposure through a less secure PPA). This has been benchmarked off terms that are currently available in the market.

Figure 4: Change in project IRR under different debt service cover ratios



116 Figure 4 shows the impact of passing risks on to a generator in a manner that leads to a change in the DSCR that banks are prepared to offer. This has a significant implication for the amount of debt that can be raised and a resulting impact on the return to the equity investor with approximately a 0.5% reduction in IRR for each 0.1 increase in the DSCR.

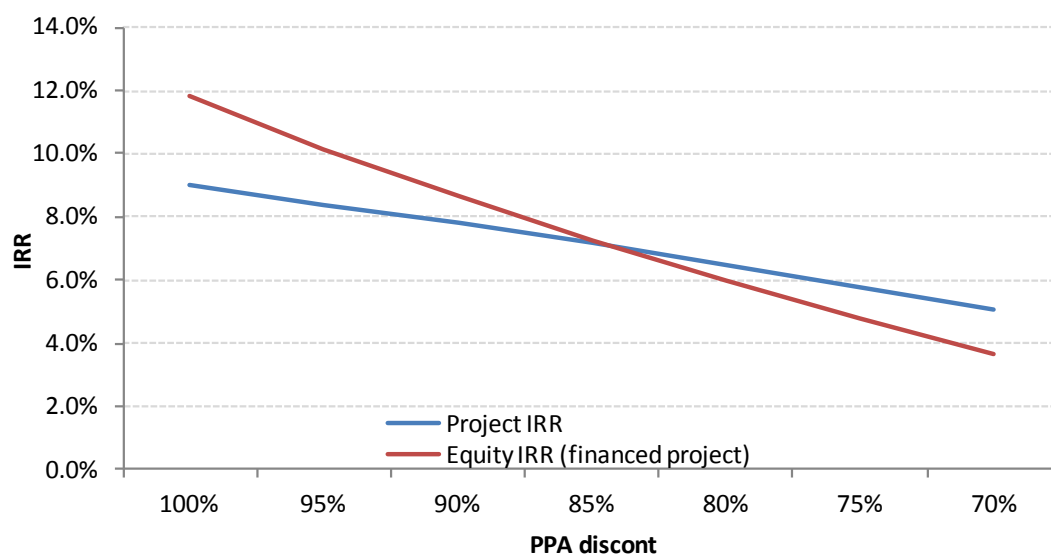
117 Under the CfD regime and the continued transfer of risk from the PPA provider to the generator the finance terms are likely to deteriorate and less debt will be raised. We do not see any additional finance for our projects being available without intervention from Government to resolve the lack of competitive tension between PPA providers and ensure that risk remains with the PPA providers rather than off-takers.

Discounts

118 The second implication of deteriorating competition between PPA providers is the continuing erosion of PPA terms and discounts. These can cause a rapid deterioration in the investment returns, particularly for highly leveraged projects.

119 In the figure below we have assumed that the strike price is set correctly such that a project is able to realise a 9% project return having taken into account the cost of operating a windfarm and the associated costs of trading in the electricity market and balancing. The equivalent equity return after financing increases the IRR to 12% (the returns to the equity provider needs to be higher as they are concentrating the project risks on a relatively small slice of equity, in return for introducing long term non-recourse finance into the project). This figure shows how sensitive the return is to additional value being extracted through the PPA.

Figure 5: Change in project IRR under different PPA terms.



Note: These figures are based on the capital cost, operating cost and energy yield assumptions as set out under the ARUP report, the strike price has been set to provide a 9% project return (in line with ARUP) and then current bank-financing terms have been applied.

- 120 Figure 5, clearly demonstrates the sensitivity of the investment returns to the PPA, the cost of trading, and how accurately this is reflected in the strike price. For projects without third party project finance (as typically invested in by the Big-6 or other European utilities) a reduction of 5% in revenue leads to a reduction in return by 0.6%. For projects that have third party project finance then a reduction in revenue of 5% leads to a reduction in the return to the equity investors of 1.5%.
- 121 Given the Government has realised that the large utilities have limited capacity to invest in new generation equipment and one of the central objectives for EMR is to increase the amount of third party finance and investment funds that are investing in the UK, it is critical to ensure that their equity partners can make an adequate return for the risks they are incurring. Figure 5 demonstrates how quickly those returns deteriorate if excessive value is extracted through the PPA.

8. What are your views (costs, benefits and risk) of the potential options discussed in this call for evidence that are necessary to achieve the Government's objectives

- 122 **The market led initiatives will not work, and the competition measure will not have an impact or be implemented in time. A regulated intervention is essential to deliver the Government's objectives and correct a current market failure.**
- 123 In the table below we have identified the respective costs, benefits and risks associated with each of the proposed solutions. As it stands, however, the market is broken and as a result the market-led options are insufficient to correct a fundamental market failure. Similarly, neither of the competition measures are sufficiently targeted at the market failure or are able to be implemented in sufficient time to enable an effective correction in the time available.
- 124 Of the options presented by DECC the only mechanism that we believe would be viable is the PPA provider of last resort, provided it is framed around certain core principles. This has to come into force alongside the first CfDs, to allow for an effective route to market should the PPA market come to a complete hiatus. We go explore the key requirements for this option in further detail in Section 10.

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Initiative	Cost	Benefit	Risks
Market Lead Options			
Establishing PPA contract models	<ul style="list-style-type: none"> • Very low cost but completely ineffective. • Independent renewable generators will not be able to operate effectively in the market. • The Government will fail to meet its objectives of attracting low cost of capital investment into the country. 	<ul style="list-style-type: none"> • No benefit for ensuring that PPA terms are financially viable. • No real benefit for ensuring that PPA terms are financeable. • As with most other standard contract models any controversial points or difficult issues will be subject to further negotiation. 	<ul style="list-style-type: none"> • Standard contract are unlikely to be able to tackle the main controversial points as each utility has its own opinion perception of risk over a long term contract and these perceptions change. It is therefore unlikely that common agreement could be found or adhered to. • Standard contract terms may work where there is a homogenous good, risk profile and exchange process but this is not the case with long-term PPAs. • By the time this solution is demonstrated to be ineffective it will be too late to implement an alternative solution and independent generators will have withdrawn from the market place.
Codes of Practice covering transparency and market participation	<ul style="list-style-type: none"> • Very low cost and completely ineffective • Main cost is time to cover workshops of active procrastination. • Independent renewable generators will not be able to operate effectively in the market. • The Government will fail to meet its objectives of attracting low cost of capital investment into the country. 	<ul style="list-style-type: none"> • No real benefit for ensuring that PPA terms are financially viable without effective competition. • No benefit for ensuring that PPA terms are financeable. 	<ul style="list-style-type: none"> • Additional transparency is attractive. However, for transparency to be useful it needs to be coupled with effective competition. • We do not have effective competition in the GB market. • It will take time for effective competition to develop and it is questionable whether it will develop or not. • There is no common definition of trading costs and balancing costs, so it will take time to define these and ensure that figures are directly comparable.
Competition Measures			
Improving liquidity – OFGEM initiatives and Industry voluntary initiatives	<ul style="list-style-type: none"> • High cost and unable to be deliver in time, if they are able to deliver at all. • Current market structure presents a significant barrier to entry and as a result these initiatives are unlikely to be successful in generating significant numbers of new entrants despite an increase in headline volumes traded. 	<ul style="list-style-type: none"> • No benefit for ensuring that PPA terms are financially viable. • No benefit for ensuring that PPA terms are financeable. • Additional liquidity is attractive, and you certainly cannot improve the competition or improve market signals without improving liquidity. However, liquidity in itself does create effective competition. 	<ul style="list-style-type: none"> • Liquidity can be measured in several different ways, if liquidity is based on voluntary agreements there is no reason to assume that the right products are being traded to attract new entrants. • Similarly if liquidity is based on voluntary agreements there is no reason to be expect it to be enduring, any new entrant to the market will be aware of how easily that liquidity could be removed from the market. • Mandatory liquidity reforms are unlikely to be fully implemented in time to avoid a 2015 hiatus. • Improvement of PPA terms depends on second order effects of increased competition arising from liquidity

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Initiative	Cost	Benefit	Risks
Cash out reform	<ul style="list-style-type: none"> High cost and is expected to increase the cost of balancing making the situation worse rather than better. The potential for increasing cost of imbalance is likely to be priced into PPAs on a very conservative basis. Increasing the cost of delivering PPAs. Benefits that could have arisen from a centralised renewable market have been ruled out of scope. 	<ul style="list-style-type: none"> No benefit for ensuring that PPA terms are financially viable. No benefit for ensuring that PPA terms are financeable. 	<ul style="list-style-type: none"> The cost of balancing and lack of clarity on how those balancing costs will develop, will provide a significant barrier to entry for new aggregators coming into the market. The value associated with a diversified portfolio that includes different types of generation and demand will increase as the cost of imbalance increases, this will increase the barrier to aggregators entering the market and managing balancing costs. If the cash out reform was adjusted to include more beneficial impacts they are unlikely to be fully implemented in time to avoid a 2015 hiatus.
Regulatory Measures			
Obligation on large suppliers to offer a PPA to any renewable developer on commercial terms	<ul style="list-style-type: none"> It is not clear how this could be enforced, and what the cost of non-compliance would be. 	<ul style="list-style-type: none"> As currently defined there is no benefit for ensuring that PPA terms are financially viable. As currently defined there is no benefit for ensuring that PPA terms are financeable. <u>It could be financially viable if the levels of discount were defined at the outset and this was compatible with the CfD strike price.</u> <u>It could be financeable if the allocation of risk was defined under a standard contract structure</u> 	<ul style="list-style-type: none"> It would need a defined process of measuring compliance and measuring non-compliance. The ability could be completely unenforceable.
Off-taker of last resort who is obliged to offer administratively set terms	<ul style="list-style-type: none"> Administrative and regulatory costs of establishing a new body or making an existing body fit for purposes. However, it may be possible to use existing agencies such as the NFPA. Ensuring that the body is sufficiently capitalised to be financeable. 	<ul style="list-style-type: none"> <u>Ensures that PPA terms are financially viable on the basis of standardised contract terms.</u> <u>Ensures that PPA terms are financeable.</u> Could be combined with a CfD counterparty body Standardised contract terms should reduce the cost of arranging financing and increase the confidence of financiers to invest. Could become redundant if effective competition enables better terms in the market and the portfolio could be sold to alternative participants with agreement from all parties. Existing bodies such as the NFPA provide an important source of liquidity to the independent suppliers, enabling them to develop their position in the market. Provides a 'route to market' for smaller suppliers and aggregators. 	<ul style="list-style-type: none"> It could end up poorly balanced portfolio of assets, which may make it vulnerable to unexpected market changes. As a result the risks would need to be socialised across the incumbent suppliers. Need to define the manner in which it interacts with the market. Need to define appropriate contract terms that reflects the costs and risks of trading, currently this information is held by the large utilities.

9. What are your views of the potential for market distortions and possible impact on the wider market?

- 125 **The market is already distorted and this is creating a market failure, a solution is required that corrects existing distortions and re-balances the playing field between the incumbents and independent generators.**
- 126 As it stands the market is distorted as a result of the market power that has been bequeathed to the large utilities that through their established customer base and a market structure that rewards vertical integration between large generation portfolios and a stable customer base. This gives the incumbents a significant benefit in terms of managing balancing risk, hedging prices, and the knowledge that costs can be socialised passed on to their consumer base.
- 127 The scale of the benefits has led to increasing consolidation in the industry since privatisation that has proved to be impervious to numerous regulatory interventions to foster competition and consumer switching.
- 128 The existence of an established group of incumbent companies which enjoys the benefits of established portfolios and stable consumer base, creates a fundamental barrier to entry that restricts the ability of new entrants to come into the market with innovative approaches and bring competitive tension. Regulatory intervention is therefore necessary to avoid these distortions from perpetuating a market failing that undermines the Governments objectives of a low carbon economy at least cost to the consumer and improving competition within the market.

10. Can you identify or explain any other viable options (voluntary, competition based, regulatory or otherwise) that should be considered?

- 129 **Subject to more detailed evaluation, one solution that appears to work effectively has been proposed by the NFPA. This needs to be embedded into the EMR legislation to ensure a workable solution.**
- 130 As we highlighted in paragraph 132, of the solutions that have been put forward by DECC the only mechanism that we believe would be viable is the PPA provider of last resort. In this section we highlight the key factors that will need to be addressed for the implementation of this solution.
- 131 We believe, and for ease of implementation, that this solution could follow and use the systems and processes already established by the Non Fossil Purchasing Agency (NFPA) for the management of its NFFO contracts. Under this approach;
- a) The generator would have the option of signing a long term contract with the NFPA for a single payment that would cover the strike price (the electricity and the CfD top up).
 - b) The CfD market reference price would be the auction price that is achieved under the NFPA auction for that project.
 - c) The sites output for that period would be auctioned through the site; as such the balancing risk is transferred to the purchaser.
 - d) Requirements for CfD counterparty remain central to provide a bankable cashflow for the CfD payments.
 - e) The CfD component would need to be backed directly against the supplier levy currently being envisaged under the EMR (i.e. the difference between the NFPA auction price and the CfD strike price).
 - f) The system would operate via a standardised contract which would reduce the risk to all parties.
 - g) This needs to be underpinned with primary legislation.

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- 132 We believe that this solution would provide an effective Route-to-Market through a long term (15 year) contract with a financeable counterparty which should be attractive to lenders (although this needs to be confirmed with the banking community).
- 133 We believe that this will require an institutionalised body (similar to the NFPA) providing long term standardised contracts. This would ensure that the power from these generators remains available to the wider market in a transparent manner.
- 134 It is our expectation, that the powers to create this solution would need to be in place with primary legislation, and that this would have to be shortly followed by the necessary secondary legislation to ensure that an effective route to market is in place alongside the first CfDs.
- 135 We have also developed a number of other options that we believe could work as alternatives. However, this appears to be the most robust and implementable given the legislative timeframe and the urgency of the issue.