



A CALL FOR EVIDENCE ON BARRIERS TO SECURING LONG-TERM CONTRACTS FOR INDEPENDENT RENEWABLE GENERATION INVESTMENT

Questions and Evidence sought

Introduction: EDP Renewables

EDP Renewables (EDPR) is a leading renewable energy company that develops, manages and operates power plants that generate electricity using renewable energy sources, mainly wind energy.

EDPR is one of the three largest companies in the world in terms of growth and installed capacity (7,163 MW of wind installed capacity in eight countries). EDPR's expansion plan aims to increase the company's wind power capacity considering the best investment opportunities. EDPR entered the UK market in 2010 and is focusing its offshore wind energy development activities in the Edinburgh office. At present, EDPR has interest in offshore wind projects totaling 2500 MW.

Introduction: Repsol

Repsol Nuevas Energías is the new energy division of Repsol YPF SA. It is a major integrated energy company headquartered in Spain, operating internationally. The new energy division was established in 2010 to pursue the company's interests in renewable energy, where it focuses on biofuels, offshore wind and technology.

Repsol entered the UK offshore wind market in 2011 with the purchase of SeaEnergy Renewables. The company is involved in the development of 3215 MW of offshore wind capacity in the UK.

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.**
- 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?**

EDPR is one of the three largest companies in the world in terms of growth and installed capacity (7,157 MW of wind installed capacity in eight countries). In Europe, EDPR is the third largest wind operator, with a wind power capacity of 3,652 MW spread out over wind farms in Spain, Portugal, France, Belgium, Poland and Romania.

EDPR entered the UK market in 2010 and is focusing its offshore wind energy development activities from its Edinburgh office. At present, EDPR has interest in UK offshore wind projects totaling 2500 MW, including the Moray Firth Zone (Zone 1) of the Round 3 Crown Estate Tender as well as the Inch Cape Project (Scottish Territorial Waters).



Although EDPR does not have yet operating capacity in the UK, we have been canvassing the UK onshore and offshore market for new opportunities (both onshore and offshore wind) for the last two years. As such, we have been involved in a number of due diligence processes which require discussion of potential terms for a PPA. During this process, we have seen the ongoing deterioration of the market and increased uncertainty about the new market regime.

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?

PPA conditions and terms differ in different geographies as they do their market and regulatory frameworks. However there are key elements to ensure a healthy PPA market:

- **Regulatory certainty:** mature markets offer the necessary confidence and visibility to structure long term contracts.
- **Competitive markets:** competition and market concentration has a significant impact on the PPAs. The competitive markets (both at generation and supply level) provide a wider scope of potential buyers that can adapt their offers to their different market strategies and therefore increases the options to PPAs structures and can increase the "churn" rate for products in the market.
- **Market liquidity:** liquid markets with flexible trading schemes (both long-term and close to real time) allow better market (price volatility) and balancing risk mitigation.
- **Transparency:** reliable, robust and transparent reference prices are required in order to provide market certainty.
- **Balancing markets structures:** for intermittent generation the structure of the balancing market has a clear impact in the PPAs. The higher the imbalance risk and associated costs which are assumed by the generator negatively affects the attractiveness and creates greater barriers for independent generators.

A competitive PPA market is a clear result of a robust market design. Competitive markets attract market players and create business opportunities to trade in a liquid environment that allow the appropriate and effective mitigation of embedded risks.

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

UK electricity market has always been perceived as a reliable investment environment in which regulatory risk has never been an issue. However, changes introduced by Electricity Market Reform (EMR), Liquidity Review and the Cash-Out Reform are creating uncertainty that may prevent foreign investors to participate in the market.

Transition from RO into a Contract for Difference Mechanism and new banding levels announced last July, which maintain ROC level for onshore wind at 0.9 ROCs/MWh, have created certain concerns and doubts in investors.



Furthermore, the ROC banding review consultation explicitly states that the new CfD system is expected to be set at a lower level of support than the RO due to more certainty of the revenue provided. Thus, we can assume that the ROC level recently agreed (1.8 ROCs/MWh) will be considered a "maximum reference" for the setting of the new CfD strike price. However we do not agree that the new system must necessarily result in a diminished level of support. The vast majority of Round 3 projects will be under this new regime which are projects that, according to DECC's and Arup's assessment (base for DECCs ROC banding review), will have higher capital costs than Round 2 projects (however balanced with higher output in terms of MWh). The claimed certainty of revenues provided by the new CfD still needs to be proved, and therefore diminished support may lead to less projects being built in foreseeable timeframes. In addition, although the CfD smoothes the volatility inherent in wholesale electricity prices (linked to commodities' prices) it introduces additional risks that may have a significant impact in the future development of offshore wind such as a reduction of potential counterparties and difficulties to sign PPAs for IPPs.

Moreover, pending definition on important elements such as balancing and market liquidity reform are additional burdens for investors.

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?

Regarding the setting of a feed-in tariff system, DECC proposed three potential structures: fixed FiT, premium FiT and FiT with Contract for Difference (hereinafter CfD). During the whole EMR process UK's government has shown a clear preference towards the CfD, which has been finally the selected option. In EDPR we have always shown or preference to the other two structures, the main risks that we have always identified in the CfD system are:

- Offtake and "route to market" risk: the RO currently incentivises suppliers to enter PPAs renewable generators; under the CfD there will be no equivalent incentive to purchase renewable power and consequently higher discounts could be applied to the terms of a PPA
- Discount over the top up payment given the inability of renewable generators (non-dispatchable) to replicate the reference price index
- Lack of understanding from the financial community of the CfD mechanism resulting in projects not achieving financial close
- Lack of definition of a levy framework for the CfD mechanism. If generators cannot be sure that a CfD will be available in the timeframes of the development of the project, offtakers will be reticent to enter into a long-term commitment with generators.



CfD – Main problems identified	Possible solutions to make proposed CfD attractive to independent IPPs
Index replication: It will be virtually impossible for wind farms to replicate the price index, therefore wind farms will be exposed to the difference between this price index and their actual realized price	<ul style="list-style-type: none"> - Refer the CfD mechanism to each individual wind farm realized price (as currently done in Spain)
Difficulties in finding financing: Since the difference between the price index and actual wind farm's realized price mentioned in previous point can be very large, there is a non quantifiable risk in the revenue component. <u>We are very doubtful as to whether this type of remuneration is bankable at all (or with high cost of debt)</u>	<ul style="list-style-type: none"> - Set an absolute floor price -including balancing- for all the production of the wind farms - Set a buyer of last resort that guarantees this floor price
Appetite for PPAs: If suppliers are no longer obligated to purchase renewable power, independent IPPs could then be exposed to a <u>significant degree of off take risk</u> . The appetite of the market for getting offering competitive PPAs will be clearly reduced. This fact is aggravated by the high vertical integration level of UK's electricity market. <ul style="list-style-type: none"> - Difficulty to find potential buyers for the energy - Potential balancing risks/additional costs 	<ul style="list-style-type: none"> - Buyer of last resort for renewable energy (this will provide a certain level of certainty to independent IPPs, thus facilitating financing and providing a reference minimum level for PPA negotiation) - Develop a real economic incentive for suppliers to buy electricity from renewable sources - Transparency pricing: increase liquidity (OFGEM reform) - Mitigate/eliminate current balancing risk

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

Historically, securing a PPA has been a requirement to any equity and debt financing of wind power projects of IPP's, since a bankable PPA and a credit-worthy counterparty is usually required by sponsors .

The determining factors selecting a PPA are counterparty profile/credit risk, term, price levels/ structures and covered risks (market/balancing).

The **counterparty risk** is a key element that is considered. A credit-worthy counterparty is desirable to secure the revenues and it is also a requirement by sponsors of the project in order to finance them.

Also, **long-term agreements** of at least 15 years are the preferred by lenders in order to secure the revenue stream with the sale of energy from the project.

And last but not least, **price levels and structure** (fixed/variable) are other determining elements. E.g. a minimum floor that secures a fixed income and the levels of discounts applied. Within price included services, such as market representation and balancing risk, shape and define the PPA structure.



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?

The two main elements are:

- The strike price is the key variable of the new CfD system. Although the government has already disclosed some features of the CfD, no indications on the strike price levels are expected to be released until late 2013. Thus, we are not in a position to give an answer to this question until we have more light on the first strike prices values (to be set for the 2014-2017 period). This is a critical element to complete any meaningful economic and revenue modeling of our large offshore projects.
- Discounts to the reference index due to generation profile as well as discount to market prices that PPAs will include for route to market and services (including balancing). For IPPs the combination of both discounts can have a significant impact in realised electricity remuneration.

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?

Option 1 (market-led initiatives) is unworkable and will result in a hiatus of investment due to the fact that both independent generators and vertically-integrated utilities would need to conclude that there is a lack of PPA availability in the market. Given that vertically-integrated utilities are responsible for providing some of the PPAs in the market and have generation projects that compete for PPAs with independent generators, it is unlikely that consensus will be reached for a market-led initiative which will create a robust set of independent and vertically-integrated aggregators.

Option 2 (competition measures): This would help to incentivise independent aggregators, but without financial incentives, all options would fall short. In order to create a market where independent aggregators exist in sufficient numbers to create competition for supply contracts, there must be incentive for market entrants to take balancing risk as their core business. Independent suppliers (the few that exist) in the market are not taking this risk at the moment because the UK system penalizes imbalance too greatly for those who cannot manage risk on both the generation and supply side. Reform of cash-out mechanisms would be a start. However, in the near-term, direct financial incentive to independent aggregators to take balancing risk in the market is required in order to increase the number of parties offering PPAs.

Option 3 (Regulatory Measures): EDPR believe that option 3 is the most likely to produce tangible results in line with the Government's objectives. An off-taker of last resort, in combination with the competition measures mentioned in Option 2 (especially financial incentive to independent aggregators) would form a bottom reference and would spur the development of a healthy PPA market. This certainty of route to market would give confidence to independent generators to



continue to invest in large-scale projects and would avoid a hiatus. Regulatory measures such as the establishment of an off-taker of last resort could be thought of as an enabling measure (following the switch from the RO to the CfD) to establish a route to market for all generators bringing investment to the UK in line with the Government's goals.

An offtaker of last resort would need to have the characteristics of a PPA counterparty described in the answer to question #6.

Also a buyer of last resort will promote competition and create a benchmark to other companies that could elaborate their services from this basis to better adapt them. These conditions would provide a level of certainty to IPPs and facilitate financing.

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

We share Government's vision in which a competitive and effective market should attract a wide range of investors, including independent developers that have played an important role in the deployment of development capital (£100s of millions in the offshore wind sector alone) during last few years. Variety is a symptom of health in the system.

The CfD establishes a market competition distortion, creating a clear disadvantage of IPPs towards the vertically integrated utilities, which can manage imbalances through the variety of technologies and the size of their portfolios.

Without independent generators and suppliers, the market will move backwards toward the distortions seen in the 1990s when self-supply, bilateral contracts dominated the industry. These conditions can lead to a lack of competition which, in turn allows the remaining market participants to pass the costs of any inefficient contracts on to consumers (this risk has not been mitigated in the transition from the Pool to NETA and alter to BETTA). Further reform of the market is required in order to ensure a competitive market (including robust price discovery) for both incumbents and IPPs to avoid such gaming.