simple power

15th April 2014

Mr Patsy McGlone MLA
Chairperson
Committee for Enterprise, Trade and Investment
Northern Ireland Assembly
Parliament Buildings
Stormont
Belfast
BT4 3XX

Re: DETI Committee Electricity Price Review – Grid Connections

Dear Mr McGlone,

Thank you for the opportunity to respond to your Committee's inquiry and request for information in relation to grid connections for 'on-farm' single wind turbines.

We had previously written to the Committee (23rd November 2013) clarifying certain aspects of evidence on grid costs of small scale renewables being given by other respondents. This note sets out in some detail Simple Power's experience of applying to Northern Ireland Electricity (NIE) for grid connections.

1. Summary response

By way of a brief reminder, the Northern Ireland small-scale (farmed based) wind turbine sector is characterised by many single site developers and a few multi-site developers. Simple Power is, by some distance, the largest operator in the sector in NI. Our company is locally owned and employs 9 full-time staff and sustains approximately 40 indirect jobs through specialist local contracting and professional services.

Simple Power was formed with a business model of offering landowners a risk-free route to securing an income from a wind turbine on their land, by bringing the benefits of professional project management, process standardisation, finance and scale to site development. Due to the risks and costs involved and the difficulty in obtaining finance, many NI farmers could not otherwise benefit from the small scale wind incentive.

Our business model has proved attractive to farmers and Simple Power now has some 250 sites across Northern Ireland agreed or under option. However, due to the difficulties in obtaining NIE grid connections, Simple Power has had to revise its target for what can be achieved within the timescale for current NIRO legislation.

The difficulty in obtaining a viable connection offer to the NIE grid is now ***severe***. Only a small proportion of connection applications are receiving an acceptable offer – or any offer at all.

The difficulty in obtaining a suitable connection offer is due to both the very high cost being asked from developers to reinforce the 11kV network to accommodate a small scale connection and the inability of NIE's 33kV network to cater for the number of applications being sought.

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In addition, even when a suitable connection offer is available the length of time to provide the connection is between 12 and 18 months.

Companies in Great Britain have adopted *'smart'* solutions to providing reasonable cost connections to their 11kV networks and to the congestion problems on their 33kV networks.

NIE needs to adopt a similar, proactive approach to finding alternative solutions and also to come to an agreement with the Utility Regulator for capital expenditure to reinforce the 33kV network where required. NIE also needs to examine its processes and timelines for providing connections and reduce the time from connections acceptance to physical connection considerably.

2. The 11kV problem and its solution

NIE's rural 11kV network was developed mainly to provide supply to dispersed farms and dwellings. During much of this period the company operated under capital expenditure constraints and as a consequence the network was built to the minimum specification necessary to supply these properties. Hence the network now experiences difficulties in accommodating small scale generation onto the rural network. This has resulted in very high connection offers to developers. Offers of £500,000 and above are not uncommon. The economics of small scale projects cannot support connection costs of this magnitude.

The table below shows the disparity between consented and actually connected projects to the end of 2013.

Table 1: Consented versus Connected Projects

Projects > 100kW	2010	2011	2012	2013	Total
Consented	50	135	313	281	779
Connected	7	5	30	13	55

The table shows the small number of small wind turbines between 100kW and 250kW connected and does not include Anaerobic Digestion schemes which would exacerbate the problem.

Similar problems have been experienced on the networks of the Distribution Network Operators (DNOs) in GB and alternative solutions employing 'smart' technology have been applied. Essentially the 'smart' technology exploits the fact that the problem on the network only arises under certain conditions (i.e. when the generation from the turbine is high and load on the line is low). The 'smart' technology is then called upon to act to reduce the generation under these conditions thereby removing the problem on the network.

Using this technology means that it is not necessary to reinforce the line and the high connection costs are avoided. However, the project developer has to accept the fact that, under certain conditions, the output of its generation will be reduced – this is called *Non-Firm Access.*

Our view is that NIE could be more proactive in using 'smart' technology to provide viable connection offers.

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3. The 33kV problem and its solutions

The difficulty in gaining access to the 11kV network is further exacerbated by the ability of the 33kV network to cater for the output of the aggregation of generators on the 11kV network.

At the moment some 70 33kV substation locations (approximately 30% of the network) are classed as 'conditional', meaning any connection offer is conditional on the 33kV restriction being resolved. Therefore developers have no prospect (or timeline) of receiving a connection offer on the networks supplied by these substations.

A small amount of expenditure (some £2.3m) was recently agreed by the Utility Regulator to rectify some 40 substations but this still leaves large parts of the electricity network, and hence the country, incapable of providing a connection for a small turbine.

'Smart' technology has been applied in GB to managing the 33kV problem and thereby avoiding capital expenditure where it is feasible to do so and, again, NIE needs to be more proactive in pursuing these solutions.

However, in our view there will need to be some expenditure on the 33kV network to resolve the difficulties at many more of these locations. Otherwise the number of small scale renewables able to connect to the network will be severely limited.

NIE has provided estimates of costs to the Utility Regulator for removing the restriction at the 33kV substation in question but there seems to be little or no constructive dialogue between NIE and the Regulator to come to an agreement.

Developers recognise that 33kV reinforcement costs fall on consumers and therefore a sensible approach must be taken to the amount of expenditure allowed.

However, we also believe that if NIE and the regulator were to engage constructively then a mix of solutions involving 'smart' technology plus some additional expenditure could be agreed. The problem cannot be allowed to sit indefinitely with no attempt to find a solution.

From our perspective a large part of the problem has been the standoff between NIE and the Regulator over the recent dispute with the Competition Commission.

In our view the way forward in addressing this problem is for NIE and the Regulator (and DETI if needs be, as the architect of the policy) to engage in order to agree the solution.

Although any solution may take some time to implement, an agreement as to the nature of the solution would give developers confidence that there will be a future opportunity.

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4. The connection application process

There are a number of simple things that NIE could do in the connection application process that would be of great assistance to developers by avoiding time and money being wasted on sites that are unlikely to be viable due to high connection costs.

a. Budget Estimates

Currently developers require planning permission for their development before making an application for connection to the electricity network. This was a sensible arrangement, to ensure the best utilisation of available capacity, but it was predicated on the assumption that the connection cost was likely to be reasonable. Given the current problems with connection to the network we believe it is **unreasonable** to require developers to spend money progressing sites through the planning process when the probability of an acceptable connection offer is extremely limited. NIE need to introduce a facility where a request can be made by a developer to get an indication as to whether a potential site is likely to be high cost or constrained by 33kV congestion. This would in effect be a **'budget estimate'** and would help developers decide whether to progress the site through the planning process. The budget estimate would need a quick turnaround, say 2 weeks. NIE would also benefit from not having to provide fully designed quotations for projects that have no prospect of proceeding.

The requirement for a development to have planning permission before making a full application for connection would remain.

b. Access to NIE Geographic Information System (GIS)

When small scale renewable generation was in its infancy developers tended to look for good sites and then think about connection to the electricity network. This approach has had to change in that now developers have to first think of the electricity network and where it might be possible to get an economic connection before then looking for potential sites around those locations. The problem with this new approach is that information about the electricity network and its capacity is severely limited. NIE need to allow developers access to their geographic representation of the distribution network (Geographic Information System or GIS). This would be of great assistance to developers as they try to identify sites that are likely to have a reasonable connection cost. Other electricity companies (such as Scottish and Southern) allow such access as a matter of routine. NIE has produced a 'Heat Map' showing areas of the country where developers are likely to face high cost or 'conditioned' offers - in effect a congestion map. While this is a useful step it still leaves developers guessing as to what lines they may be able to connect.

NIE needs to consider how to develop their Heat Map to identify for developers circuits that have capacity for the connection of generation.

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5. Timescales for providing a connection

Where a connection is available, developers are experiencing very long timescales from NIE for providing the connection – usually up to 18 months.

The following table provides examples of energisation timelines for a number of Simple Power projects:

Table 2: Time elapsed between payment of deposit to NIE and date of energisation

Townland	Date NIE Deposit Paid	Date of NIE Energisation	Elapsed Time (mths)
Sixmilecross	Oct-12	Oct-13	12
Fivemiletown	Jan-13	Feb-14	13
Clogher	Oct-12	Feb-14	16
Moira	Jan-13	Mar-14	14
Castlerock	Aug-12	O/S	19
Ballygawley	Oct-12	O/S	17
Dungannon	Apr-13	O/S	12
Drumbo	Feb-13	O/S	13
Donnemana	Apr-12	O/S**	23
** - Legal issues and now earthing issues			

Understandably where wayleaves have to be obtained from third parties this can present delays. However, our experience is that obtaining wayleaves and engaging with developers to explore alternative routes and methods, could be better managed. Even without wayleaves projects can take 12 months to connect.

In our view the 90 days allowed for NIE to provide a quotation in the first place is overly long. For example, a normal customer connection is required to be provided with an offer in 30 days. We do not see the reason for a 90 day period for small generators. Indeed, our experience is that NIE does not come to the site to look at the job until some 70-80 days have elapsed.

It would also help developers greatly if NIE had a system of indicating early on that the project is going to incur a high connection cost or will be conditional. Developers could then avoid the time and expense of pursuing costly planning consents. NIE would also benefit

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from not having to provide fully designed quotations for projects that have no prospect of proceeding.

NIE has produced a 'heat map' showing areas of the country where developers are likely to face high cost or conditional offers - in effect a congestion map. While this is a useful step it still leaves developers guessing as to what lines they may be able to connect.

It would be much more useful if NIE could provide more network information to developers and perhaps what lines / substations still have the capability to connect small scale generation. Such a scheme would save a good deal of nugatory work for both developers and NIE.

These are some particular examples and it would be our view that a commitment by NIE to a thorough analysis and self-imposed challenge to the adequacy of all aspects of the current connection process including resources and overall information flows to applicants would yield significant benefits for both developers and NIE.

It's worth noting that developers would be quite willing to pay for additional resources in the generator connections department; any such costs, when shared across all applicants, are liable to be quite small, compared with the cost of connection.

6. Conclusions / Recommendations

i. 11kv network

NIE should be more proactive and urgent in pursuing 'smart' technology solutions on the 11kv network. This technology is routinely applied on networks in GB.

Competition in connections (contestability) should be introduced as soon as possible. This would enable developers to provide their own (e.g. overhead lines) and give them the ability to better manage their costs and timelines.

ii. 33kv network

Similar to the 11kv network there are 'smart' technology solutions being applied in GB to solve capacity problems in the 33kv network thus minimising the need for capital expenditure.

NIE and the Utility Regulator should, as a matter of priority, agree a suitable level of capital expenditure to address the problem of congestion on the 33kv network. This problem cannot simply be allowed to persist with no prospect of a solution.

iii. Processes and information

With a serious commitment to do so, our view is that NIE could significantly improve the connection process and reduce the timescales namely:

- Quotation timescale should be reduced from 90 days;
- A process for budget estimates would save much nugatory time and effort for both parties;
- Access to the NIE GIS to assist developers in identifying suitable sites;

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- Additional resources (or better use of existing resources);
- Better information flows to developers on the progress of their application;
- More interaction with developers on problems with projects as they arise – giving the possibility of early consideration of alternative options (e.g. a developer may be willing to consider some additional cost if it saves on the connection time);
- End to end job management with a clearly identified contact person for each job;
- NIE should be able to better manage their overall connection process such that dates given to developers for their connections are adhered to – constantly changing connection dates plays havoc with turbine purchasing and construction scheduling.

We have set out examples where developers in general experience difficulty. NIE knows its own process more intimately and should be able to bring forward these other improvements.

We believe it is absolutely essential that NIE develops an Action Plan, with timescales, to clearly demonstrate a commitment to providing solutions to the problem and issues highlighted. An example of a possible action plan is attached to this letter.

Part of the problem that we experience is NIE's very cautious approach to 'new' solutions or committing to provide timelines and wider information. They appear to be very nervous that such commitments (even with suitable caveats) of information could be used to challenge them at a later date.

This caution can perhaps be justified in certain circumstances but it can be a major inhibitor of innovation or pursuing novel solutions in the interest of consumers.

Also, in our view a significant barrier is the form of regulation. At present NIE derives almost the entirety of its profitability from charging for use of the network, i.e. for transporting electricity from power plants to customers. NIE has no commercial incentive for providing connections, i.e. they eventually only recover their costs. We believe that NIE would be encouraged to carry out connections with more urgency and innovation if there was a commercial incentive for them to do so, i.e. connections should be a 'profit centre' as opposed to simply a 'cost centre', as at present.

If for whatever reason this is not possible, then targets should be set for providing connections to the network with meaningful penalties if the targets are not achieved.

We trust this information is of use to your Committee and your advisers looking at this problem.

If you need further information or clarity around any issue, please feel free to contact me.

Yours sincerely,

Philip Rainey
Chief Executive

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ANNEX 1

POTENTIAL NIE ACTION PLAN:

1. **On the 11kV network, NIE to establish a regime whereby generators can connect and then control themselves within technical limits set by NIE.** This approach would massively reduce connection costs.

2. **NIE to agree with NIAUR an appropriate approach to investment in the 33kV network to support the connection of small scale generation.** This would be directed at cost effective, SMART solutions to solve the network problems resulting in developers receiving conditional offers.

3. **NIE to establish a process for providing developers with 'budget estimates', available at the very early stage of potential projects, with a quick turnaround** (2 weeks maximum).

4. **NIE to allow developers to access their geographic representation of the distribution network (Geographic Information System or GIS).** This would be of great assistance to developers as they try to identify sites that are likely to have a reasonable connection cost.

5. **NIE to consider how to develop their Heat Map in order to identify for developers circuits that have capacity for the connection of generation.**

6. **NIE to continue to refine the process of job quotation right through to construction in order to reduce timescales for connection and improve the flows of information to developers.**

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