



25 November 2015

Pereceptive Insight Market Research Ltd.  
(NIE Networks Research)  
Jacob Peterson House  
109 Bloomfield Road  
Belfast  
BT5 5AB

Dear Sirs,

### **Have Your Say On the Future of the Electricity Network**

The Ulster Farmers' Union (UFU) welcome the opportunity to contribute to this survey.

The UFU is the largest representative of farmers and landowners in Northern Ireland with over 12,000 members. With c.40,000 farms throughout Northern Ireland, our members are solely dependent upon the 11kV network and lines. If you consider the fact that in Northern Ireland there is approximately 3.5 times more overhead line per customer than the average Distribution Network Operator on the UK mainland, which illustrates the importance of a resilient and reliable electricity network being available.

In addition, we are 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. We have experienced major problems connecting to the grid over the last 10 years and many of our members viewed NIE's policy (or lack of) towards small scale renewables as being a fire fighting exercise, as a number of unprecedented problems arose during the later parts of RP4 and throughout RP5.

RP6 is of crucial importance to our members for the following reasons;

- i. Farm businesses consume large and significant volumes of electricity every second of a working day.
- ii. NI farm land incorporate and facilitate much of NIE infrastructure and capital equipment (lines, poles, substations etc) and our members receive a wayleave payment in many instances.
- iii. Farmers and land owners are the main generators of small scale renewable electricity (<250kW) in Northern Ireland.

The UFU position as far as RP6 is concerned;

- RP6 needs to reflect adequate investment in the 11kV network
- Adequate flexibility in how small scale renewables connect to the grid

**Maintaining our current service levels**

**1. Do you agree that NIE Networks' investment programme should, as a minimum, aim to maintain its current service levels until 2024?**

Yes.

**Improving customer service**

**2. How can we make it easier for our customers to communicate with us?**

The development of social media should continue and include improved interaction in relation to non-domestic customers and specifically grid connection applications.

**3. Do you agree with our strategy for improving our overall customer service?**

See Question 4 below.

**4. Are there other areas that we haven't considered?**

The focus of this paper appears to be towards residential/domestic customers. There needs to be more focus on improving Customer Service for those seeking to connect small scale renewables to the grid.

**Reducing unplanned power cuts**

**5. Do you agree that NIE Networks should focus its investment programme on improving the service for homes and businesses by reducing power cuts?**

Yes.

**6. Which of the investment options do you support?**

Option 2.

**Increasing resilience to severe weather**

**7. Do you agree that NIE Networks should increase investment in this area to improve the networks' resilience to severe weather?**

Yes. Such is the age of the lower voltage network this work is urgently required such is our reliance upon these lines.

**8. Which of the investment options do you support?**

Option 2.

**Building a smarter network**

**9. Do you agree that NIE Networks should invest in exploring new technologies and approaches that could be used to solve network problems and avoid costly reinforcements in the future?**

In the first instance, the UFU would veer on the side of caution regarding investment on network capacity. Whilst it is urgently needed, we would not want any work to duplicate the work carried out under Project 40 which is underway. Rather, focus could be on improving the communications behind any managed connection solution which will be launched before RP6.

Consideration will need to be given to the strengthening of the transmission network in light of recent concerns. The UFU would urge NIE and SONI to work together on this.

At the time of submitting this reply to the Consultation, the Northern Ireland Small Scale renewables sector is facing an uncertain future. To date, there has been little or no integration on local farming

enterprises and one of the biggest challenges facing our sector is to increase self consumption of energy.

#### **i. Storage**

The only way the above challenges can be addressed is by looking at on-farm storage solution; energy and thermal.

There are two scales of storage which need to be considered; utility scale and on-farm size. As far as the former is concerned, AES at Kilroot have already started construction of 10MW of interconnected energy storage, this is equivalent to 20MW of flexible resource. Whilst SONI are involved at the transmission side of this NIE need to be giving this consideration as this can be replicated at a smaller scale on farms.

Renewables cannot be controlled in order to provide continuous base-load or peak-load power when it is needed on a farm. The challenge is trying to achieve this is how can energy be stored efficiently and then distributed to the site? This is the challenge and NIE need to factor this into RP6.

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

- Balance demand and supply of electricity when generated on-site
- More efficient dispatch of generated energy
- Absorbs excess generated power
- Ease network congestion
- Enhances power supply
- Flexible location of storage units (with quick construction time)
- Match power and energy to requirement
- Increase ability to integrate with other energy sources

#### **ii. Microgrid**

NIE need to consider new approaches such as on farm storage solutions and consideration of microgrids. Micro-grids are smart networks capable of aggregating and optimising diverse renewable energy resources. They can either operate in "island-mode" or connected to the grid. The concept of a micro-grid will apply to remote rural parts of Northern Ireland and /or areas where renewable generators are unable to connect to the grid (maybe for capacity/reverse power flow reasons). It involves the combination of interconnected loads and co-located power generation sources.

For Micro-grids to be an reality in Northern Ireland NIE will need to keep an open mind to new technology or lesser grid connection processes, for example, Zero-Export

The Ulster Farmers Union have been looking at these two specific areas over the last 3 years and believe that if small scale renewables are to have a future (particularly in an environment without subsidised support) then storage and microgrids will need to be supported by NIE and be part of building a smarter grid.

#### **10. How many trials of this type do you think NIE Networks should carry out – 3 or 5?**

The UFU believe that NIE must focus on the connecting of renewables.

**11. What are the top 2 projects from this list that you would like to see NIE Networks deliver and why?**

Battery Technology (C)  
Active Fault Level (B)

For reasons previously mentioned in this response.

**12. Are there any areas that you think we shouldn't be focusing on?**

No.

**13. Are there other trials that we should also be considering?**

The trialling of integrating renewable energy storage to small scale generators should be given priority.

#### **Connections**

By way of an overview, we would like to refer NIE to the ongoing OFGEM consultation; "Quicker and more efficient connections". This concluded on 12 November 2015, with OFGEM stressing the importance of getting a prompt connection to the local distribution network, recognising that as well as the quality of service, one of the most important factors in getting connected is that the network reinforcement costs can affect whether or not their project goes ahead. Whilst the lack of spare capacity is recognised with the ongoing work of Project 40, there is an acknowledgement that any spare capacity is used more efficiently or if new capacity is created in anticipation of future connection requirements. OFGEM state that this can be done by finding smart ways to reduce the need for additional capacity on the network, or through funding models that enable reinforcement to take place in anticipation of future connection customer requirements.

**14. What aspects of the new connections process would you most like NIE Networks to focus on?**

There is a barrier at present which is hindering local farmers from trading the electricity they produce with their neighbours and/or the nearby rural community. Any new connections process should give consideration to supporting landowners who wish to trade the electricity they produce with their neighbours and the UFU would welcome such an acknowledgement in RP6.

If you have any queries do not hesitate to give me a call on 028 90 370222.

Yours faithfully,



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