



Matt Coyne
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16 August 2012

Dear Matt,

RE: Call for evidence on barriers to securing long-term contracts for independent renewable generation investment

On behalf of MITIE Asset Management, we are delighted to answer this call for evidence. As an investor in and developer of decentralised energy infrastructure, we certainly have a vested interest in informing the reform process, the final outcome of which will have a critical impact upon our business and competitive environment. As such, our commitment to the reform process cannot be understated. Indeed we consider reform critical to the government's plans to meet its broader decarbonisation initiatives and set the UK on a sustainable and affordable low carbon energy path.

As related to this particular call for evidence, we are relatively new to the world of Power Purchase Agreements. Up to this point, our decentralised energy assets have been assigned to direct off takes as energy performance frameworks rather than energy generation. As such, we have had limited experience in the market for PPAs. However, we have a development that will come online soon and a number of developments are in the pipeline, so taking an informed view of the market going forward is critical to our business at this stage.

It is challenging to speculate as to how the proposed measures in the Electricity Market Reform (EMR) will impact our business until further details are published in the finalised Energy Bill. However, the current policy uncertainty is impeding investment. Thus, the immediate need is to raise credit and transfer risks (the key variable when negotiating PPAs) to those best able to manage them.

Kindly confirm receipt of this letter.

Kind Regards,

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MITIE

DECC Call For Evidence

Response from MITIE Asset Management

16 August 2012

This report sets out to respond to the Department of Energy and Climate Change (DECC) call for evidence on the barriers to securing long-term contracts for independent renewable generation investment.

About Us

MITIE Group PLC ("MITIE") is ranked as the second largest energy services company in the UK, providing a full range of integrated services that help its clients manage their energy use and carbon footprint. MITIE's energy services proposition supports all the key energy issues facing businesses and public sector organisations across the UK. These include business continuity through security of energy supply, value through cost reduction, reduction of carbon emissions and renewable energy.

MITIE Asset Management Ltd ("MAML") is the energy infrastructure arm of MITIE and operates as an investor in and developer of decentralised energy infrastructure, developing energy assets that offer a secure, sustainable energy supply with price certainty, guaranteed efficiencies and reduced carbon emissions.

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Problem Identification

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.**

Up to this point, our decentralised energy assets have been assigned to direct off takes as energy performance frameworks rather than energy generation. However, we have a development that will come on line early 2013 and a number of development opportunities that are in the pipeline. As such informing the reform process is of vital importance to MAML given our current commitments and future growth objectives however our input to this process is impeded by our limited track record.

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?**

As indicated above, we have not been actively involved in the PPA market over the last 3 years. We are very much in the discovery process as we embark on new projects and as our current agreements come online.

Gas prices have been a dominant force driving change in the PPA market, also the ability of major Utilities to self-hedge through their own generation rather than seek out long term contracts. PPA providers have been reticent to provide meaningful floors (i.e. real impact on balance sheet) despite being a consistent demand from debt funders and some investors. Where they have been provided, the question remains at which level, while the discount applied has increased.

The increasing liquidity with emerging exchanges for both power and ROCs has meant that short term trading positions are now accessible and fairly solid, but there has not yet been any adaptation by lenders to mirror this trend. What would have been expected is that lenders would come away from their demands for long-term, covenant-backed, price certain contracts; but this has not transpired in practice. So, while spot liquidity may have marginally increased, the current lending environment remains quite rigid.

Other changes are the direct auctioning of power by the major utilities on the UK day-ahead market, which should lead to greater transparency and true price discovery on the price of wholesale power.

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?**

When compared to developed country cohorts, particularly in Europe, the structure and terms of PPAs offered in the UK do not differ wildly. The differences are largely dependent on the subsidy mechanisms employed by the competing country – normally tariff premiums, feed-in tariffs, renewable obligations (or similar). The structure cannot differ widely as the same general rules of project financing apply so requirements of equity investors and lenders will apply. There may be some variation – mainly if a capacity charge is accepted with an

embedded and set return and whether the fuel pricing / supply risk is a pass through or not.

Generally, the key issue when negotiating any PPA is risk and how risk is allocated among parties. Particularly, whether there is an obligation to supply with associated penalties for non-performance or simply a commitment to take power if generated – i.e. take or pay features. This has immense consequences for the project risks and flow to fuel supply and ensuing O&M agreements. There is ultimately a trade-off between the discount of the PPA and who bears the risk.

As yet, we do not operate in other markets but we have an expansion plan with a team assessing the commercial viability of other markets.

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

The barriers to market access for renewable energy investment have been well documented and can be broadly categorized into 3 main areas: economic, institutional and (carbon) price. Beck and Martinot (2004:1) unpacked these to include: conventional energy subsidies; high initial capital costs associated with renewable energy investment; lack of fuel price assessments; imperfect capital markets; lack of skills or information in the burgeoning renewables market; poor market acceptance of green energy; technology prejudice; financing risks and uncertainties; high transaction costs and a variety of institutional factors that are all regional or specific to a particular country. Watson et al (2011: 23-32) argue that in the context of the UK, this has essentially created a systemic lock-in towards a centralised, high carbon energy system. These barriers or systemic features reinforce each other and lend momentum to certain development paths while closing off others. Breaking high carbon lock-in, the authors contend, requires more than simply correcting market failures, supporting R&D and low carbon innovation (though vital), but it requires deliberate mechanisms to counter high carbon technologies that dominate the market and also create processes of lock-in that give renewable technologies momentum so as to displace and exclude competing, fossil-based technologies.

The social dimension and perceived bias for a centralised fossil-fuel based energy system is changing. Climate change targets, legally binding global commitments and increasing consumer awareness is giving traction to the renewable energy agenda in the UK. So too the growth of renewables and the changing relationship around grid access as the decentralised energy imperative becomes all the more compelling. Culturally, the shift is happening, strengthened by more and more projects in the development pipeline. We expect this to intensify in the long run, as more green energy initiatives and projects come online in the future and the policy and supporting frameworks evolve and improve.

Downside, risks however, persist. The UK economy, like most developed nations is still largely credit constrained where poor liquidity in the wholesale electricity market and forward markets remains a significant impediment to green growth. The UK government is well aware of this constraint and have cited a few positive developments over the course of the last six months in the draft Energy Bill. These include, industry led initiatives to improve day ahead trading and OFGEM's proposal requiring the Big 6 to sell 25% of their generation output in the forward market (DECC, 2012 :34). The establishment of the Green Investment Bank and other financial support mechanisms is certainly improving the long term economic

prospects for renewable energy development; however the short term remains particularly challenging.

While culturally the mechanisms for change are evolving for the better, so too the economic and institutional context, more must be done to address the pervasive barriers that impede low carbon energy development and deployment. Furthermore it is crucial that we address the what Watson et al (2011:5) call the "meso-scale" of renewables – i.e. the middle level between large scale investments like offshore wind and small scale generation at the household level. If potential for investment at this scale is ignored, the 2020 target will be much harder to meet. This will involve policy reform so that Local Authorities become more active players and are able to raise finance for local renewable projects. Reforms around planning will also be required. Local authorities will need stronger guidance to ensure that planning decisions are compatible with the Climate Change Act and meeting the 2020 renewables target (Watson et al, 2011:35).

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?

The UKs Electricity Market Reform (EMR) is underpinned by 4 reforms set to start taking effect in 2013. They are:

- i. A Carbon Price Floor
- ii. Feed in Tariffs (FiT) with Contract for Difference (CfD) to replace the Renewable Obligation (RO) as the main support programme for renewables
- iii. Capacity Market to ensure security of supply
- iv. Emissions Performance Standard providing an emissions cap for new power plants that block the construction of non-CCS coal plants in the UK

The major policy change in the EMR is that support for renewables will shift from ROs to FiTs with CfDs with a transition period 2014-17 when developers are still able to choose between both schemes.

These changes have created speculation around the availability of PPAs offered by leading electricity suppliers for independent renewable developers post 2014. Dr David Toke of Birmingham University, among the first to canvas for the introduction of a FiT to replace the RO has called for an extension of the RO beyond its 2014 closure until the complexities posed by the EMR are addressed. In his Green Energy blog he warns that the EMR effectively restricts development opportunities to the Big Six¹ given that in order to qualify for the CfDs developers have to trade on electricity markets – an option that is essentially only open to electricity suppliers themselves. In his view, the EMR effectively restricts competition by freezing out the independents – be they large companies or small community based wind farms. He argues for the introduction of a fixed FiT in the long term citing the success of Germany and its renewables sector in stabilising energy prices and driving growth and investment in its green energy sector (Tokes, 2012 a).

The EMR certainly has introduced uncertainty into the market for wholesale electricity as details around the interaction between the ROCs and CfDs remain unclear. Everything is hanging on the strike price that will be implemented mid 2014 – and particularly whether it will be set at a high enough level to attract the level of investment needed for the UK to meet its commitments. Uncertainties also

¹ The six large vertically integrated utilities in the UK are British Gas, EDF Energy, EOn Energy, nPower, Scottish Power and SSE.

remain around key details of the reform, such as who will be the counterparty to these contracts, who will be liable in event of default, details around how the strike price will be set, how long these contracts will last and whether there will be scope for renegotiation. Consequently there has been a hiatus on investment as new rules are rolled out in the forthcoming Energy Bill.

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

We consider a host of factors when embarking on a new project. The most important variable in our decision making process for PPAs is risk and particularly how that risk is allocated among parties. This encompasses costs, planning, timescales, the percentage of benefits received, the term, the bankability of the counterparty covenant and the availability of a meaningful and underwritten floor price. These, in turn, have largely been driven by debt and to some extent, equity requirements.

We are aware of End-User PPAs that overcome some of the limitations of the traditional PPA structures from the developer perspective. Their model compliments the clear return on investment and affords end users a view of the forward market (5, 10 or 15 years) while suppliers are currently reluctant to offer long term fixed pricing.

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 biggest change is in respect of the power prices and these have risen following the embedding of the carbon floor price. The consensus analyst view is that the proposed measures in the EMR will unilaterally lead to higher energy bills. At the high end of projections, the Carbon Price Floor alone could potentially raise the wholesale cost of electricity by as much as £20/MWh by 2020.

Historically returns have been inflated because of various factors including an overreliance on ROCs, fuel supply costs, debt terms and costs and also, capital equipment and O&M costs. One of the drivers of the EMR must be to continue the intent of the RO and catalyse implementation at scale so as enable some downward pressure on capex levels.

The other issue, however, which has less to do with the PPA terms and more the changing face of the economic market due to the financial crisis, is the unrealistic terms and covenants sought by lenders. In addition, lenders and investors are seeking highly wrapped EPC and O&M contracts and this has put a significant upward cost pressure and so driven down investment returns. EPC contractors will argue that this follows the price of steel, labour, insurance and transportation costs, but these other factors must also be considered.

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?

To meet its objectives and binding 2020 targets, the UK government has estimated that it needs to attract some £110 billion investment into the energy sector. This will require bold policy intervention. The FIT and the Renewable Heat incentive are certainly a step in the right direction, especially when considering the historical evolution of the UK's energy policy. As the implementation phase of the reform process proceeds, the hard work truly begins.

To deliver on its decarbonisation agenda, Lane (2012) states that ultimately the government must get the regulatory and prize risk right. He suggests modelling the FITs with Contracts for Differences on gas contracts as they are both notoriously complex and long term. They should also implement contracts with price openers to ward against paying too much in the future and set a price where some of the construction risk is shared with industry. He also suggests increasing the upper capacity limit for the FIT scheme to encourage smaller onshore wind development. These measures, he argues "will give it the best possible chance to meet its decarbonisation goals whilst giving consumers some protection against rising electricity bills".

As developers and investors we would like to see support around three key areas, namely reducing commercial risk, reducing capital costs and increasing revenue. Reducing the commercial risk of low carbon energy projects will entail supporting and creating an enabling environment for long term contracts, developing attractive investment incentives and addressing planning and building regulations that impede/delay deployment. Capital grants, subsidies, low cost borrowing facilities and the like will enable a reduction in capital costs. Developing the supply chain and taking an active look at capabilities will also lower costs. The Green Investment Bank (GIB) will play a crucial role here. However, it is worth considering possibly amending the forthcoming legislation to enable the GIB to receive a banking licence and thereby fully leverage its £3billion seed capital and channel much needed liquidity into the green economy. Also developing the appropriate unit price of electricity generated will go a long way to increase revenue streams.

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

Transitioning to a low carbon economy is politically accepted as the right path for the UK and this will invariably involve intervention to make low carbon alternatives cheaper than fossil fuelled generation. This requires a delicate balancing act between attracting investment into the low carbon energy sector whilst at the same time ensuring that investors don't reap guaranteed massive profits that come at the expense of consumers. The government has not always got this balancing act right – the recent boom then bust in Solar being a case in point. Lane (2012) explains that setting subsidies administratively is an arduous process even in an industry where costs are transparent and risks are low. Indeed, one could argue that without intervention natural gas (the then less carbon intensive alternative to coal) would not have evolved to be the dominant source of power in Great Britain today.

To fully answer the question of possible market distortions would require it to be looked at much greater detail - the scope of which cannot adequately be addressed here. But to answer it at the highest level, market distortions are invariable when transitioning from a high carbon to a low carbon economy. Some of the factors to consider include: the rate at which this transition is achieved, the resultant impact on the generation mix, balancing of supply, the main levers of price, quantity, demand, affordability, fuel poverty, running costs and structural changes and competitiveness of UK PLC, import/ export restrictions, investment flow distortions, to name just a few. How these reforms will impact new nuclear build and the long term implications thereof should this come about or whether the capacity market reform will bring about a second run on gas are all factors to consider. As yet, nothing is certain or indeed fully predictable.

This transition will have consequences not just at the domestic level but at the global level as well. So the distortionary effects of green protectionism on the global economy should also be considered. As Europe grapples with the after-shock effects of the financial crisis and the issuant debt burden, European subsidies and incentives for renewable energy (notably in Spain and Germany) have been driven down. Developers have compensated for this by moving elsewhere, particularly developing markets in Asia, Latin America and South Africa. Spain's Abengoa made 90% of its capex outside of Spain and 53% of revenues for 1Q2012 came from outside of Europe (Woody, 2012). The EU is a market leader in green goods and services. However, environmental tariff barriers and other green protectionist measures in major developing countries are squeezing EU companies out of their markets (European Policy Centre, 2012). Concerted collective action at the multilateral WTO level to remove green tariff barriers and push the green trade liberalisation agenda is imperative.

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

The transition from a high to a low carbon green economy can be accomplished by a host of measures. Support for renewables can take a variety of forms both demand and supply side, push and pull mechanisms.

As a new entrant to the policy debate, suggesting the best course of action for the government to pursue is not within our realm of expertise. Ultimately this will be a function of the desired future energy mix and subject to all present day political objectives and constraints.

We believe that the decentralised energy sector has a valuable contribution to make to this future energy mix and we are very keen to engage and provide insight where we have something valuable to add. Equally, we will endeavour to avoid engaging in debate that is outside of our area of expertise. We remain open-minded on the policy outcomes provided it delivers efficiency, clarity and a stable, predictable and durable energy framework.

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Annex

For independent renewable developers

- 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?
- 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?
- c. Typically, what length PPAs have been offered to you in responses and if this has changed how has it changed?
- 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?
- e. Have floor price levels and conditions changed and if so, how have they changed?
- f. Has the nature of risk allocation relating to imbalance, change of law and collateral changed and if so, how has it changed?
- g. Have financiers become more or less risk averse and if their risk appetite has changed how has this impacted the terms PPA terms they are requesting to secure project finance?

For PPA providers

- a. Have you seen an increase in the number of requests that you have received for the provision of PPAs?
- 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?
- 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?
- d. Have you been able to win more or fewer PPA tenders based on the terms you have offered?
- e. How do you think EMR and the CfD will influence the terms that you are able to offer in response to PPA tenders?