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Caspar Swales  
Head of Economics and Efficiencies (Finance and Network Assets)  
Utility Regulator  
Queens House  
14 Queen Street  
Belfast  
BT1 6ER

Dear Caspar,

### **Northern Ireland Electricity Networks Transmission and Distribution 6<sup>th</sup> Price Control (RP6)**

The Ulster Farmers Union (UFU) is the largest representative of farmers and landowners in Northern Ireland with over 11,500 members.

NI farmers are significant customers of NIE Networks with c.40,000 farms throughout Northern Ireland, farmers are heavily dependent upon the 11kV network and lines.

Since 2005 and the advent of the NIRO, farmers have also become on-farm energy generators providing renewable electricity to the grid. The UFU are also the largest single representative of small-scale land-based renewable energy generators (<250kW) in Northern Ireland, with many of our members involved in a wide range of renewable projects.

### **Connected Small Scale Renewables (SSRs) in Northern Ireland**

In terms of connected SSRs in NI, currently there is 206MW of SSR connected. UFU members are involved in Wind, Hydro, Anaerobic Digestion and Solar PV renewable technologies. Our members have committed significant capital investment to install such technologies to avail of the Northern Ireland Renewable Obligation (NIRO).

Attempting to connect to the Grid, our members have experienced major problems over the last 11 years. This is reflected in the large number of connections which are unlikely to be completed in NI. According to NIE Networks, there is 85MW of committed grid connection applications in the system and a further 58MW of applications to be processed.

The likelihood is that this 58MW will not be connected to the grid nor receive NIRO accreditation, worst case scenario is that those who applied will have wasted their time and money. We will come back to this in the content of our response but it is worth making note.

### **Early Closure of the NIRO**

On 30 September 2015, the Department of Enterprise Trade and Investment Minister Jonathan Bell launched a consultation stating DETI's intention to close the NIRO early for onshore wind one year early. This was despite having publically stated 3 months previously

that that DETI had no intention of closing the NIRO early. This decision left many UFU members out of pocket financially.

There is now no subsidised support for SSR. DETI consulted on rolling out of a Small Scale Feed-In Tariff (last seen in 2013) but at the time of preparing this consultation response this either on hold or has been scrapped. The current political impasse could explain this confusion however, some people put this down to a continued lack of forward-looking Energy Policy in Northern Ireland.

### **Renewable Heat Incentive (RHI)**

Whilst renewable heat generation has no bearing on this Consultation, the impact will on the SSR sector and wider farming industry will be long lasting. On 17 May 2017, a PwC report cleared all poultry and mushroom sectors from any suggestion of misuse following a number of on-farm audits. However, despite this the fall-out from the RHI will have a bearing upon the future of the SSR sector in Northern Ireland with the sector facing on-going and lasting reputational damage.

With consideration to this background information, the UFU response will focus on Annex O; Assessment of RP6 Network Investment Direct Allowances, as this would have direct relevance to our members.

### **Chapter 4 – Distribution Network Reinforcement**

- **D57 - Secondary Network Expenditure and LCT**

Secondary Network Expenditure associated with Low Carbon Technologies - The uptake of LCTs is intrinsically linked with the development of energy storage technology as the two work hand-in-hand. £2.63m falls significantly short of the £13.2m proposed by NIE Networks in their proposal and the UFU are calling for consideration to be given to more investment.

Storage is looked at in further detail later in this consultation response.

- **D602 - Investing for the Future**

There are major doubts overhanging the sector whether 58MW of SSR will be connected to the grid, this capacity is still in the application phase with NIE Networks. Should this capacity not be connected, many of our members may still wish to look at how they could get connected in the future. Consequently, “Investing for the Future” is a crucial area for the UFU in the NIE Networks submission.

The UFU have publically stated that without a financial incentives to install SSR on farm, we would need to look at alternative ways in which SSRs can be implemented and installed in Northern Ireland and this has formed the basis for our policy work over the last number of years. In fact, the UFU have been at the forefront of offering blue sky thinking in terms of how renewable electricity can be distributed and consumed in Northern Ireland.

Previously generators were rewarded financially for single installations (often only connected to the electricity grid and not integrated to the farm business). Consequently, this led to waste, partially due to the intermittency of renewable generation and more importantly due to the nature and design of the NIRO. By simply exporting back to the grid, it meant that the generated electricity was not being utilized to its optimum, thereby not facilitating the efficient use of electricity on farm.

The UFU have taken an alternative look as to how renewable energy could be used in the Northern Ireland countryside and in a way which renewable technology could be integrated into rural businesses.

This change of thinking is long overdue, with the long term goal being the design and construction of local/rural power systems so as to meet the exact needs of rural consumers. There needs to be a move from a supply-side infrastructure to “the other side of the metre”, in other words, a bottom up approach and smart metering (for example) would support this. Going forward this could involve Distributed Generation, a different way of managing demand and supply of generated renewable energy. This would improve the incorporation of alternative generation sources, allowing the ability to “switch-on” controllable site-loads.

Key areas include;

- **Local Supply (Microgrids)** – a local farm could produce renewable electricity via wind turbine/AD unit/solar PV and sell it to a nearby business. Whilst wheeling is not currently permitted, the merits should be considered by policy makers, with the advantage being the value to the rural economy and energy efficiency improvements which will result.
- **Zero-Net Energy** – this is where the renewable energy produced on a farm meets the exact needs of business, with no spill or wastage (unlike under the ROC system). In keeping with our previously mentioned policy priority of rurally generated power meeting the exact needs of rural consumers.

This is will involve upsetting the status quo and the challenge will be turning these ideas into action and implementation.

- **Storage** - If an integrated energy storage solution was available, the farmer could store the electricity generated on farm and use it as and when needed. This would improve on-farm energy efficiency and reduce greenhouse emissions.

The prominent advantage of on-farm energy storage is that it can be an alternative to traditional grid reinforcement, reducing peak demand (reducing losses and reducing asset allocation) and leading to carbon savings which result from the displacement of peak generation.

#### **Advantages of on-farm storage**

- Balance demand and supply of on-site electricity generation
- More efficient dispatch of generated energy
- Absorbs excess generated power
- Contribute to easing network congestion
- Enhance power supply
- Flexible location of storage units (with quick construction time)
- Match power and energy to requirement
- Allow integration with other on-farm energy generation units

The UFU have been liaising with AES GB and Ireland about a small ion battery storage solution, however, the debate needs to be widened to include unconventional battery storage technologies and one such is organic storage.

The UFU would be keen to see a flow battery developed which allows for the extreme proportions of energy-to-power which arise from renewable generation, and instead of vanadium ions, utilising plant molecules grown locally (rhubarb being one example).

In terms of progress to date the UFU have lobbied NIE Networks for the last 5 years on the need for energy storage and we were encouraged when NIE Networks specifically mentioned energy storage in their RP6 Business Plan

**The UFU are gravely disappointed that the Utility Regulator has turned down the NIE Networks proposal for investment to look into the facilitation of energy storage services. We are urging the Utility Regulator to not only reconsider their decision, but also to publically recognize the role of on-farm energy storage in the future.**

## **Chapter 5 - Distribution Network Optional Expenditure**

In Northern Ireland there is approximately 3.5 times more overhead line per customer than the average Distribution Network Operator on the UK mainland, and this illustrates the importance of a resilient and reliable electricity network being available. Following the ice storm of 2010 the UFU made the case for extra investment in line strengthening and reinforcement on the 11kV network in Northern Ireland.

Consider the three specific examples below (these are just three examples as we have also made the case on numerous occasions in Press Releases, Consultation Responses and in formal representations to Government Committees at Stormont and Westminster.

**18/07/2012 - UFU submission to Utility Regulator Draft Determination for NIE Transmission and Distribution RP5.** UFU called for the strengthening of the 11kV grid. This submission supported NIE seeking funding to reinforce and strengthen the 11kV grid.

**27/11/2012 - UFU response to Competition Commission Provisional Determination on Electricity Price Control** – This was our formal submission to the Competition Commission.

**01/06/2016 - PwC Cost Benefit Analysis** - UFU provided PwC with information to support their Cost Benefit Analysis on the need for investment to strengthen the 11kV overhead line network.

- **Impact of prolonged power cuts**

In our submission to PwC, we highlighted the difference between non-domestic and domestic in terms of inconvenience caused by power cuts. A prolonged power cut would have a significantly greater impact upon a farm business customer compared to domestic. For a domestic household it would more of an inconvenience unlike a farm whereby their livelihood could be a risk from any outage in power.

- **Farming reliance upon diesel generators**

Almost every dairy/pig/poultry farm has some form of back up diesel generator. Not always in the conventional sense, many farms have a diesel-powered PTO shaft powering a generator. Animal welfare is the foremost priority for a livestock farm and to mitigate against any loss of power, a back-up power source is a necessity.

There is an added hidden cost associated with diesel generators, the impact on the environment by the generation of nitrous oxide. To have a tractor constantly running will release a steady flow of nitrous oxide and this will impact upon the environment.

Whilst many farms will have a back-up generator (either tractor-driven via a PTO shaft or a stand-alone traditional generator), it does not detract from the need for rural businesses to have access to a permanent and reliable service in the form of their 11kV and this must be reflected in the quality of the infrastructure.

Failure to complete much needed strengthening of the assets on the 11kV lines will lead to higher input costs, loss of man hours (by having to oversee emergency power supplies) and invariably reduced output of our industry.

### **Conclusion**

With the continued political impasse adding to an already stalled Renewable Energy policy, the UFU have led the policy debate in how SSRs could look in the future, in a world without ROC/FIT support and how future installations could be better integrated with existing farm businesses.

However, the Utility Regulator draft determination has failed to acknowledge this and consequently the UFU believe that they have fallen short of delivering any hope of achieving these not-so unreasonable goals. The UFU are asking that the Utility Regulator takes this into consideration and re-address the concerns highlighted in our submission.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'C Osborne', written in a cursive style.

**Chris Osborne**  
**Senior Policy Officer**