EDF ENERGY

Matt Coyne
Department of Energy & Climate Change
4th Floor Area C
3 Whitehall Place
London
SW1A 2AW

16 August 2012

Dear Matt

A call for evidence on barriers to securing long-term contracts for independent renewable generation investment

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

EDF Energy welcomes the opportunity to respond to this call for evidence. We are an active participant in the Power Purchase Agreement (PPA) market, and we do not believe that there is any evidence to suggest that independent renewable generators are unable to secure a route to market, or that they have to accept non-commercial terms to secure PPAs. EDF Energy would highlight that projects continue to go ahead and that independent renewable generators are achieving PPAs with acceptable terms. We will continue to offer PPA terms when requested by developers.

In considering any potential intervention, it will be extremely important to recognise that the concerns raised by some independent renewable generators are largely driven by the nature of the support provided under the Renewables Obligation (RO), where developers are exposed to movements in wholesale power prices. It would be quite wrong to link these concerns with the implementation of the Contracts for Difference (CfD) mechanism that forms an integral component of the Government's Electricity Market Reform (EMR) package. CfDs will be key to ensuring value for money for consumers by shielding them from the damaging impacts of high and volatile fossil fuel prices. At the same time, by reducing risk to the investor, they will lower cost of capital and thereby lead to lower bills compared with an alternative approach. In this respect it is a major improvement for customers over the RO. In addition, under the CfD mechanism, our willingness to enter into PPAs will be limited only by our risk appetite and view of value realisation, as opposed to the size of our Renewables Obligation.

EDF Energy believes that the difference in views between independent renewable generators and off-takers on the commercial terms offered in PPAs reflect the assessment of the risk and uncertainty associated with managing increasing amounts of intermittent generation. Higher levels of intermittent generation penetration are likely to lead to wholesale electricity market prices to become more variable as we would expect prices at times of higher wind output to be lower than they would be otherwise.

EDF Energy
40 Grosvenor Place, Victoria
London SW1X 7EN
Tel +44 (0) 020 7752 2200

A higher penetration of wind generation capacity is also likely to increase imbalance risks and associated costs for all market participants.

It is commonly suggested that the cessation of the RO will remove the incentive for energy suppliers to contract with renewable generators. However, the current RO does not create an obligation on suppliers to buy renewable energy. This is because suppliers always have the option of paying the buy-out fee as a means of complying with the RO. We are also not aware of any evidence to suggest that suppliers place any greater value on a contract directly for renewable power over and above the prevailing market price for electricity and the value of the Renewables Obligation Certificate (ROC). We believe that decisions on the power purchase price are already taken on a commercial basis by suppliers. Simply put, suppliers will purchase renewable power if there is an economic incentive to do so. This will be the case under either the RO or a CfD model.

The CfD mechanism will provide long-term price certainty and will remove the need to secure a price floor as part of a long-term PPA structure that independent renewable generators often seek. The removal of the recycle element of a ROC will eliminate the risks associated with forecasting the total ROC value, and shorter duration contracts should also help reduce counterparty credit risk. As renewable generators will no longer separately be required to trade with suppliers to realise the ROC value, this should increase the number of potential off-takers for a generator. This will increase competition in the market, and hence the terms offered for PPAs.

We believe that as long as the correct price signals are in place, there will be an economic incentive on PPA providers to buy power (of all types) under the CfD regime. This removes the need for further intervention in the market, such as a "buyer of last resort", that could have unforeseen impacts on the efficient operation of the market by distorting the behaviour of other market participants offering PPAs.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact Ravi Baga on 020 7752 2143, or myself.

Yours sincerely,

[redacted]

Corporate Policy and Regulation Director

Attachment

A call for evidence on barriers to securing long-term contracts for independent renewable generation investment

EDF Energy's response to your questions

Identifying the problem

1. **Please could you provide a summary of your experiences with the PPA market over the past three years? Specific areas for which detailed information would be particularly helpful are set out in the Annex.**

EDF Energy has direct experience of both short-term and long-term Power Purchase Agreement (PPA) markets through its role as a PPA provider/off-taker.

We are an active participant in the short-term market, and it is our view that the PPA market is competitive and provides a challenging environment in terms of maintaining margins. We do not believe that there is any evidence to suggest that independent renewable generators are unable to secure a route to market, or that they have to accept non-commercial terms to secure PPAs for the power offered.

From our experience of the market, we note that shorter fixed price contracts (i.e. those less than a year) are becoming less popular, and that many independent renewable generators are moving to structures which allow them to determine the nature and timing of when they fix their prices. We believe that this is an indication that some players are becoming more sophisticated and aware of how they can extract value from a well structured hedging strategy.

We see the short-term market developing two key segments. Firstly, there are dedicated energy players with a portfolio of assets and who are often looking for novel structures and have particular hedging requirements. Secondly, there are companies for whom energy is not a core business but still have concerns over sustainability and security of supply. There is increasing interest from independent generators and end customers in linking directly with each other, with the supplier acting as a facilitator and intermediary. A lot of these types of discussions involve structures that are similar to a Contracts for Difference (CfD) approach.

However, we do not believe that the issue under consideration is one of independent generators simply seeking a route to market. It is our experience that such developers (in particular those seeking bank financing) also frequently make other demands beyond just market access. These include price floor commitments, fixed discount structures for 15 year terms (which expose the off-taker to the future costs of managing a variable output export profile) and the underwriting of regulatory risks. These additional protections are not insignificant risks for off-takers. Any discount offered should reflect the risks incurred by the off-taker. Such risks include accurately forecasting the value of the Renewables Obligation Certificate (ROC), the cost of carry of a ROC, timing risk (i.e. the market movement between an offer and the signing of the PPA), counterparty credit risk, as well as volume risk.

On those occasions where we have tendered indicative PPAs, the limited feedback we have received suggests that the discount we have applied is too high on the power component but not on ROCs or Levy Exemption Certificates (LECs). However, our power pricing simply reflects our assessment of the risk and uncertainty associated with managing increasing amounts of intermittent generation. This is likely to lead to wholesale electricity market prices to become more variable as we would expect prices at times of higher wind output to be lower than they would be otherwise. A higher penetration of wind generation capacity is also likely to increase imbalance risks and associated costs for all market participants.

However, the fact that projects continue to go ahead suggests that independent renewable generators are achieving PPAs with acceptable terms. EDF Energy continues to offer PPA terms when requested by developers. Our assessment of the market would be that the number of off-takers offering PPAs has not necessarily declined, but that the number of successful off-takers may instead be reducing.

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?

Please see our response to Question 1.

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

No comment.

4. What are the factors preventing or encouraging participation in the GB market? How (and why) do you expect these to change over time?

EDF Energy is looking to increase its presence in the PPA market, particularly in the B2B sector. Our ambition is to become one of the largest two or three players in the market. We aim to increase our gross margin by selling the power purchased into the wholesale market, and by also acquiring ROCs and LECs. This will support sales to retail customers and further reinforce our brand proposition which is aimed at moving from a supplier to a partner.

We would stress that one of the constraints on our ability to grow in this market is the size of our Renewables Obligation (RO). Our appetite for ROCs is influenced by the uncertainty in the future value of the ROC recycle price (and hence the total value of the ROC). In comparison, under the CfD mechanism, our willingness to enter into PPAs will be limited only by our risk appetite and view of value realisation.

5. Do you expect the EMR package to change the PPA terms that you might offer/receive and if so how do you believe they will change? What do you think is the primary driver for these changes?

It is important to note that the concerns raised by some independent renewable generators are largely driven by the nature of the support arrangements provided under the existing RO where developers are exposed to wholesale electricity prices, and are not the creation of Electricity Market Reform (EMR). In fact, as we will explain in our response to Question 8, we believe that the CfD mechanism will help mitigate many of the risks that may be preventing better PPA terms from being offered.

EDF Energy believes that the concerns of independent renewable generators mostly relate to the intermittent and less predictable nature of wind power. We must recognise the fact that the value of non-firm power is not the same as firm (i.e. despatchable) power. As the level of intermittent generation on the system increases, we would expect wholesale electricity market prices to become more variable. We would expect prices at times of higher wind output to be lower than they would be otherwise. A higher penetration of wind generation capacity is also likely to increase imbalance risks and associated costs for all market participants. We believe that these factors will be reflected in the commercial terms on which off-takers (i.e. suppliers) are willing to provide PPAs.

It is commonly suggested that the cessation of the RO will remove the incentive for energy suppliers to contract with renewable generators. However, the current RO does not create an obligation on suppliers to buy renewable energy. This is because suppliers always have the option of paying the buy-out fee as a means of complying with the RO. We are also not aware of any evidence to suggest that suppliers place any greater value on a contract directly for renewable power over and above the prevailing market price for electricity and the value of the ROC. We believe that decisions on the power purchase price are already taken on a commercial basis by suppliers. Simply put, suppliers will purchase renewable power if there is an economic incentive to do so. This will be the case under either the RO or a CfD model. For example, as stated in the consultation document, one market participant appears to have accounted for the majority of the PPA market in 2011 and 2012, and we note that this off-taker does not have a Renewables Obligation to meet.

We are aware that the Government is now minded to make the reference price for intermittent plant CfDs the hourly day-ahead "GB Zone Price". It is proposed that this will be based on the orders of the two GB power exchanges (APX and N2EX), and we agree that this could be a credible and enduring index. Contracts settled at the day-ahead stage will benefit intermittent or non-firm generation sources because of their limited ability to predict specific output levels over longer time horizons. The ability to trade the reference price on an hourly basis, in line with their forecast output, should provide greater revenue certainty to such generators. Shorter term indices will therefore reduce the cost exposure to the off-taker and allow it to offer higher 'headline' prices to independent renewable generators.

A CfD with a day-ahead reference price will protect wind generators from the reduction in the value of their output that will arise in the future because market prices will tend to be depressed at windy times. Additionally, generators and suppliers will still be exposed to some basis risk (i.e. the risk of not achieving the reference price) between the day-ahead price and actual physical output because the wind generation forecast at the day-ahead stage will have some residual error. Suppliers or aggregators with a large trading and generation portfolio are likely to have the ability to manage such imbalance risk more effectively than small generators. We believe that this gives such suppliers or aggregators a strong incentive to contract with wind generators for the physical output of the plant.

We also note that there is a concern that the large Vertically Integrated Utilities (VIUs) appear to be developing their own renewables portfolios rather than offering PPAs. We do not believe it is unusual to expect such companies to want to invest in a diverse generation portfolio. It is similarly wrong to assert that the natural conclusion of VIUs developing their own generation portfolio is a reduction in the supply business' appetite for PPAs. The two activities are independent and provide companies the opportunity to create additional value for their business.

VIUs do not have a perfect hedge between their respective generation and supply businesses. The supply businesses will therefore try and use all accessible routes to generation sources to hedge supply costs. This approach will not be changed by the introduction of a CfD mechanism. As argued above, the removal of the RO will remove the cap on the volume that any individual company may wish to develop, and is therefore an inducement to further investment.

The new arrangements will still be susceptible to a degree of regulatory risk from initiatives such as cash out reform/changes to the balancing mechanism that are complementary, but not directly related, to EMR. However, as is the case today, the challenge will be to identify who is best placed to manage specific risks, and how they intend to charge for taking it. At the moment, contracts contain widely-stated changes in law clauses which would allow us to re-open the contract in the event of new regulations such as cash out reform.

Floor prices are not part of our product offering and will in any case become redundant in a CfD market because generators will receive a top-up to the strike price. By providing long-term price certainty, the CfD mechanism will therefore remove the need to have a floor or a long-term PPA structure. The removal of the recycle element of a ROC will eliminate risks associated with forecasting the total ROC value, and shorter duration contracts should also help reduce counterparty credit risk. As renewable generators will no longer separately be required to trade with suppliers to realise the

ROC value, this should increase the number of potential off-takers for a generator, and thereby increase competition (and hence terms offered for PPAs) in the market.

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

The main considerations for a PPA off-taker in selecting a partner are that:

- A creditworthy counterparty.
- The project should be of a reasonable size i.e. at least 5MW. This allows us to achieve economies of scale in recovering the legal costs and other overheads incurred, and provide a competitive offering.
- A project that has a high certainty of being built. For example, we would normally expect planning consent to have been secured before we start negotiations.
- The predicted load factors, and locations, should be consistent with wind generation across the country. This will allow us to accurately forecast the output of the wind farms.

Conversely, we believe that independent renewable generators are looking for:

- A creditworthy counterparty.
- Attractive prices for the renewable generation.
- Additional commercial value from the provision of a) floor prices b) the use of longer term index prices i.e. monthly/annual c) transfer of change in law risk to the PPA off-taker.

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?

Please see our response to Questions 1 for our experience of the PPA market.

Please see our response to Questions 5 and 8 for our views of the effects of the Government's proposed EMR package.

Options to achieve the Government's objective

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

EDF Energy believes that the planned CfDs will be key to ensuring value for money for consumers by shielding them from the damaging impacts of high and volatile fossil fuel prices. At the same time, by reducing risk to the investor, they will lower cost of capital and thereby lead to lower bills compared with an alternative approach. In this respect it is a major improvement for customers over the Renewables Obligation. As a generator, we therefore welcome the simplification that the CfD brings in terms of the potential removal of price risk and some of the other risks currently requested to be taken by off-takers (and as discussed in Question 1). CfDs will bring certainty to investors in the form of the confirmation of an agreed strike price level as well the reference price to be used.

We also believe that CfDs, and the broader EMR policy proposals, are capable of working for all low carbon technologies (including renewables, nuclear and fossil fuels with carbon capture and storage). They will give all such projects the stable and reliable revenue they need to justify the large upfront investment required. We believe that the Government's plans will help us, and other investors, deliver the investment that we need to maintain secure, affordable and low carbon energy supplies.

However, it is vital that legally effective arrangements are put in place to protect against the consequences of the proposed CfD mechanism/law not remaining in force for the life of the project, and against any adverse amendments to CfDs being unilaterally imposed on investors.

In terms of the potential options discussed in the consultation document, EDF Energy believes that adequate market liquidity will be essential to the success of EMR. We support market driven, rather than regulatory, initiatives that can make a positive contribution to enhancing and deepening liquidity in the GB wholesale electricity market. In particular, we are keen to see the development of forward trades in the current auction-based exchange. Although these measures are not designed to directly address the PPA issue, we agree that any improvements to the functioning of the wholesale market will be beneficial to all participants.

The effective operation of CfDs requires a liquid wholesale market to provide a reliable and transparent reference price. It is important to ensure that any measures taken to enhance market liquidity in the near term are consistent with ensuring that the right liquidity signals are brought into the market to provide a robust and accessible reference price. We believe it is very likely that the development of the CfD mechanism will encourage the development of physical trades using the reference index price, in parallel with trading against the index. This is common in other commodity markets and potentially provides a good basis for enhancing market liquidity.

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

We do not see any merit in imposing an obligation on large suppliers to offer PPAs to any renewable developer that requests one. We agree with DECC that this type of approach is likely to result in market distortions and potentially result in higher costs to customers. As we have argued above, as long as the correct price signals are in place, there will be an economic incentive on suppliers to buy power (of all types) under the CfD regime.

Similarly, we do not see any case for a "buyer of last resort". We do not have this structure today and we have already stated above that a CfD may actually increase off-taker participation. We believe that there are currently a number of market participants offering PPAs. However, the problem is not that PPAs are not available to independent generators, but more the fact that they are not available at the prices that they necessarily want. A "buyer of last resort" model will not resolve this issue.

We also agree that such a model could have unforeseen impacts on the efficient operation of the market, for example, by distorting the behaviour of other market participants offering PPAs or limiting the ability of independent aggregators to compete.

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

We cannot identify any other viable options outside of the improvements that are already being proposed as part of the EMR package.

For PPA providers

a. Have you seen an increase in the number of requests that you have received for the provision of PPAs?

EDF Energy has seen a decrease in the number of requests for the provision of long-term PPAs from viable ready to build projects.

b. Have you have been able to respond to a larger or smaller proportion of the PPA requests for tender? If your ability to offer PPAs has increased or decreased over this period what have been the drivers (commercial or otherwise) for this change?

There has been no change in the number of PPAs that we would be able to respond to as long as the required terms were of a form that was acceptable to us.

c. Have the terms that you have been able to offer in response to PPA tenders changed, and if so how have they changed? What are the drivers for this?

The only major change in the terms that we have been offering has been through an increase in the discount to the power price. As discussed above, this is driven by our view of imbalance risk as the amount of intermittent generation on the system increases. However, we have seen a change in the PPA terms being requested by the generator i.e. floor prices, regulatory risk transfer, and we have not been willing to accept these terms.

d. **Have you been able to win more or fewer PPA tenders based on the terms you have offered?**

We have been winning fewer long term PPAs than in the past, and this suggests that other PPA off-takers are willing to offer more favourable terms.

e. **How do you think EMR and the CfD will influence the terms that you are able to offer in response to PPA tenders?**

As discussed above, we believe that CfDs will change the requirements of the sellers for long-term PPA contracts, and will better align the needs of the sellers and the risk appetite of the off-takers.

EDF Energy
August 2012