

Sarah Friedel
Albert Shaw
Utility Regulator
Queens Street
Belfast
BT1 6ED

10th January 2011

Re: Response to Consultation on Electricity Connection Policy to Northern Ireland Distribution System

SWEG Background

SWEG members own and operate small-scale wind turbines rated between 50kw and 250kw with in N. Ireland.

There has been a lot of confusion on the impact of micro and small-scale generators connecting to the local 11kv and 33kv network or grid system. From the experience of other EU countries such as Denmark and Germany it is a well-known fact that fitting generation to the local grid system helps support and balance the local grid network.

From our members experience the problem of fitting a small-scale generator to N.Ireland's rural network was that the grid system was not load-balanced at local level, causing the turbines safety systems to switch off to protect the generator. The fault is called **asymmetric current**, which occurs when there are a number of single-phase load circuits taken off a main three phase grid system. The fault occurs when the normal day load on the network (during working hours) is kept reasonably balanced with industry and when industry starts to shut down in the evening or weekends the single phase loads have more impact on the network, causing imbalance. Normally the NIE engineers can change the single-phase loads around on the local network to minimise the impact. This work can take a period of time, maybe a year to sort out but when the grid is balanced it is our experience that the wind turbine operates normally day and night.

Definition of generation size

Government departments and NIE appear to use different terminology to describe micro generation, small-scale generation and wind farms.

At present NIE do not have a category for small-scale generators 50kw to 250kw. The NIE generator groups are 0 to 50kw (micro-generation) and from 50kw to 10MW.

We would recommend that there needs to be a small-scale category 50kw to 250kw to harmonise the categories with other government departments such as DETI.

In the consultation section 6, it is suggested that micro generation should be subsidised. Normally if micro generation is classed as under 50kw there is no need for an expensive grid connection, as the existing grid connection to home or farm is normally sufficient. It's where a three phase grid connection is required (above 50kw) that the grid costs start to escalate, so it would be fair to conclude that this is where a subsidy should be applied.

Consultation response

3.

Proposed solution

The Utility Regulator proposes that, in order to promote cost reflective charging and to encourage connections at the points of the network that require the least construction of new assets, the 40% subsidy be removed from the start of RP5.

What is limit or cost to “least construction of new assets?”

Views sought

The Utility Regulator welcomes comments about the proposed removal of the 40% subs

In rural areas where more construction assets are required the 40% subsidy could remain

4.

Do you consider charging of the full cost of a connection for a new dwelling you business premises would act as locational signal to future developers and will ensure a balanced decision about the total costs associated with the alternative options available?

Charging full costs will disadvantage rural private dwellings / developments. In urban areas there are normally a number of dwellings associated with a new development which is normally located close to a grid connection. In this case the bulk of the asset cost can be shared across the total amount of dwelling to reduce the cost per dwelling.

This is not the case in rural areas where grid connections are normally further away and all the asset costs have to be consumed by one dwelling.

5.

Views Sought

Do you consider it appropriate that the Utility Regulator, in conjunction with the CCNI, and NIE divert resources to this line of work?

Do you consider that it is appropriate that a limit should be set as to the amount a vulnerable customer should pay for their connection?

What levels of funding do you consider to be appropriate for vulnerable customers?

No comment

6.

Views sought

Do you consider it appropriate for micro-generation connections to be subsidised by the use of system tariffs in NI, given the demand profile and generation portfolio expected over the coming decade and the target of 40% of electricity supplied in NI to come from renewable sources by 2020.

What level of subsidy of the cost of connection do you think should be considered by the Utility Regulator?

SWEG would recommend that all single stand alone generating stations such as wind turbines, Hydro plants and AD up to 1MW excluding wind farms should have 40- 50% subsidy



Important Note: This raises the question of what happens to the existing generators who have paid full NIE costs for their grid connection.

We would suggest that all small scale generators who have got connected to the grid network during the ROC support period (1st April 2005) should be entitled to the same subsidy offered to new comers.

According to our contacts in Denmark, Germany and Holland NIE costs for a typical connection for a 250kw wind turbine to the NIE grid system are on average a 100% more expensive here than those in Europe.

7.

Views sought

Do you consider it appropriate that a ten-year period for rebates for shared connection assets is adopted? Do you consider it appropriate that rebates will apply to all classes of customers connected to the distribution system?

We would agree that the time span for rebates should be extended with the minimum being 10years and where grid connections are more expensive such as remote quarries and factories the time period could be up to 20 years.

All consumers and generators who have paid for a grid connection should be treated equally

8.

Possible solutions

To achieve a faster turnaround in quotes and completion of the work will require a greater resource from NIE and in doing so could push up the cost of the connection quote. Going forward into NIE's next price control RP5 NIE could be incentivised to reduce both quotation times and the length of time it takes to connect a customer. This would only be applicable if NIE could demonstrate that there was added value to all customers. Respondents views on this topic will be taken forward and will help the Utility Regulator make informed decisions going forward into RP5.

Other solutions could be

- Should the offer from NIE include a date for connection (or a time from accepting the offer)? **Yes**
- Should there be an option to pay for an accelerated service? **No**

Views sought

Do you consider it appropriate to incentivise NIE to reduce connection and quotation times? **No**

Do you consider it appropriate that NIE include a contractually binding duration for the connection works in their offers, with the areas outside their control that relate to the timing of that specific connection identified? **Yes**

The experience of our members is that the NIE quotation system has been very poor and expensive. NIE do not appear to have enough staff to deal with large numbers of small-scale generator enquires/applications.

NIE do not require any further incentive to reduce connection quotation times. What they need is additional staff to deal with the applications. To pay more to reduce quotation times would create a two-tier system. The large developers that can afford to pay the increased fee to jump the queue where small developers would have to wait even longer to receive a quote. If NIE were in the private sector they would not be able to charge for quotations. The cost would be factored into the cost of the job.



All aspects of installing a grid connection from quotation to site works fall under the scope of the NIE, so there should be no reason why a company like NIE who can do everything in house and without competition should not be able to provide a reasonable time-scale for a grid connection.

At present, NIE control all aspects of grid connection, from quotation to site works. There would seem to be no good reason why a similar company, with similar facilities, could not do the same. This should reduce cost considerably

9.

Views sought

Do you consider changing the definition currently in place regarding connection assets for the distribution system appropriate? **Yes**

The Utility Regulator welcomes views on the merits of changing from a partially deep to semi-shallow connection, and the appropriateness of charging only demand customers for use of the distribution system.

When a small-scale wind or hydro generator (50kw – 250kw) is connected to the network system it may not always be generating especially if it is part of a business such as a farm or factory. What allowance will be made when this grid connection is used for a dual-purpose import and export? Will NIE allow any discount on grid connections, which include import load?

10.

Views sought

The Utility Regulator would welcome any further views respondents may have on NIE's recommendations to the Utility Regulator

No comment

11.

Views Sought

Do you consider the above O&M costs and method of charging for them to be appropriate?

SWEG members would also agree that O&M costs are too high. NIE have small-scale generators in the same class as wind farms. A wind farm will have multiple wind generators on the same site to pay off the grid connection and O&M costs. The wind farm will also have on average a higher wind speed (8mps or above) and larger wind turbines with an average production of 30% or above.

Compare this to a small-scale wind turbine project (50kw – 250kw) fitted on a farm or small business, the average wind speed is more like 6mps and with a hub height of around 30m, we are finding that 15% production is more the norm.

NIUR needs allow this size generator to connect to the local grid system at a reasonable cost and without over regulation from NIE.



12.

Views sought

Do you consider it appropriate that costs associated with compliance with the Grid Code are reflected in the Statement of Charges for Connection to the Northern Ireland Distribution?

SWEG does not agree that 50kw -250kw generators require the same regulation as wind farms. For example NIE D-code states that all generators above 100kw require to be connected to SCADA at a cost of £20,000 each. Again in all other EU countries this is not a requirement until the generator size is above 500kw or 1MW.

All modern small-scale wind turbines comes with a grid protection system fitted as standard, NIE requires that a further G59 grid protection controller to be fitted to protect the grid from the wind turbine and vice versa.

How many grid protection systems are required for NIE?

We believe the cost of SCADA cannot be justified for small-scale generators. SCADA will incur costs for both generator and NIE with limited benefits. SCADA can only be used for monitoring, controlling and switching off the wind generator. We believe that the money for SCADA would be better spent on reinforcing the grid system, which would increase the amount of renewable energy supplied on to the grid rather than SCADA, which can only be used to limit the amount of renewable energy on to the grid. Financial institutions and small developers may take a dim view of a third party such as NIE having remote control of the amount of energy they can export from their generating station.

DETI have approved the use of second hand/refurbished small-scale wind turbines. Most of all the second hand wind turbines that we are aware of and new ones are not SCADA compatible for the reason mentioned above, (it is not a requirement in the rest of Europe). If NIE insists on this requirement, then N.Ireland could find itself in a position where there is no wind turbines manufactured in the world within this kilowatt range that complies with NIE grid code.

13.

Views Welcome

The Utility Regulator would welcome views on the Statement of Charges in general. In particular respondents may wish to comment on payments and timings. Where possible, given the constraints on confidentiality, respondents should provide details on how they believe the charging statement has failed to address individual connection problems.

NIAUR welcomes representations and objections from all interested parties on the Statement Of Charges for Connection To The Northern Ireland Distribution System. Non-solicited views pertaining to any other part of this consultation paper or any associated matter are also welcome.

SWEG would recommend introducing more competition into this sector and less NIE regulation for small-scale stand alone generation.



Conclusion

Harmonisation of generator sizes across all government departments, NIE and generators.
Our suggestion:

- Micro generation up to 50kw (no D code compliance)
- Small scale generation 50kw – 250kw (minimum D code compliance without SCADA)
- Medium size generation 250kw – 1MW (medium D code compliance with SCADA above 500kw)
- Large scale generation over 1MW (full grid and D code compliance including SCADA)

The time has come in N.Ireland where government agencies, generators and NIE need to put their heads together to formulate a plan for the grid system that can cater for small scale generation at a reasonable cost to the developer. The costs and criteria should be broadly in line with our EU neighbours who have mastered this system over 30years ago.

Provision should be made for quality refurbished and new small-scale generators to be allowed to connect to the grid system with reasonable regulation or the similar regulation as our EU counterparts.

We are aware of limits on the N.Ireland electricity network but according to our Danish wind turbine engineers small-scale generators up to 250kw will have little impact on the network system and will only help to support the weak grid while all the energy produced will be consumed locally,

Where high concentrations of generators are installed grid reinforcement may be required but if the 40% renewable energy target is to be achieved by 2020 then there will be areas where grid reinforcement will be required anyway, better sooner than later.

We believe that with the support of NIE engineers that a large number of small-scale generation could be fitted to the local 11kv and 33kv 3phase systems without any great expense or reinforcement of the network if load balancing can be achieved.

NIE should be able to do better than take nine months to a year to organise a few system assets and three days work especially where no other right of ways required other than the applicants. NIE grid connection costs need to be reduced in line with other EU countries or competition introduced.

We would like to complement the staff of NIE Energy on their help and support with grid connection issues and OFGEM certification for small scale generators

All the issues with small scale grid connections are not addressed in this response to the consultation. SWEG members are prepared to meet with the Utility Regulator to discuss our experiences and suggest improvements to the current system.

SWEG.NI
.....