

12 January 2012

Sandra McMillan
Sustainable Energy
Department of Energy, Trade and Investment
Netherleigh
Massey Avenue
Belfast
BT4 2JP

Dear Sandra,

Draft Onshore Renewable Electricity Action Plan (OREAP) 2011-2020

The Ulster Farmers' Union (UFU) is the largest farming organisation in Northern Ireland representing over 12,500 farming families. The farming community is the main stakeholder in small scale land-based renewable energy sector and the UFU welcomes the opportunity to respond to the Draft Onshore Renewable Electricity Action Plan (DREAP) 2011-2020.

Background to the UFU representation of small scale generators

The members who are represented by the UFU are small scale generators of renewable electricity and heat. However, in relevance to the consultation we will obviously concentrate on electricity generation. The size of generation means that our producers will be connecting to the distribution network via 11kV lines.

In terms of meeting the 2020 target of 40%, the practical resource available from microgeneration (or small scale generation) is estimated at 100MW (installed capacity), so assuming that the total resource is 1905MW, this looks to be a relatively small share.

However, in this consultation response we will be making the case that the importance and influence of small scale generation goes beyond this. We will be making the case for small scale renewables and ask their needs and concerns are taken into consideration in the future. The UFU policy opinion is that NIE policy is dominated by large scale renewable generators (wind farms etc) when it come to grid strengthening. There is a case for cost sharing and my considering smaller scale solutions (which we will set out) this could have a benefits both for our own sector and the wider economy.

2 Development of Renewable Energy in Northern Ireland

The UFU provided written and oral evidence to the NI Assembly ETI Committee on the continuing barriers in the development of RE in Northern Ireland. Many of these still exist, but the UFU has made significant progress in addressing these with the relevant organisations, companies and stakeholders involved. This includes progress made with NIE in relation to grid connection, but there is still much work to be done.

As far as Technology Costs are concerned, we will address these later in the response (PAGE x). However in the meantime we will address the specific area of planning.

2.7 - Planning

The issue of planning in relation to small scale Renewables projects remains a major area of concern for the UFU.

- The UFU have gone on record saying that there needs to be a consistent and transparent decision making process when it comes to planning policy on wind turbines. It was apparent that differing decisions were being made from region to region with NI. In particular the policy on Visual Impact and decisions are based upon an individual assessment on the day rather any solid theoretical grounding.
- Need for a review of Permitted Development Rights for Small Scale Renewables Projects
- Proximity to ASSIs/World Heritage Sites would appear to mean a blanket ban for potential sites for small scale turbines. The Causeway Coast is an example, where small turbine sites have been turned down, despite being outside the boundaries of the Giants Causeway. There are a number of UFU members who have been affected by this and the UFU continue to lobby for an explanation.

3 Grid Development

3.1 – The Electricity Grid in Northern Ireland

With the grid subdivided into Transmission and Distribution Network. With the latter operating at a low voltage, it is the 11kV lines which our small scale generators are connecting to and relevant to our submission. To accommodate small scale renewables on the 11kV lines, in more cases than not, the line has to be upgraded to 3 Phase, an extra cost of £35,000.

3.2 - Integration of renewables onto the grid/Technology Costs/4.82 Electricity Grid

On page 11 of the consultation there is recognition of the beneficial impact of small scale generation. It states that on a purely cost basis this scale of generation is typically more expensive than larger scale generation. In the consultation DETI state that this is generally due to lower load factors which means that capital costs which are relatively higher because of the relative immaturity of the technologies must be recovered in relatively few running hours.

However, the UFU believes that with the application of Cost Sharing this should not necessarily be the case.

Through Interconnection and grid strengthening (stated in the DETI consultation) there is a physical and financial commitment to development of the grid in Northern Ireland. The UFU believe that as far as grid strengthening and interconnection is concerned, the emphasis is steered towards larger scale renewables at the detriment of the smaller scale which we represent.

Higher capital costs in relative terms are greater for small scale generators when it comes to grid connection specifically and at £33,000 per km, the upgrade from single to 3 Phase is a significant part of the connection charge for small scale generators.

Let us consider the example of the Magherakeel windfarm on the outskirts of Castleterragh. The wind farm has had a dedicated line connecting their turbines to the grid. This is expected to be c.2% of the capital

cost of getting the generator up and running. If you compare this capital commitment to a small scale wind turbine, the grid connection part of initial capital expenditure would be as much as 50% of the total.

In the case of grid enhancement for connecting a small scale turbine to the grid, it is “the developer which pays”. This means that to connect a 3 phase line to a turbine, it is the turbine developer who has to pick up the bill. Yet, with the introduction of a new upgraded 3 phase line, other customers on the line will reap the benefits of this enhanced service, namely stronger poles, less instances of voltage imbalance and less chance of outages during bad weather. So all in all, a more stable and better quality standard of service.

Q – Do you agree that grid development is essential to developing renewable is essential to developing renewable energy sources? If so, who should pay for this grid development?

11kV network is contracted to distribute electricity to rural areas but it is not designed to facilitate small scale renewables. The solution proposed by the UFU is as follows.

Let us consider all the small-scale renewable projects wishing to access the 11kV network. Many of these lines will have to be upgraded from single to 3 phase, adding to the significant grid connection costs. In many cases, a new line is installed to service turbine and neighbouring farms benefit from being able to access the more robust and efficient 3 phase line, yet it is the developer who pays as already stated.

Should NIE convert all the 11kV lines which are waiting to accommodate the waiting list of small scale renewables generators, this would cumulatively amount to c. 1,000km of line in Northern Ireland on the 11kV network. The UFU has calculated that it would cost £35 million to upgrade these lines to 3 phase. (1,000km of line in NI at a cost of £35,000 per km = £35m). In terms of who pays this would be logical solution since it could be generated from the RP5 budget, with £35m only 4% of the total allocated budget which totals £898 million.

This grid strengthening we have described above would have wider benefit to the Northern Ireland economy. It is widely accepted that a very large percentage of the electricity generated from large wind farms is exported out of the country. Out of the 100MW of installed capacity expected to come online, a rate of 20% efficiency is the minimum expected. Therefore, in terms of what this mean in monetary terms for the NI economy per annum, consider the following equation;

$20,000\text{kW} (20\text{MW}) \times 8760 \text{ (number of hours in a year)} \times 22\text{p} \text{ (current value of electricity)} = £42\text{m}$

That means that should the level of small scale electricity we have described get online, it will mean £42m for the Northern Ireland economy. In terms of the investment case, £42m is £7m greater than the £35m cost of upgrading to 3 phase. The 20% efficiency will improve during the lifespan of the industry and therefore, the benefit to the economy will broaden in time.

The UFU advocates the grid strengthening of 1,000km of 11kV lines for the following reasons;

- will remove the “developer must pay” ethos
- improve reliability of service to all users on the line (wider benefit)
- Small proportion of the agreed £898m in RP5
- Reduce grid connection costs for small scale developers/generators
- Wider benefit to the NI economy compared to exporting large scale wind farms
- Enhanced grid security for the 11kV lines
- Allow consideration of alternative generation (Distributed Generation).

Q – Is there a necessity for the Utility Regulator to consider longer term planning than the current 5 year period?

The answer to this question is an unequivocal yes. The electricity grid is changing rapidly and this will continue at a pace. Not only are the types of technology wishing to access the grid changing, so too is the concept of grid connection itself.

- Fuel Cell research - For the last couple of years, alternative electricity generation in the form of hydrogen fuel cells was a thing of fancy, but the UFU has been reliably informed that it could be closer than originally thought. A fuel cell is a device that converts the chemical energy of a fuel (hydrogen, natural gas, methanol etc) and an oxidant (air or oxygen) into electricity. In principle, a fuel cell operates like a battery, however, a fuel cell does not run down or require recharging as a battery would. It will produce electricity and heat as long as fuel and an oxidizer are supplied. An
- Distributed Generation/Embedded generation – The UFU has advocated Distributed Generation as a possible alternative in terms of future grid development.

Only by long term planning will we be able to keep up to date with the rapidly changing situation.

4 The Strategic Environmental Assessment (SEA) and the draft Strategic Action Plan 2010-11

The UFU welcomes the recognition by DETI of the role of Biomass in meeting 2020 targets.

4.6.2 – Biomass

Sustainability Criteria – One of the stated benefits of the Sustainability Criteria is the creation of a level playing field across the UK. Currently the playing field is anything but and we have formally lobbied OFGEM on this with a detailed report which was submitted in November 2011. The UFU are in doubt that there is a need for Sustainability Criteria, however, a one-fits-all approach cannot be taken, when a region such as Northern Ireland has many differing variables which need to be taken into consideration.

The UFU have lobbied OFGEM to consider the views of stakeholders in Northern Ireland and apply the criteria according to our unique farming characteristics and geographical landscape, as this one-size-fits-all has the potential to derail our fledgling biomass industry. The UFU are calling for a regional approach to Sustainability Criteria with Northern Ireland working out how to apply these criteria to our own set of circumstances.

Need for indigenous biomass crop production, yet this needs to be balanced by concerns have been raised about the impact upon conacre prices in Northern Ireland as the drive to grow biomass crops may out-price conventional farming. This is a sensitive matter in the UFU and one which we continue to monitor. This is addressed in the consultation by DETI when they state that the potential to develop biomass at a large scale is dependant upon the types of fuel and fuel sources as a large land area is required to provide sufficient fuel demand for medium to large biomass plants.

However, what this does open up is the opportunity to develop and promote smaller scale biomass plants which could be incorporated on-farm.

Question - Do you think that a review of local biomass production studies is necessary in NI to ensure that research and knowledge are up to date?

Yes, without a doubt. This would mean that the opening for new or developing technologies could be kept open which is crucial in this still developing sector.

This approach could also ensure that the weight of uptake is not dominated by the larger scale generators at the expense of smaller scale on farm biomass projects, thereby ensuring that conacre prices remain reflective and not artificially inflated by the speculative demand for biomass crops.

The review could also show the necessity of further funding in the form of a Biomass Challenge Fund. The first tranche was seen to be very successful and further funding would ensure that the uptake is continued for smaller scale generators.

4.6.3 – Other

DETI recognize the “modest contribution” of small scale renewables. DETI states that DOE Planning had received 729 planning applications for small scale generation schemes, and this has now increased to 848 since the publication of the Consultation in October 2011. Yet according to NIE they only have 70 “live” cases in the queue to be connected to the grid. The main question would be how many of these will actually reach completion, with many expected to drop out due to the significant grid connection costs as well as other barriers we have mentioned. However on paper the numbers awaiting to access the grid could put severe pressure on the already straining 11kV network.

In this consultation DETI recognize the strain that this is putting on the 11kV distribution network and this give further credence to the UFU policy that the 1,000km of line awaiting the connection of renewable generators should be upgraded to 3 Phase for the integration of small scale renewable projects.

4.8.2 – Electricity Grid (in conjunction of what was stated above)

Do you agree that grid development is essential to developing renewable energy sources? If so, who should pay this grid developments?

Grid development is crucial to the development of renewable energy sources. However, as principal representative for land-based small scale generators, we believe that there is a most-effective and fairer solution available for ensuring these generators are able to access the electricity grid. This has not been accounted for in the current proposals with the policy direction dominated by the drive to get larger scale renewables online. It is accepted that we will bring a relatively small level of capacity to the table (in terms what we will contribute to the 40% 2020 target). However, smaller scale generation will have a positive impact upon rural communities, both possibly from electricity generated as well as the wider benefit of being able to access the upgraded 3 phase lines. Benefit would come from a better quality and more reliable service. The upgraded 3 phase line would be more resilient during storms and less changes are power outages.

Without wishing to appear too simplistic, this upgrade of lines to 3 Phase could be paid for out of the £898 million which has been submitted by NIE.

Q - Is there a necessity for the Utility Regulator to consider longer term planning than the current five year price control period?

In light of what we have discussed the answer would be yes. The belief would be that through longer term planning, the needs and wishes of the smaller scale sector could be taken into consideration as well as alternative methods of grid connection.

5 Economic Considerations

5.5 – Regulatory Framework

RP5 identifies that cost restraints is an off-putting factor for would-be developers and generators. The UFU feels that there is hesitancy for the consumer to have to pay any significant amount for renewables, both in light of the current economic environment as well as a growing scepticism amongst the wider public about the merits of wind farms.

Question – Do you consider that the economic benefit of renewable electricity production has been identified?

By not upgrading the 11kV line to 3 Phase for the integration of renewable technologies, the economic benefit is not being realised in rural areas. The added economic benefit from having access to 3 phase lines is also a factor which should be taken into consideration.

Summary

The UFU are broadly in favour of the OREAP, should it mean the pursuit and achievement of a secure and efficient grid, incorporating renewable energy (small and large scales) and producing electricity which benefits the local economy.

However, we believe that more consideration should be given to smaller scale generators when the strengthening of the grid is considered. It is unwise to dismiss the impact of small scale renewables simply on account of the size of the capacity. A simple reassessment of budget allocation within RP5 would mean strengthening of the 11kV network, allowing small scale renewables the chance to access the grid more easily and opening up significant benefit to the wider economy in Northern Ireland. Taking into consideration the lack of benefit being derived to the local market from large scale wind farms.

If you have any further queries, do not hesitate to contact me.

Yours sincerely,

Chris Osborne
UFU Policy Officer