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Delivering Centralised Renewables: Outline proposals for scaling up UK investment

Briefing note[1] April 2009

Summary

- The UK Government is committed under the EU Renewables Directive to ensure that 15% of the UK's final energy consumption is renewable by 2020 (up from 1.5% in 2006). In its Renewable Energy Strategy, the UK Government suggested that this target would be met by more than 30 GW of renewable electricity, with the balance from other renewable energy and heat technologies. This represents a tenfold increase on today's capacity.

- The Government estimates that this capacity increase will require around £100bn of investment to deliver[2], creating 50,000 jobs in the wind sector alone.

- Although the UK has an attractive renewables subsidy regime (the Renewables Obligation[3]), market growth has recently been stalled by the falling value of Sterling and challenging debt market conditions. In the short to medium term, the Government could use targeted fiscal measures to support investment in strategically significant renewables deals that are at risk due to current market conditions. The net cost of intervention will be zero over the medium term as these projects are economically profitable under current support regimes.

- The Government could intervene in the form of direct investments amounting to £3−4bn over 6 years and/or loan guarantees, both of which could be supported by a new Green Investment Bank (GIB) financed by green bonds. Potentially leveraging up to £14bn in private investment, these could be combined with targeted and temporary mechanisms to address the impact of recent exchange rate movements on imported equipment costs. Direct government investment would have a strong impact on investor confidence in the offshore wind sector.

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[2] BERR (2008) UK Renewable Energy Strategy, although Ernst and Young (2009) Securing the UK's Energy Future estimates this could cost £85.5bn in 2020 rising to £112.5bn in 2025.

[3] http://www.berr.gov.uk/energy/sources/renewables/policy/renewables-obligation/what-is-renewables-obligation/page15633.html

- Although the collapse in global renewable energy investment has temporarily relieved supply chain constraints on sector growth, these will return as the economic recovery gathers pace from 2011 onwards. This effect will be accelerated by the impact of short term support to the renewables industry given by other governments. There is a need to combine short term measures with action to strengthen medium term confidence in UK market growth so that manufacturers begin to invest in new capacity to meet growing demand.

- The Government could immediately deliver greater medium term confidence in the market by addressing grid investment and planning issues to increase the visibility and attractiveness of the UK renewables opportunity. Immediately lowering the threshold at which wind projects can come under the provisions of the Planning Act 2009 could significantly accelerate existing onshore and offshore projects at no cost to the Government, thereby delivering job opportunities and economic recovery through the sector. There is also scope for an active green industrial policy to attract manufacturing industry – especially in offshore renewables – to the UK and create clusters of manufacturing and service excellence.

1. Current situation

Difficulties in financial markets are impacting on renewables investment The UK has 7GW of consented wind projects. A recent news report indicated that, for the offshore sector alone, increasing costs and the credit crisis has created a funding gap of about £2bn for nine projects[4] that have planning consent but haven't yet been built[5]. But this situation seems to have permeated the entire renewables market. An investor's roundtable held in January 2009[6] and research by New Energy Finance[7] identified the following financing issues:

- Limited debt availability as banks put in place more cumbersome credit committee processes while others try to work out how much they can lend;
- Unfavourable terms (the premium for borrowing capital to fund wind projects is now 2−3% up from 0.8% in 2008[8] and loan duration is decreasing);
- Expectation of increased equity (typical debt now 60-70% of total down from 80-90% in 2007), meaning investors with strong balance sheets are favoured;
- Difficulties in delivering club deals because of a lack of trust between banks, which means the syndicated debt markets are effectively 'closed' and smaller deals (sub €50m) are favoured where funds are available for lending;

[4] Project costs total £12 billion.

[5] The Sunday Times (March 22, 2009) Energy firms demand £2bn to save wind farms. http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article5950324.ece

[6] Roundtable held Chatham House in January 2009.

[7] NEF (Feb 2009) Chilly or Freezing: Debt finance for European wind and solar in early 2009.

- Limited private equity funding for new renewable projects and businesses;
- A general falling off of project finance capacity and focus on relationship banking; and
- Rising costs driven by the unfavourable exchange rate.

These factors are creating considerable barriers to investment, not least because they create uncertainty in the economics of power revenue growth. Without ample confidence that future returns on new investment will be sufficient to cover financing costs including delivering an adequate return, there is a risk that the UK's renewables energy investment needs will not be met. UK's difficulties are part of a global phenomenon with clean energy investment falling by 53% in the first quarter of 2009 compared to the same period in 2008[9].

Unstable UK policy framework compounds investors uncertainty and adds cost In general, business dislikes policy risk, which is viewed as one of the most unpredictable and therefore unquantifiable forms of risk. Whether policies are successful or not will be determined by whether they influence investor decisions. Government therefore needs to focus on balancing its own need for decision-making flexibility with business's need for certainty. In order to be effective, governments need to build investor confidence by adhering to the following principles of effective market design:

- Credibility. Governments must set out a clear vision and framework for its policies and the regulation that underpins those policies. Policy and regulatory incoherence must be avoided. For example, the mismatched renewables deployment and grid capacity expansion (which is always playing 'catch-up' while assets potentially lie idle), sends a poor message to investors about credibility.

- Predictability. Governments will need to maintain a level of flexibility in decision-making. However, if interventions can be made on the basis of pre-agreed technical criteria, rather than purely political intervention, then business will understand the rules of the game. The newly banded Renewables Obligation (RO) − with newly technical criteria for intervention − is a good example of predictable intervention. However if the Government simply 'bands-up' Renewable Obligation Certificates (ROCs) in response to current industry pressure to address non-related market problems, this sends a weak message to investors about the predictability of UK policy[10].

- Long-term visibility. Infrastructure investments typically have long capital cycles, i.e. long planning lead times, followed by long life-spans. Policy should provide timely investment

[9] New Energy Finance April 2009.

[10] There have been calls to increase the ROC allocation to offshore wind projects in particular. CCC analysis indicates this would not materially improve the economics of projects.

signals over relevant time periods so that investors can plan efficiently and achieve an adequate commercial return. This should be borne in mind when considering financial interventions in the renewables market to address difficulties in the capital markets.

- Simplicity and transparency. High transaction costs should be avoided. This point can be applied to general issues with the planning system. Currently, over 8GW of wind farm applications are caught in the planning process[11] and during 2003-2008, 50% of wind farms[12] successfully appealed and got planning permission. However, the additional costs are always passed on to consumers in the form of higher energy costs.

2. Policy Framework

To deliver the scale and speed of investment in renewables required to meet the 2020 targets, the Government should consider a series of short and then medium term measures. Short term measures will need to:

- increase the availability of debt finance and reduce the cost of borrowing to get investment in consented projects moving again;
- address rising capital costs;
- ensure that completed renewables projects are connected to the system in a timely fashion; and
- ensure planning decisions are accelerated.

To build medium term confidence there needs to be an immediate and wider examination of how the policy framework can be amended to enable larger and faster flows of capital to be delivered to the renewables industry. Both these timescales are discussed in turn below.

3. Short-term targeted interventions in the market

Retain investor confidence The renewables industry is still regarded by banks as a growth sector but the focus is on opportunities in 'safer and known markets', as well as existing clients and more mature subsectors such as onshore wind, solar and waste[13]. While it is becoming more difficult for these technologies to get financing, deals are still going ahead.

The most extreme problems lie with less proven technologies, such as offshore wind, compounded by the fact such projects tend to be several 100MW in scale, requiring billions in investment. In June 2008 the Crown Estate launched Round 3 of the offshore wind leasing programme, with the expectation that 25GW would be delivered and bidding would begin in early 2009. This investment round is now at particular risk. This paper will mainly focus on

[11] Compared to the 3.3 GW built and 1.7GW under construction.

[12] BWEA (2008) Wind Energy in the UK: A BWEA State of the Industry Report. Available at: http://www.bwea.com/pdf/publications/Industry_Report_08.pdf

[13] Roundtable held by Chatham House, January 2009.

solutions for the offshore wind market because we consider this to be an easily identified significant and strategic element of the UK's renewables ambitions[14]. But the financial proposals described here could be applied throughout the renewables industry.

Loan guarantees Government could focus on increasing the capacity of banks to lend to 'good' assets. When banks lend to projects they are required to retain regulatory capital on their balance sheets to match the loan, because that debt can no longer be securitised. Government could consider issuing loan guarantees for renewable debt, much as it has used for 'toxic' assets. This would make bank capital available to lend to other 'good' assets.

This proposal could be structured as a dedicated loan guarantee facility for renewables projects − the Renewables Finance Guarantee Scheme (RFGS) − by adapting the Enterprise Finance Guarantee model. The scheme would support debt financing for UK renewables projects for terms of up to 15 years. Loans to a value of £500m could be secured using this facility, which would be available until December 2012. The RFGS would be delivered through selected investment banks with existing renewables expertise (including the Green Infrastructure Bank suggested in a companion paper[15]).

Government as a co-investor Alternatively the expertise held in the HMT's new unit[16], set up in March 2009 and housing around 15 project finance specialists could be expanded. This group could widen its focus to provide a debt facility to renewables projects. Strategically significant projects in danger of collapsing because the syndicated debt markets are closed could apply for Government investment.

Those projects that are successful in getting Government financing would show a reduced risk profile, provide a compelling case for private sector funding and reduce the cost of debt needed to finance the balance of the project. This in turn would deliver a rebuilding of trust between the banks, project by project, and enable flagship syndicated deals to get moving again. This would send a strong signal to the market that renewables projects are still attractive propositions, as well rebuilding the elusive confidence within banking sector that the Government has had only minimal success in delivering through recapitalisation. It will be important that if Government chooses this route, it should ensure existing debt terms for projects stay fixed.

We expect that £12-18bn in capital will be required to build the rest of Round 2 offshore wind (7.5-8GW). Direct Government investment of £6bn over 6 years could be provided to build

[14] Because these projects are considered the flagship UK renewables projects and are key to the success or failure of the UK's renewable electricity targets.

[15] Accelerating Green Infrastructure Financing: Outline proposals for UK green bonds and infrastructure bank.

[16] FT (2 March 2009) Taxpayers to foot PFI rescue bill.

investor confidence and ensure these flagship deals go ahead. Once operational, and assuming debt markets are normalised by then, projects could refinance, returning capital to Government, which could also expect to make a return. Again this financing could be provided through the GIB supported by issuing 'green bonds'.

Addressing rising costs Rising costs in the offshore wind market have two principle causes that could be addressed. First, because most renewables manufacturing (including offshore wind) is based overseas, the €/£ exchange rate is a key driver of the capital cost of projects. Government could consider addressing this in the market by banding up the ROCs temporarily or addressing the exchange issue directly – facilitated by the HMT project finance unit - by providing capital grants to project developers to address the negative exchange rate impacts. However, any uplift to projects should be exchange rate-dependent to deliver a 'no regrets' policy.

Second, in the offshore wind market there are only three suppliers. Strong demand for turbines from the market and a small supplier pool has historically driven prices up. Consideration should be given to developing options for a scheduled roll out of turbines to the market to reduce price volatility for developers and ensure a steady deal flow for suppliers.

4. Short-term targeted intervention in addressing regulatory barriers

Connecting renewables to the grid Grid connection times have been increasing (to over 10 years in some instances) for renewable developments because of a lack of available capacity on the network: currently ~1.5GW of wind has been identified by National Grid for early connection under interim measures 'connect and manage' due to start in April 2009[17]. However this appears to have been delayed due to disagreements on constraint costs between Ofgem and National Grid. Government should intervene to ensure cost constraint issues are resolved and connection can go forward.

The 'connect and manage' option needs to be adopted as the ongoing solution to network access for renewables. Early clarity on this would result in certainty of connection within reasonable time and therefore increase the attractiveness of the UK renewables market to investors.

Accelerating planning decisions In addition to the 8GW of wind projects stuck in the planning system, the Beauly-Denny line has been in the planning process since 2005. This line will be pivotal in enabling growth of the renewable energy generation in the north and west of Scotland by making it possible to feed the power generated into the National Grid. It is

[17] BWEA (2008) Wind Energy in the UK: A BWEA State of the Industry Report. Around one-third of this has now been 'promised' but a further GW remains unconnected.

now awaiting a final decision from the Scottish Executive to determine whether construction can go ahead. We recommend that the Government continue to press the Scottish Executive for an affirmative decision as soon as possible. In addition, we suggest Government consider a programme of education for local authorities to communicate clearly the requirement to favourably consider renewable planning applications as laid out in Planning and Policy Statement 1 on Planning and Climate Change (PPS1).

5. Medium-term impact: creating a credible investment growth story

Creating a credible planning environment The Planning Act 2009 is significant because it provides for an improved planning process that should be strategic, streamlined and transparent, fair. It removes the current costly and drawn-out debate around each new proposed renewable energy project through the substitution of National Policy Statements (NPSs) and a single Infrastructure Planning Commission, which will significantly reduce the uncertainty and therefore costs for developers. It also provides a visible 'deal pipeline' that Government could leverage to incentivise manufacturers to locate their businesses in the UK – mitigating the long-term issue of exchange rate risk and providing thousands of jobs. However this new planning process only applies to onshore wind projects of >50MW and offshore projects of >100MW; over 90% of renewables projects fall below this threshold.

The Government should therefore consider immediately lowering the threshold for projects included in the renewables NPS, and this should be linked to the suggested Government-led programme of education for local authorities to communicate clearly the requirement to favourably consider renewable planning applications as laid out in PPS1.

Providing the strategic regulatory change needed to support renewables expansion The Government's document 'Our electricity transmission network: a vision for 2020' is a welcome 'blueprint' for onshore grid investment out to 2020[18]. However there is no mention of offshore grid expansion plans. This is a major omission that negatively impacts on the confidence of business that the UK has a coherent strategic vision for delivering its expanded renewables infrastructure.

There are a suite of other policy failures impacting on offshore wind investment, and in some cases also more generally on the renewables industry, that need to be addressed including:

- Delays in appointing the Offshore Transmission Owners (OFTOs)[19] and lack of socialisation of new offshore grid costs[20];

[18] ENSG (March 2009) Our Electricity Transmission Network: A vision for 2020. Available at http://www.ensg.gov.uk/assets/1696-01-ensg_vision2020.pdf

[19] Around 7,500 km of HVDC cable will be required to build the UK offshore grid. There are just three global suppliers Delays in appointing OFTOs means delays in securing contracts with cable manufacturers. The UK is competing for limited resource in a competitive global market, for example Germany has similar HVDC requirements to the UK.

- Lack of a rationalised approach to offshore grid planning, creating redundancy in the system and increasing cost;
- Slow decision-making processes blocking a move to allowing anticipatory investment in grid capacity (which would reverse the current trend in long grid connection times)[21];
- Lack of a regulatory framework to effectively incentivise heat network investment or biogas deployment at scale[22]; and
- Lack of a clear timetable for smart meter roll-out to facilitate smart grid development to support increased intermittency on the grid caused by upscale in intermittent renewables capacity.

6. Unlocking investor confidence to deliver growth and employment

A study commissioned by the BWEA indicated that an additional 50,000 jobs could be created in the UK wind industry alone out to 2020[23]. The REA estimates forthcoming tariffs for renewable heat and local renewable power would result in over 100,000 jobs by 2020[24]. However this full potential can only be realised if the market and regulatory failures described here are addressed. Timely action to resolve these issues could unlock the potential of the private sector to deliver this investment. But as well as creating a significantly more attractive investment environment it could also provide the UK with a credible deal pipeline, and the opportunity to encourage renewable technology manufacturers to base their operations in the UK. This could create many additional UK jobs in what can only become an increasingly significant growth area in the coming decades as the world transforms its economies to become low carbon.

The UK has some of the most extensive renewable energy resources in the world. We also have a manufacturing tradition that dates back two centuries. The renewables industry could provide the Government with a key element of a credible roadmap to lead the UK out of the current economic downturn. By investing in strategic capital deployment and coherent policy leadership, the UK Government could build a green manufacturing and deployment base to underpin a sustainable recovery and expansion of the UK economy as we move into the new low carbon era.

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[20] Onshore grid costs were largely paid for by the taxpayer under a nationalised regime. New grid capacity will be paid for by developers with costs passed onto consumers. Capex requirements for new grid could be reduced if these costs are spread over all existing grid operators.

[21] The Transmission Access Review is not due to be completed until late 2009.

[22] The renewable heat incentive could incentivise renewable fuel selection but will not address the high capex of heat networks themselves or deliver the regulation necessary to facilitate significant investment in biogas.

[23] Bain and Company (2008) Employment Opportunities and Challenges in the Context of Rapid Industry Growth. Available at: http://www.bain.com/bainweb/publications/publications_detail.asp?id=26689&menu_url=publications_results.asp

[24] Discussions with REA.