UFU Commodity Watch – Small Scale Generation SCADA
Chris Osborne
Senior Policy Officer

Since 2010, NIE Networks have required generators with an output of 200kW or more to install SCADA. For most Small Scale Renewable Generation (SSG) the customer is responsible for supplying and installing equipment to fulfil this SCADA requirement. The vast majority of SSG sites have not yet completed their SCADA installation and NIE Networks will soon begin an enforcement process to ensure all customers fulfil their SCADA obligation. This will mainly affect customers with wind turbines and AD plants above 200kW.

What is SCADA?

SCADA (Supervisory Control and Data Acquisition) is a system which acquires data from a wind turbine, which relays information back to NIE Networks on the operation and output of the turbine and allows them to issue commands to the unit when necessary. The requirement for SSG SCADA was introduced in the Distribution Code (D-Code) in 2010

Distribution Code

NIE Networks Ltd, under license is required to distribute electricity, for the purpose of supplying all premises. Under the terms of the license NIE Networks are required to produce and enforce the Distribution Code. This document sets out technical requirements and responsibilities for both NIE Networks and Users (customers) including the operation of generators. NIE Networks are obligated to ensure that all Users fully comply with all relevant aspects of the Distribution Code.

Enforcement

For SSG customers their requirement to comply with the Distribution Code is stated explicitly in the terms and conditions of the connection offer and connection agreement. For example, in a typical LV connection agreement clause 1 requires, "the Generator shall ensure compliance at all times with the Distribution Code". If non-compliance to the Distribution Code is identified and not corrected then NIE Networks would trigger clause 8 of the connection agreement which states, "This agreement shall terminate forthwith also on breach by The Generator of clause 1, in which event the Company shall be entitled to de-energise the Facility."

D-Code compliance requires that at all power stations greater than 200kW will be required to fit SCADA as part of the terms of their connection offer.

Phased Approach by NIE Networks

NIE Networks have recognised that neither they nor the industry have the resources to complete the SCADA installation at every power station at once. Hence, they intend to take a phased approach to the SCADA implementation process. However, they have stressed that all generators will be required to fulfil their SCADA obligation in due course.

What will happen if no action is taken?

NIE Networks have discussed this matter with the Utility Regulator and will soon be writing to generators, informing them that failure to install SCADA is considered as non-compliance with the D-Code. Generators will be given 1 year to rectify this and failure to engage with NIE Networks, will leave them with no option but to trigger clause 8. The letter will invite

affected customers to a workshop to discuss the SCADA requirements and the consequences of non-compliance.

Remote Terminal Unit

The problem lies in the fact that complications will arise if the wind turbine is not fitted with a RTU (Remote Terminal Unit) and generators need to check the technical specification of their turbine. NIE Networks are urging generators to engage with them once they receive the notification letter.

What next?

NIE Networks are currently finalising the first batch of notification letters.

Small Scale Renewables – What is the future in Northern Ireland?

Chris Osborne
Senior Policy Officer

AES UK & Ireland officially opened its 10MW Advancion energy storage facility at Kilroot Power Station on 17 February. In attendance at the launch, where senior staff from AES, industry and energy representatives from Northern Ireland, OFMDFM Junior Ministers Emma Pengelly MLA and Jennifer McCann MLA, as well as myself and the Rural Enterprise Chairman.

This storage array as it is known is an innovative way to strengthen the electric grid while reducing costs and system-wide emissions whilst utilising the existing infrastructure at Kilroot. It is a two year pilot project, the first of its kind in the United Kingdom. It represents the first step towards a planned 100MW energy storage array, with this added capacity due to be available in 2017, making it the largest energy storage facility in the EU. Funding is being provided by Innovate UK Energy Catalyst, in partnership with Queen's University Belfast.

One of the main implications of this project is that will integrate with local wind energy. This will allow the more efficient management of this intermittent resource and provide support to the grid. Whilst the pilot has a capacity of 10MW, the flexible resource is actually 20MW, on account of the core and node structure. What this means is that it instantaneously balances demand and supply of electricity and support the all island transmission grid via SONI and the storage array regulates frequency to maintain grid stability and improves efficiency of external grid assets.

It so happens that the UFU Rural Enterprise Committee have been looking at energy storage for 3 years and the developments at Kilroot could have ramifications for our own small scale on-farm renewable energy sector. The array is built within an existing building at Kilroot, which allows the rapid and scalable employment of energy, this is because it was built on a block-by-block basis (the array utilises 53,000 batteries, arranged in 136 separate nodes). By this logic, this model could be deployed, on a significantly lesser scale, on local farm businesses that already have a wind turbine installed. This would allow them to use the generated electricity when they need it most on the farm. Key challenges will need to be addressed, namely cost. However, it represents a raft of possibilities for the small-scale renewables sector.

John Maynard Keynes in his "General Theory of Employment, Interest and Money" written during the depths of the 1930s Depression, pointed to a link between investment spending and economic growth. Currently the Chancellor of the Exchequer has committed to major infrastructure projects in GB, but Economists have argued that more immediate benefits would also be delivered by small infrastructure projects such as the energy storage facility at Kilroot. You only have to consider the number of local companies involved in the construction of the array; the Balance of Plant contract was provided by a Belfast-based company using a variety of subcontractors from across Northern Ireland; technical drawings, project management switchboard manufacturing overall civil construction were all provided by local businesses as well.

What this project illustrates is that renewables is playing an important role in the Northern Ireland economy by energising infrastructure investment. This makes the DETI decisions such as the premature closure of the NIRO for onshore wind and the abrupt ending of the RHI even more difficult to comprehend, but with innovations in energy storage the UFU will be striving to establish a sustainable future for small-scale renewable generation in Northern Ireland.

Commodity Watch - Small Scale Onshore Wind Update April 2016

Chris Osborne, Senior Policy Officer

Last week the UFU attended a Research and Innovation workshop for the new round of INTERREG funding at the Playhouse Theatre in Londonderry. Subject to a funding application being successful, this could be the first step in progressing the development of alternative ways of integrating small scale renewables to farming businesses in Northern Ireland.

Two days later DETI launched a consultation on proposals for closure of the Northern Ireland Renewables Obligation (NIRO) to new small scale (<250kW) onshore wind projects. This is against a backdrop of a UFU/Simple Power against DETIs original 2 week consultation which closed on 14 October 2015. This is a 6 week consultation and closes on 9 May 2016. This follows the recent DETI decision to close the NIRO to large scale onshore wind projects from 1 April 2016.

DETI have presented three options for the closure of the NIRO for small scale onshore wind.

Option 1 – Close on 30 June 2016

The NIRO will close to new projects on 30 June 2016. Projects will receive the (UK) NIRO if they meet the 30 September 2015 "approved development criteria" and are commissioned and accredited by 31 March 2017. Option 1 provides a Grace Period for approved eligible projects who are affected by grid or radar delays and will apply until 31 March 2018. In addition there will be an Investment Freeze Grace period until 31 March 2019. Please note that this something that the UFU called for. Under this option, DETI do not expect DECC in London to activate "backstop powers", meaning there will be no restrictive NI-specific ROCs.

Option 2 – Close on 30 September 2016

The NIRO will close to new projects on 30 September 2016. Projects will receive the (UK) NIRO if they meet the 30 September 2015 "approved development criteria" and are commissioned and accredited by 31 March 2017. Option 2 provides a grid/radar delay Grace Period for eligible projects until 31 March. Investment Freeze Grace Period until 31 March 2019. In the consultation, DETI have stated their concern that by keeping the NIRO open for an extra 3 months as stipulated in Option2, DECC may activate backstop powers and create new NI ROCs post 1 April 2016 in this instance which would restrict GB suppliers from redeeming NIROCs and affecting their tradability.

Option 3 - Close on 31 March 2017

The NIRO will close on 31 March 2017, with an additional one year grace period for grid connections where there are grid/radar issues. However, if Option 3 is implemented, DECC will activate backstop powers. Projects which do not meet 30 September 2015 "approved development criteria" will have their ROCs classed as new "NI ROCs", which has the potential to have an adverse impact for all ROCs. The implications too risky for existing renewable projects.

DETI are recommending Option 1 and in light of the threat of any activation of backstop powers by DECC in London we would agree.

Future Support for Small Scale Renewables

When we met with DETI officials on 7 March, it was confirmed that there will be a further consultation later in the year, this time looking at future support for small scale renewables. Whilst it is clear that it will not be subsidised support as seen previously, it will be an opportunity for the UFU to formally present our line of thinking as to how we believe the future small scale renewables sector will look and should be supported in Northern Ireland.

Commodity Watch
Keep a Close Eye on NIROC Closing Dates
Chris Osborne, Senior Policy Officer

For small scale generation schemes, the Northern Ireland Renewable Obligation (NIRO), the renewables incentive payment scheme, has various closure dates ranging from June 2016 to March 2017 depending on the type of technology. Although some 'grace periods' apply which could extend the time available to accredit for NIRO, these grace periods are not automatic and are dependent on various strict legislative criteria being met by both NIE Networks and would-be developers.

There is now considerable pressure on developers to get their renewable generators built and connected before the relevant deadline (unless they are eligible for a further grid or radar delay grace period). OFGEM guidance indicates that where a grid or radar delay grace period is being sought, any such delay must be confirmed as **outside** of the developer's control.

NIE Networks is currently dealing with a very high volume of projects proceeding through the pre-construction and construction stages. NIE Networks have connected over 800 Small Scale Generation projects since the NIRO was introduced and they are forecasting that a further 400 projects are to connect to the grid.

The UFU understand from NIE Networks that there are a significant number of projects which have yet to make final payments and that NIE Networks has been following up to encourage prompt payment. The work on the grid connection will not proceed unless the final balance has been paid. It should be noted that in our Commodity Watch dated 6 August 2016, we flagged up this concern as well.

With the deadline for the NIRO accreditation looming, the UFU urges those developers to complete their payments if they are still intending to complete the project, as soon as possible so that work can begin on their grid connection. This ensures they have the best opportunity of connection before the deadline expires and meet OFGEM's eligibility criteria. Where payment has been requested, delays in making payment may be seen as a delay within the developer's control and may invalidate the accreditation process beyond the relevant closure date. Developers may wish to contact OFGEM directly for more information on how the grace periods apply.

Information can also be found at www.ofgem.gov.uk and links below for further info;

OFGEM's FAQ's regarding NIRO and grace periods (Onshore Wind <5MW): https://www.ofgem.gov.uk/system/files/docs/2016/10/frequently_asked_questions_-_closure_of_the_northern_ireland_renewables_obligation_niro_to_onshore_wind_5mw.pdf

OFGEM Guidance document on NIRO closure and grace periods (Onshore Wind <5MW): https://www.ofgem.gov.uk/system/files/docs/2016/10/northern_ireland_renewables_obligation_-_closure_of_the_scheme_to_onshore_wind_5mw_0.pdf

OFGEM Factsheet for Non-Wind Renewable Technologies: https://www.ofgem.gov.uk/publications-and-updates/factsheet-closure-northern-ireland-renewables-obligation-niro-all-non-wind-renewable-technologies

Future support for small scale renewables - As far as future support is concerned for small scale renewables, as it currently stands, there are no plans in place for the NIRO to be replaced by any replacement support scheme. This is despite the Department for Enterprise

Trade and Investment (DETI) which is now Department for the Economy or DfE, up until recently planning to replace the NIRO with a Small Scale Feed-In Tariff (known as a FIT).

I provided evidence to the Northern Ireland Assembly Economy Committee at Stormont on 19 October setting out the case and need for continued future support for small scale renewables once the NIRO is abolished on 31 March 2017 for small scale generation. Only 7 months ago, in March this year, DETI said that a consultation would be published this year however, this has yet to materialise. This consultation needs to be separate from the pending review of the Strategic Energy Framework. In addition, the UFU are wanting to what happened to the discussed Energy Bill for Northern Ireland. It is imperative that this is introduced specific to the energy needs of Northern Ireland.

Commodity Watch – Keep an eye on key dates
Chris Osborne, Senior Policy Officer

On 30 June 2016 the Northern Ireland Renewables Obligation for small scale onshore wind closed to new developers following a well documented consultative process. (It should be noted that this article focuses on onshore wind). Any small-scale onshore wind projects seeking to accredit after 30 June 2016 are required to meet the approved development grace period eligibility requirements set out later in this article.

The Ulster Farmers Union have been involved in discussions with NIE Networks and it transpires that there are a number of potential small scale renewable wind generators who, despite having paid their 20% deposits (whose projects are subject to no grid delays) have yet to pay their final balances.

There are instances where applicants are experiencing wayleave, lease delays and/or planning approval hold-ups but these do not constitute to grid delays which would satisfy Grace Periods set out below. The UFU are calling upon affected members to do what they can to ease these delays by keeping in contact with their legal representatives and stressing the urgency for a swift resolution. However, what is clear is that there are a number of applicants who despite having passed these stages of the grid application process have still failed to pay their final balances.

The UFU have been asked by NIE Networks to remind our members that the longer you delay paying the final balance, the less likely it may be that you will be connected in time to attain NIRO accreditation. If you have already met the "approved development" (details below) conditions before 30 September 2015 and are still to pay your final balance with NIE Networks and there are no grid/radar nor investment delays, you need to be operational and accredited before 31 March 2017 if you are going to be able to avail of the NIRO.

Developers wishing to Accredit to the NIRO after 30 June 2016

Small scale onshore wind projects which seek to accredit under the NIRO after 30 June 2016, first and foremost need to be able to demonstrate to OFGEM that they meet the "approved development" grace period eligibility criteria in place before 30 September 2015;

i. 'Approved development' condition;

- Grid connection agreement from NIE Network
- Ability to prove ownership/control over land rights
- Evidence of Planning Permission

In addition;

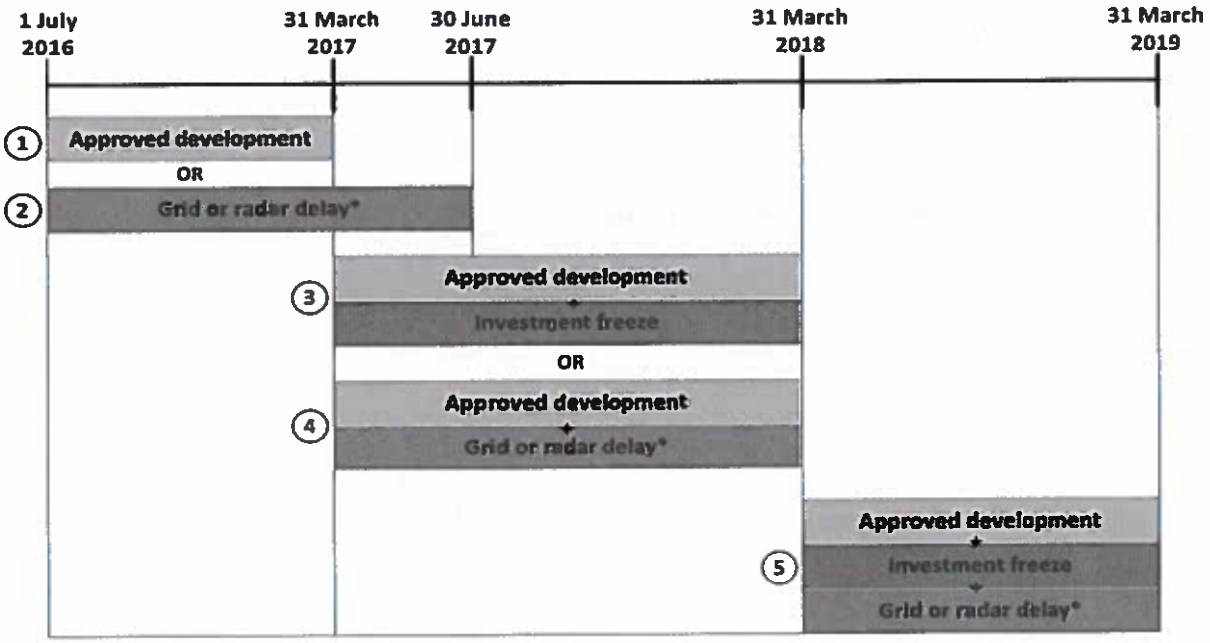
ii. 'Grid or Radar Delay' condition: for generating stations that have been subject to grid connection or radar works delays that were **not because of a breach by a developer**.

iii. 'Investment Freezing' condition: for generating stations where required finance could not be obtained as a result of legislative uncertainty before the NIRO Closure Order 2016 was implemented.

The grace periods are subject to strict conditions and will be only applicable where the delay was beyond the developers control.

The Five Grace Periods are best illustrated in Figure One below;

Figure One – Grace Periods



Source OFGEM

GP1 - Grace period available from 1 July 2016 to 31 March 2017 - Approved development

GP2 - Grace period available from 1 July 2016 to 30 June 2017 - Grid and/or radar delay

GP3 - Grace period available from 1 April 2017 to 31 March 2018 – 'Approved development' **AND** 'investment freezing'

GP4 - Grace period available from 1 April 2017 to 31 March 2018 – Grace Period for generating stations that meet 'Approved development' **AND** 'grid and/or radar delay'

GP 5 - Grace period available from 1 April 2018 to 31 March 2019 - 'Approved development' **AND** 'investment freezing' **AND** 'grid and/or radar delay'

Grace Period Assessment

Applicants should not submit their grace period evidence to OFGEM before they submit their full application for accreditation. OFGEM will not assess eligibility for a grace period until an application for full accreditation has been received.

OFGEM have confirmed that they will issue guidance explaining how to apply for accreditation and grace periods shortly.

Conclusion

If you are not facing any delays highlighted above and you have paid your 20% deposit and you are wishing to proceed you should be conscious of the 31 March 2017 deadline if you are wishing to accredit for the NIRO.

COMMODITY WATCH

Chris Osborne, Senior Policy Officer

Managed Grid Connections for Small Scale Renewables

With 300 applications for Small-Scale Renewable Generators (SRG) having either having been withdrawn or not yet progressed; work is underway to get as many of these as possible completed. This state of limbo followed the decision to withdraw Conditional Offers Grid Connections offers in August 2014.

Project 40

Project 40 (UFU sit as industry representatives) has been tasked with identifying an alternative way of getting as many of these projects connected to the grid as possible. Commodity Watch this week will consider why this has occurred and highlight the alternatives being considered by the UFU within the workings of Project 40.

Nature of the Northern Ireland Distribution Network

The NI Distribution Network (11kV and 33kV) was designed as a 'passive' network with one directional power flow from the Transmission system to the Distribution system in the supply of electricity. Within this network is the rural 11KV distribution network, with 20,000km of overhead lines serving UFU members and rural-dwellers. 70% of these rural lines are categorised as "light construction" 25mm² lines and this is where the significant upgrade costs are incurred in grid connection.

Growth in Small Scale Renewables and impact on the Distribution Network

NIE have confirmed that to date, 220MW of SRG (single wind turbines, AD units, hydro and domestic solar PV micro-generation projects) are now either connected or committed to connect to the NIE distribution network. As more SRGs have connected or committed to joining the network, the power flows have changed to being bi-directional, embedded and by its very nature intermittent.

This creates two problems on the network;

Reverse Power Flow (RPF)

When operational, the physical output of embedded SRG supplies the local load customers first, with any excess flowing back to the 33kV distribution network and then potentially to the Transmission network, and this is when the problem occurs. In other words, when total generation to a primary substation exceed the load available, RPF moves back up through the primary substation to the upstream 33kV network.

Voltage Control

"Light loading" is a problem in Northern Ireland, with very few rural connections grouped together in the country and instead more isolated than in GB. In GB, the network circuits are shorter and thicker, serving congregated rural Hamlet-type communities. What this means in rural NI is that more generation will flow backwards to the primary substation, then as a consequence of the light construction, the lines require costly reinforcement, to avoid excessive voltage rise due to the exported generation. This is what is known as Voltage Control.

What will be Managed?

By acceptable a managed grid connection, the developer will be required to accept some level of constraint (reduced grid-connected export) on their installation to avoid the above problems. The level of constraint will be explained in the Consultation.

Going Forward

A managed connection solution such as this will be ground-breaking in the sense that it will be the first of its kind in the UK and NIE will be a leader in developing this new type of technology. The development of a Pilot project is key and will work in tandem with the imminent consultation process. What is clear is that the solution will NOT get all SRG projects connected. There is no one-size-fits-all solution and this means that the solution will not readily implemented, however significant progress is being made on connecting SRGs to the grid.

Commodity Watch – UFU call for more realistic Grace Periods as we approach the end of NIROs

Chris Osborne - Senior Policy Officer

The UFU responded to a Department of Enterprise Trade and Investment (DETI) Consultation on Grace Periods which will apply when Northern Ireland Renewable Obligations (NIROs) end on 31 March 2017. In our response we repeated our calls for continued support for Small Scale Renewables as well as proposing that the proposed Grace Periods to be extended to take into consideration the still unresolved structural problems with the local electricity grid.

As far back as early 2012, the UFU set out its reservations at the ending NIRO support for small scale renewables, stating that the sector was still in its infancy and many structural barriers to their uptake would mean that this change could halt the progress in establishing a sustainable small scale renewables industry in Northern Ireland. We stressed the need for a continued support for small scale renewables and any grace period should ensure a seamless transition from NIRO to its replacement, whatever that may be.

As it has panned out over the last 3 years, the grid connection application process has been riddled with problems and today in mid-2015 we have a situation where there are at least 400 grid connections applications (those which were once subject to "conditional offers") in a state of limbo. This backlog only stands a chance of being cleared if progress is made in relation to the NIE-led Project 40 (managed non-firm grid connection). Project 40 may not see the light of day until late 2016/early 2017 at the earliest.

DETI proposal - "12 month grace period to address radar and grid connection delays, where the project was scheduled to commission on or prior to 31 March 2017".

UFU Response - Grid connection delivery timescales for small scale renewables are getting longer with some being quoted as long as 2 years to get connected. In light of this the UFU opinion is that 12 months grace period is too short. DETI should consider an18 month grace period at the very minimum, in light of the evidence that we have detailed above. In addition, the UFU would wish to see Grace Period applied to G83 applications.

DETI proposal - Radar and Grid Connection delays which impact upon a connection application and set out the Grace Period eligibility criteria; "Letter from the Network operator (NIE) confirming that the grid connection was made after the grid connection date and that in their opinion, failure to make the grid connection on or before 31 March 2017, was not due any breach of the agreement by the generator/developer" and "Developer must provide evidence of a grid connection offer and acceptance of that offer, both dated no longer than 31st March 2017".

UFU Response – NIE does not provide the connection date in the initial connection offer. In fact when the final offer is completed and sent to the generator, they are only given 28 days to pay the final balance and only then do they know the connection date. Instead, the eligibility criteria should be that the project has an accepted connection offer by 31 March 2017, with a stipulation that the project should be operational by the end of the agreed grace period.

In GB, a Grace Period of 18-months is offered for dedicated biomass with CHP projects. The UFU would make the case that by the same logic this should applied to all renewable projects in Northern Ireland. Grid connection problems (the 400 outstanding grid applications) and the volume of applications which will materialise in the run up to 31 March 2017 will put a strain on an already under pressure NIE. An extension to the Grace Period will go some way to relieving this pressure and ensure as many small scale renewable generators get connected to the grid as possible.