



# BRITISH MANAGEMENT DATA FOUNDATION

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24 Hawkhead Crescent, Edinburgh EH16 6LR

Tel: 0131 664 1129 www.bmdf.co.uk E-mail: bmdfmail@aol.co.uk

## Financing UK Electricity Market Reform

### *How Will the Market Judge its Success?*

*By Kathie Child-Villiers<sup>1</sup>*

#### Executive Summary

The UK Government has introduced its Energy Bill to attract the £100+ billion of capital investment needed to replace and de-carbonise the UK's electricity sector. The new structure will retain a competitive element for fossil-fuelled plant, while providing secure, long term revenue streams for renewable, nuclear and carbon capture and storage (CCS). The latter secure revenue stream should allow new facilities to be built at a relatively low cost to the consumer, with a similar cost of capital as UK transmission and distribution (T&D) or as a similar project with a long-term contract in the Middle East or Asia.

However, despite an attractive structure, debt investors in particular, are reluctant to support EMR. Two key issues in providing debt for EMR are:

- Inability to price certain risks, especially political risk, as it relates to EMR;
- Current capital scarce environment and significant drop in bank lending.

The issue of political risk is a serious one. Investors need confidence that the revenue streams are secured and will not be changed for popular politics. Political risk means investors will need higher returns to convince them to lend or, as is currently the case, they will refuse to lend at all.

This political risk combined with a significant drop in bank lending has left potential equity sponsors unable to pursue investment. These are large investments with upfront spending. Without access to the significant levels of debt which EMR should support, circa 70 – 80%, companies are forced to defer investment.

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<sup>1</sup> Kathie Child-Villiers has 25 years' experience as a Corporate Finance Advisor in the Energy Sector, primarily with HSBC and Merrill Lynch, focussing on utilities and renewable energy. She also spent 5 years as a Non-Executive Director for BW Offshore, an oilfield services company. She is currently on the Investment Committee of Fe Be Co-Invest and she is a Governor of Temple Grove Academy.

One possible solution would be for Government to more actively promote the development of a Project Bond market. This would allow sponsors to bypass banks, although ultimately it should help improve bank liquidity as well. A key issue in the development of such a market is it would require Government to work with the six largest Energy Companies (Big Six) to incentivise a first mover. Bond investors, who are risk averse, would likely require initial issuers to be household names from the Big Six.

The development of a public bond market for EMR investments would tap into significant pension fund and income fund investors who already are large investors in UK infrastructure. As the market develops, less well known sponsors also would benefit as bond investors became more familiar with the dynamics of EMR projects. It would encourage bank lending as it would offer a path to liquidity for banks.

EMR should provide a low-risk investment option which is attractive to project bond investors. If the Government is to attract the large investment needed at the lowest possible cost to the consumer, it needs the participation of this large investor group.



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#### **Introduction**

The UK Government introduced the Energy Bill to Parliament on 29<sup>th</sup> November 2012 to attract the approximately £110 billion of capital investment needed to replace and upgrade the UK's electricity infrastructure over the next decade while meeting the Government's ambitious climate change targets. Key components of the Energy Bill and Electricity Market Reform ("EMR") include:

- "Contracts for Differences" (CfDs) which provide a predictable revenue stream for low carbon technologies including renewable, nuclear and carbon capture and storage (CCS);
- A "carbon price floor" (CPF) or "green tax" on fossil fuelled generation which is designed to incentivise suppliers to build more renewable, nuclear and CCS by providing greater certainty to the price of carbon mitigation;
- a "Capacity Market" (CM), if it is deemed necessary, to incentivise sufficient reliable capacity; and
- An emissions performance standard to ensure no new coal/fossil plant is built without carbon capture and storage (CCS).

The Government is addressing its need to attract significant infrastructure investment in the UK, by replacing what has been the world's most competitive market for electricity and gas with what will be a quasi-regulated electricity and gas market. In addition, this market needs to meet the Government's climate change targets to provide almost a third of the UK's electricity from renewable energy sources by 2020. Will it work and at what cost?

## **Background**

In the 1980's and 1990's, Britain created a revolutionary electricity market which retained its gas pipes and electricity wires companies as natural regulated monopolies. These companies have predictable regulated incomes which support substantial amounts of debt (circa 70% - 80%), which is securitised or non-recourse in nature. This debt is low cost and enables these companies to achieve desirably low costs of capital.

Unlike these regulated businesses, generation and supply were completely deregulated in the 1980's and 1990's. The structure allowed customers to choose suppliers. The structure relied on market forces to determine the prices companies could charge customers and to incentivise investment in new build. The competitive generation and supply structure, which culminated in 2001 with the New Energy Trading Arrangements (NETA), forced companies to cut costs and to pass the efficiencies on to customers. The "Big Six" energy companies", the largest suppliers of electricity and gas in the UK, built integrated world class businesses with strong skill sets across the energy value chain. In the free market for electricity, gas-fired plant was the replacement plant of choice, supplying flexible and reliable fossil based electricity. Under the competitive market structure, the UK built a largely gas-based energy infrastructure.

## **De-Carbonisation and Security of Supply**

The UK electricity structure of retaining the "natural monopolies" in transmission and distribution (T&D) and deregulating generation and supply was replicated successfully in many other countries including Australia, Brazil, Argentina and parts of the US. However, in the new millennium, the UK and Europe agreed to aggressive climate change targets. These "green" targets are only achievable if fossil plant is shut down and replaced by low/no carbon renewable, nuclear and CCS. Unlike the rest of Europe, the UK has expected power shortages in the coming years due to already aged plants, including sizeable nuclear plants. The expected shortage, combined with "green" closures of fossil fuelled plant, has created an environment in which the UK's security of electricity supply is at risk.

EMR is the UK's response to incentivising significant investment in low/no carbon plant, but it arrives at a time when capital is scarce. EMR is moving the UK from a highly competitive electricity generation market which incentivised new build based on market triggers, to one which is quasi-regulated, but still maintains certain market mechanisms for fossil plant. Is the Government capturing "the best of both worlds" or will the new structure, which is highly complicated, only incentivise investors to "opt out"?

## Cost of Capital and Cost to the Consumer

Investors in infrastructure, equity and debt, are low-risk investors. They are willing to accept lower returns on their capital for a certainty of that lower return. The UK has attracted substantial investment (£ billions), debt and equity, in its regulated electricity transmission and distribution businesses.

The current weighted average cost of capital for regulated UK T&D companies is about 6%. This includes a substantial portion of long-term debt (70 – 80% of capital structure, in the form of public bonds), and equity which earns modest returns in the low teens (11 – 15%).

This lower cost of capital is passed directly onto the ratepayers as these are regulated T&D businesses. However, even with this low cost of capital, the substantial new build investment required to connect distant wind farms, has delivered ever increasing bills to the consumer. National Grid's UK regulated transmission and distribution businesses are expecting to invest between £2bn and £3bn per annum over the next 5 years, and thereby growing the regulated asset value by around 7% per annum (current regulatory asset value is £23.8 billion). Renewable energy's cost to the consumer includes both:

- The higher cost of the technology versus fossil-fuel plant (green subsidy); and
- the cost of the additional T&D connections.

Although the “cost of connection” is built with a low cost of capital, it is still an added cost to the consumer. This consumer squeeze is increasingly an issue for EMR.

## Attractiveness of EMR to Investors

Under EMR, achieving a low cost of capital is critical in delivering the over £100 billion of capital needed for new infrastructure at the lowest possible price to consumers/tax payers.

EMR de-risks the UK market for new build renewable, nuclear and CCS, which should allow for a similar financing structure as that achieved by the regulated T&D companies. Indeed EMR produces similar certainty of revenue streams as fossil fuelled and renewable projects in the Middle East and in Asia, which are financed, like UK T&D assets, with a high proportion of debt and a low cost of capital. EMR should attract infrastructure equity investors and should support a high proportion of long-term, non-recourse debt (project debt). This is especially true for renewable projects, which, relative to nuclear or CCS, are low risk investments with a transparent cost profile.

However, although new build investors are offered a generous future revenue stream, risks remain which are difficult for markets to quantify and therefore provide finance. The crux of these risks is a **political risk**. An infrastructure investor considering such investments questions: “What is the risk that the subsidies are lowered/eliminated when the megawatts are built and there is no longer a security of supply issue?” Are investors willing to invest in

a model which relies on long-term government subsidies in times of austerity, an election in 2015, and consumers already squeezed by high energy bills?

EMR began under Labour and it has continued under the Coalition. Consecutive governments have spent significant time with investors understanding their investment concerns. These largely have been addressed in EMR. However, unlike T&D, power production is not a natural monopoly. There is a market price for electricity and carbon. Relying on “subsidies” for repayment of an investment which requires significant initial up-front investment in a long-term asset is challenging in the current capital scarce environment. In addition, there are recent examples in European markets in which Governments have lowered previous subsidies, changing the game for imbedded investors (e.g. Spain). Equity and debt investors considering investing in EMR are concerned of a similar possibility in the UK. Indeed Labour has promised such a change which would implicitly “strand” renewable investment if enacted.

Under this very difficult backdrop, EMR has been “succeeding” in attracting equity investors such as EdF Energy, one of the Big Six, which has announced that the Secretary of State for Energy and Climate Change granted a development consent order to build and operate Hinkley Point C nuclear station. Similarly, EMR is attracting interest from “new” equity investors, interested in investing in renewable projects.

What EMR has not been able to do is to attract significant debt investors which are needed:

- to implement the large size of investment needed, and in particular to allow the “new” smaller companies/investors access to capital to participate;
- to implement EMR at a reasonable cost to the consumer/taxpayer by driving down the cost of capital.

### **Project Finance for UK EMR**

Currently, there is little to no public or private project/off balance sheet finance market for renewable, nuclear, CCS or conventional fossil fuelled generation in the UK.

As conventional fossil fuelled generation still operates in a volatile competitive environment, one would not expect debt to support these bumpy revenue streams. However, under EMR, renewable projects in particular should be able to attract long term project or non-recourse debt at competitive rates as it is supported by a predictable revenue stream. It should be no different from similar projects in the Middle East and Asia which are financed at attractive rates.

Achieving significant levels of debt in these UK projects would lower the overall cost of capital. It also would allow smaller companies and new investors to participate by lessening the equity required for the investment. In the past, smaller companies/new investors have

provided significant innovation in the sector. Without access to debt capacity, these players currently are not able to participate. Is there more the government can do to develop the project debt market under EMR?

The banking crisis and economic downturn, which continues in many European countries, has created an environment in which capital is scarce. Many banks, which used to provide substantial project finance to the sector, have weakened balance sheets and, in some cases, hold low quality assets. In addition, governments are imposing stricter capital ratio requirements, which again lessen the amount of money banks can lend.

Bank lending remains constrained, with banks reluctant to lend to smaller investors or for longer term projects. Instead, banks are consolidating their lending to the largest companies, including the “Big Six”, and even for the Big Six, they prefer to lend on a recourse basis, in most cases (i.e., they will lend against the balance sheet of the company as a whole rather than against a particular project). Equity investors interested in EMR are expecting/hoping this environment will change. For smaller/new investors, the lack of project debt is acting as a barrier to entry.

The Government is well aware of this issue. One response has been to establish the Green Investment Bank, “GIB”, which is providing equity and project finance to “green investments”. The GIB’s equity and project finance investments send a strong message to investors that if the UK Government is investing its own money, then surely the promised revenue streams are secure. With a total allowed spend of £3 billion, this is significant, but still falls well short of the £110 billion required investment. Who can fill the shortfall?

### **Publicly Listed Project Bonds**

Debt investors, which include UK and European pension funds and income funds have lent billions of pounds of long term debt against regulated T&D assets in the UK via the public bond markets for companies such as National Grid, Thames Water and United Utilities.

EMR is implementing a similar “regulated” structure for renewable projects, which should enable the development of a public bond market for such projects. However, for large infrastructure projects, bonds would normally replace the private bank financing once a project is viable.

Given the lack of bank lending in the sector, this is impacting the development of such a public bond market in the sector. Ironically, if such a public bond market existed already, banks would be more likely to lend as they would view this public bond market as a way to “take out” their lending and free up their balance sheet as needed. It is a difficult “catch 22”.

The possible answer is in the many **existing** renewable assets, including assets such as on-shore or off-shore wind, offshore transmission, and possibly even gas storage, which could be

readily packaged for a public project bond and issued by any one of the Big Six, who are well known to investors.

- It would be important that the original sponsors were from the Big Six as bond investors know these companies and therefore would more readily accept them as an initial sponsor.
- Once there were a few of such project bonds in the market, they would serve as a reference for other similar projects, including from smaller or less well known sponsors.
- Bond investors would have the existing project bonds as a proxy to judge the next project. As bond investors gained an understanding of EMR, the market would become more liquid and attractive.
- The long-term nature of the bonds would alleviate, although not eliminate, the issue of political risk and the short electoral cycle. It also would provide comfort for banks which would see it as a path to liquidity for its own balance sheets.

A key issue with this scenario is that currently the Big Six, although also somewhat capital-constrained, can issue corporate debt or bonds, i.e., not linked to a particular project, more cheaply than project debt. Although there are benefits to project debt, including accessing a new group of investors, the Big Six need incentives to issue project bonds to offset the marginally higher costs and additional risks in being the first issuer.

The Government is not helpless in providing incentives and it should seriously consider doing so.

- The development of a public bond market for such assets would create access to the large amounts of capital needed to implement EMR utilising relatively low cost debt. For example, Government could provide incentives to encourage the development of gas storage via more secure revenue streams (perhaps via long term contracts) and then linking this to the sponsor, a “Big Six” company, issuing a related project bond.
- Or, Government could provide incentives to do the same with similar renewable assets. GIB, in addition to the Big Six, would be a credible sponsor of project bonds. GIB should consider, once its portfolio reaches a credible size, refinancing with project bonds to develop this market.
- And finally, Government should increase its dialogue with traditional T&D bond investors regarding EMR.

Parts of EMR relating to the competitive market for generation are highly complex. Bond investors need a solid understanding of EMR, so that remaining risks are understood and can be priced accordingly as much as possible. As Delphine Malka, an Energy Investment Banker, puts it: “Bond investors do not like to be ‘first movers’, they like to have a track record of comparable investments to look at. UK energy projects are as yet unclassified in

their mind and EMR support, though great on paper, has not been tested. If they have alternative options with known variables, that's where they will put their money.”

## **Conclusions**

EMR will only succeed if it is able to incentivise many different types of investors, big and small to pursue investment. EMR is succeeding in attracting both the Big Six and smaller/new equity investors. However, these equity investors need debt support to bring these large capital infrastructure investments to fruition at reasonable costs of capital. One large group of investors which have cash and the ability to provide a reasonably priced, large, long term debt financing are public T&D bond investors. Government should look hard at how it can incentivise this group and its sponsors to develop a public bond market around EMR. EMR, specifically designed to de-risk investment and target this group of investors, is certain to fail without them.