

PIU ENERGY REVIEW : RENEWABLE ENERGY - FURTHER NOTE RESPONSE FROM UNITED UTILITIES

Introduction

The note provides a good summary of the main issues surrounding the renewables industry. In particular we welcome the discussion on further obligations to stimulate continuing development of the renewables market. This will help to establish industry confidence in the long term prospects for growth within the UK. This will create an environment within which a significant share of the generation market can be taken by renewables, but only if the many other issues raised in this paper are also addressed adequately. With interests in both Green Energy and electricity distribution, United Utilities is well placed to contribute to these aspects of the project and is keen to assist the PIU. We also have a different perspective on the cost information and projections provided by the government and would be pleased to share our own analysis with the project team.

Technical potential

Proposition: The UK could meet a significant proportion of electricity needs from renewable sources in the medium term – 20-30% by 2020 may be feasible. In the longer term, much larger proportions, 50% or more, appear possible

We agree with this proposition. However, it is only likely to be achieved if the government and industry move quickly to set up the relevant frameworks, and remove potential impediments to such growth. It is critical for the industry that further obligations, i.e. 20% or 30%, are announced as early as possible. This would have a twofold effect: -

- Provides further comfort and incentive to market players, potential entrants and their investors that a sustainable market is being created.
- Signals the need for difficult and potentially protracted decision making on the impact on other market players, particularly transmission and distribution operators.

Cost trends and development potential

Question: Is the methodology utilised by the PIU for assessing cost reduction potentials appropriate and acceptable? Are there other factors that we have failed to take into account?

Our experience of cost curves and our faith in their relevance is somewhat contrary to the PIU. The key issue is the speed at which the cost convergence or divergence

occurs and that corresponding studies are made on the convergence and where it is happening.

In general the costs figures provided by PIU appear to be a little one dimensional, that is they do not fully consider the changes in costs over time or what is included. In addition the wide ranges of costs discussed are not explained. The cost drivers for renewables are numerous and complex and it is not clear that the PIU has fully developed a picture of the variation of costs within technologies. We are keen to assist the government in the development of these key figures, and can share our own assessments with the project team.

However we can also recognise the dangers of using a single set of cost projections to guide policy. It is critical that the government properly maintains its cost assessments taking account of new information that becomes available in the future. Because there is a wide variety of cost drivers, such as planning regulations, these costs can move quickly up as well as down.

Proposition: The cheapest options for exploiting renewable energy sources will become broadly cost competitive with 'conventional alternatives' within 20 years.

This proposition is too bold. It seems clear from the PIU figures that there is a major gap between current cost estimates for renewables and conventional generation. The convergence of prices is a complex issue and is not a factor simply of time, competitiveness or economies of scale. In particular: -

- The future reduction of costs for onshore wind is uncertain. The optimal sites have generally been developed. Grid connection, and planning (whether in rural or near-urban areas) will continue to be major factors in keeping the costs high for developers.
- Following on from this point it is not correct to assume that offshore cost reduction will piggy back on onshore changes. The main issues are clearly different. Particularly considering the major elements of capital expenditure that arise from the reality of construction offshore and the particular issues of connection offshore.
- Biomass has a potential for cost reduction, however this is a long way from competing with conventional generation. Indeed we believe that it may never compete on a level playing field. Currently the main technologies in development are not commercially proven. Following this hurdle are the extremely high costs involved in energy crop production such as land costs, harvesting and transport. All three of these items are unlikely to reduce greatly; indeed they are likely to increase.
- Fundamentally our analysis of biomass puts the potential for peak operation out of the equation. Biomass is technically and commercially base load.

- The future trend for gas and oil prices will be critically important to any assessment of relative economics of renewable and conventional generation

Build rates and potential targets for 2020

Question: What role, if any, should expanded and longer term targets play for the development of renewables? Should such targets be regulatory or aspirational?

As discussed above, in our view it is critical for the industry that further targets are specified which extend the profile for growth in renewable generation. Given our scepticism over the proposition that renewables will become cost competitive with conventional generation, we would continue to see such targets as part of a regulatory intervention in the generation market. What begins as aspirational, will probably need to be reinforced by regulation.

However we would hope that the government's policy initiatives will also be directed at educating customers to accept the benefits arising from (higher cost) renewable generation. Such measures should operate in tandem with financial incentives to choose a greener source of energy, and to consume efficiently.

Wherever possible financial incentives should be used within existing market mechanisms – the present system of Renewables Obligation Certificates are an excellent example which works through the existing market. However, we also see value in extending the incentives to all components of the supply chain. Incentives for network providers are a critical element within the chain of the development of renewables, particularly as the level of renewables rises in response to enhanced obligations on suppliers. We refer in particular to our article in the Utilities Journal in September on this subject.

Infrastructure issues

Proposition: Network and 'intermittency' constraints will not have a major impact on the development of renewables for the foreseeable future. However, additional development of key technologies for dealing with intermittency should be prioritised in order to hold open the option of much larger contributions in the longer term.

We disagree with the first part of this proposition. We believe that such constraints can already have a major impact. This is likely to grow over time. The effect is gradual and is likely to increase as the level of renewables increase. The mechanisms to prevent this need to be implemented sooner rather than later. At the current level and distribution of renewables the effect on the network is not fully manifested.

However as the proportion of renewables rises, potentially with an uneven distribution across the country, constraints will start to become a major issue. In addition if, as expected, further obligations are implemented, it is important that all renewables and network policies are developed with a clear vision of the long term network issues of high levels (perhaps 50%) of renewable penetration.

We agree with the second part of the proposition. However we believe that as well as technology, market solutions may also be able to achieve some beneficial effect.

Environmental impacts and public perceptions

Proposition: The environmental impacts of renewables are generally low.

Environmental impacts tend to be different, but cannot be ignored. It is clear that renewables provide a clear benefit to the environment by reducing the production of greenhouse gases. However there are still considerable environmental issues to be addressed that are particularly highlighted in the planning process. These include those highlighted in the paper, and (particularly for biomass) transport, air quality and farming practices.

Public opposition can arise even for 'low impact' technology schemes such as small hydro. Our development at Llyn Brianne, for example, had considerable public opposition not to the station itself, but to the overhead lines required for connection. As a result there was considerable additional cost, which as we have discussed above has an impact on the overall economics of the project. We believe more emphasis should be given to public education on the need for environmentally friendly generation, and on the potential benefits to local communities. There may also be scope for an expanded role for Government regional offices to act as one-stop shops, providing advice, not only on planning issues but also on opportunities for financial support for 'green projects'.

Security

Proposition: Renewable energy is an important tool in increasing the security of the energy system

We agree with this proposition as a general statement. The immediate benefit will arise from displacing energy consumed from non-renewable sources. Contributions to network security are more complex. For example areas might end up with particularly high localised penetration of renewables far above the UK average. These may tend to be in rural areas where wind, hydro and biomass resources are high. Clearly there is local potential for these diverse generation capabilities to

augment the existing network; but the weak nature of rural networks might limit the “export” of network security contribution.

Institutional barriers to renewable energy

Comments are invited on current institutional barriers to renewables, their current impacts and how they should be overcome

It is important to recognise the range of potential impediments to renewable generation. In particular we think it is helpful to look at the number of NFPA approved schemes that have not been built. In most of these, connection costs had already been estimated, so the decision not to proceed is more likely to arise from other issues, notably difficulties with the planning process. It is imperative that the various ways that government policies relate to renewable generation schemes are considered in the round. We have been heartened both by the approach the PIU are taking and by the development of a central consents process for off-shore wind developments. We hope this is a model for the future and that a similar drive for consistency between England, Scotland and Wales will also be successful.