Renewables 2020 - The financing challenge

The UK Renewable Energy Strategy sets a binding target of 15% of gross final energy consumption to come from renewable sources by 2020, almost a sevenfold increase in the share of renewables from 2008 levels. In order for Scotland to meet its 2020 target to reduce emissions by 42% by 2020 (compared to 1990 levels) it will need to reach a level of 20% energy consumption derived from renewables, 5% higher than the UK's mandatory target.

It will take an enormous increase in the level of investment in renewables infrastructure, significant technological development, and coordination, drive and cooperation between the public and private sector, allied to the finance to support all of these for the 2020 targets to be met.

A combination of renewable technologies will be relied upon to deliver the 2020 targets. Despite Scotland's legacy of hydro power and strong progress to date on onshore wind, power generation in Scotland is still heavily reliant on fossil fuels.

However, Scotland has exceptional resources for renewable energy. It offers optimal natural conditions for a number of renewable energy technologies including onshore and offshore wind, biomass, marine and hydro. In addition, it has a long standing expertise in relation to the offshore oil and gas industry, which could support the implementation of offshore and marine renewables. The recent Offshore Valuation Group report estimates that Scotland's offshore resource could be as high as 206GW with the waters around the Scottish coastline providing approximately 40% of the UK's fixed offshore wind practical resource, 35% of the floating resource, three quarters of the wave resource and over a third of the combined tidal stream and tidal range resource.

As recognised in the letter presented by the Committee on Climate Change to the Secretary of State, Chris Huhne, on 10th September, there is a series of challenges to be overcome as a matter of urgency to realise the renewable energy potential. These include finalising regulatory arrangements for offshore transmission, agreeing investment to upgrade the onshore transmission network, and reducing the planning application period for new renewable projects and increasing the planning approval rate.

Financing is another fundamental issue which pertains to all technologies. The main challenges currently facing wave and tidal generation relate to the viability of the technology and planning consents to develop the infrastructure. Whilst projects are seeking further finance as they move from the development to testing phase, the levels of investment required are still relatively modest but often fall in the gap between being too large for venture capital and too small for private equity funds.
One of the key funding concerns for biomass is around demonstrating to financiers a reliable long term supply chain in relation to feedstock for large scale generation.

Offshore wind faces the greatest challenge; both in terms of the sheer quantity of funding required to meet the 2020 targets and also the challenge of attracting funders to take development risk. If the targets are to be met, the required average build rate of wind capacity (and the financial investment) will have to be significantly higher than the build rate to date. To put it into context, every year from 2010 to 2020 we will need a build rate of three times that of 2009. Whilst the overall pipeline for offshore wind projects is strong (on the basis of the leases granted by The Crown Estate), a large proportion are in the early stages of development.

A key challenge is that significant capital requirement is needed in a relatively short space of time and in the absence of significant debt financing, new sources of capital will have to be found. Indeed, the size of such essential investment dictates that large-scale private sector finance will be required. Historically the large utilities have dominated the development of renewables developments. However these companies have many competing pressures for capital which may limit their ability to fund all the required projects. A key reason why the financial constraint is an issue is that project finance to support the development phase for many technologies such as biomass and offshore wind projects has not been available to UK projects to date. Solutions to either reduce risk or improve returns for investors must be sought to access project finance.

In particular, we should consider ways in which projects could be opened up to pension and life fund investments. The low carbon energy sector can in principle provide long term stable cash flows which are the requirement for the like of pension funds. However this will require a new way of looking at the allocation of risks amongst all the stake holders involved in developing this new industry.

In a recent analysis of funding options for offshore wind, PricewaterhouseCoopers examined roles for the Green Investment Bank in accelerating the roll out of offshore wind. Options include developing new commercially-priced insurance projects that would make the construction phase much more appealing as a potential investment; taking on the network guarantees that the developers (generally utilities) have to provide and which currently sit on the balance sheet of utilities; and, offering credit enhancement for projects in the way monoline insurers have done in the past. By helping developers reduce construction phase risk and the early stage equity hurdles, the Green Investment Bank could act more as a green catalyst fund helping projects get to a bankable deal.

Securing financing pre-construction is one of the greatest challenges developers face. The danger is that, unless the constraint on funding is eased soon, we will be significantly short of the required roll-out path and the 2020 targets will not be met.