

Northern Ireland Electricity Limited

**CONNECTION ARRANGEMENTS FOR
OFFSHORE RENEWABLE GENERATION**

NIE's RESPONSE

30 May 2013



The areas of this consultation that NIE would wish to comment on are:

- Options for connection configuration and ownership/license arrangements (Sections 5 & 6)
- System security, LCTA connection design (section 7)
- Changes to the connection Application Process (section 8)
- Impact and changes to Grid Code (section 9)

1 Options for connection configuration and ownership/license arrangements (Sections 5 & 6)

The consultation considers options for physical connection arrangements (considered in section 5) separately from ownership and licensing issues (considered in section 6). However, NIE considers that these two aspects are closely interlinked to the extent that arrangements for connection require to be considered in a holistic fashion. Indeed, it would be NIE's view that the separate approach adopted in the consultation only results in a level of confusion when trying to map the ownership/licensing options detailed in section 6 to the physical variations detailed in section 5.

Considering in turn each of the three physical connection variations detailed in section 5 and looking at arrangements holistically, NIE would respond as follows:

1.1 Variation 1 Transmission Radial Build – combined TO/Developer build

NIE considers that this option reflects most closely the present approach to connection of generation to the electricity network in NI and is likely to be the option most consistent with current construction, ownership, operational and licensing arrangements. In terms of construction, ownership and operation, the extension of the transmission system to the shoreline mirrors, to a large extent, present connection arrangements whereby NIE construct/own and SONI operate that infrastructure as far as the boundary of the generating site. The generator is then responsible for construction, ownership and operation of the infrastructure contained within the generation site as would be the case in Variation 1.

Separating the construction between an onshore project (for which NIE would be responsible) and an offshore project (for which the offshore developer would be responsible) is also optimal in terms of "who does what". NIE has extensive onshore construction experience and are able to coordinate the construction of the infrastructure required at the point of connection to the existing network with any deeper onshore works that may be required. Furthermore, making the offshore developer responsible for the offshore cabling to the shoreline substation will allow the offshore developer to establish one overall project for all of the offshore works.

Variation 1 is also the most straightforward arrangement from an onshore licensing point of view. NIE and SONI are current licensees in NI and can therefore construct own and operate all of the required onshore connection infrastructure under those licenses. In addition, under those licenses there will be access to this onshore

infrastructure for future generation/demand, in particular with regard to potential future connections to the shoreline substation.

In terms of the infrastructure between the offshore wind farm and the shoreline substation the following possibilities exist (note that NIE has not taken any legal advice on these possibilities):

- (i) Whilst the actual infrastructure for which the generator would be responsible would (by necessity) be required to traverse onshore from the actual NI shoreline to the shoreline substation, the de minimis nature of this portion of onshore infrastructure may result in such infrastructure being deemed legitimate under the generators generation licence.
- (ii) If it is deemed that this portion of onshore infrastructure is not legitimate under the developer's generation licence then it may be possible for a deemed ownership/licensing interface point to be defined at the actual NI shoreline, with NIE/SONI also exercising licence obligations from the connection point as far as the interface point. At a practical level it is considered that this arrangement could be managed via an agreement made between NIE, SONI and the generator.
- (iii) The arrangements considered in 1.1(i) and 1.1(ii) (above) are proposed on the basis that the infrastructure between the wind farm and either the shoreline substation (1.1(i)) or the actual shoreline (1.1(ii)) may be legitimately constructed, owned and operated by the offshore developer under its generation licence. These arrangements are based however on the presumption that such a licence will not only extend geographically to the offshore wind farm "footprint" but will also include the corridor between the wind farm and the shoreline.
If the generation licence does not include the said corridor then consideration would have to be given to a third party taking on the ownership and operation of the infrastructure between the wind farm and the shoreline substation.

1.2 Variation 2 Transmission radial connection – TO Build

NIE does not consider that Variation 2 is appropriate for a number of reasons:

- Neither NIE nor SONI have any licence obligations or powers that extend beyond the boundary of NI and there would therefore not only need to be a change in the terms of their respective licences but also a change in legislation.
- This variation would, in effect, result in two offshore electrical construction projects, one the responsibility of NIE, the other the responsibility of the offshore developer. NIE would not consider this to be optimal in terms of efficiency.
- This variation would result in two parties having offshore O&M responsibilities after connection. Again, NIE consider that this would create resultant inefficiencies.
- This variation could also be problematic from a security standard perspective. NIE consider this point in more detail in section 2 of this response.

1.3 Variation 3 Transmission Radial Connection – Developer Build

NIE does not consider that Variation 3 is appropriate for a number of reasons:

- NIE do not consider it appropriate, nor potentially legitimate, for a generator to construct, own and operate, under its generator licence, the significant amount of onshore transmission infrastructure that would be required to connect to the transmission network, neither in terms of the fundamental scope of a generation licence nor in terms of compliance with IME3. This appears to have been the interpretation applied in GB where generators have been precluded from owning the onshore transmission infrastructure under their generation licence.
- Even if this arrangement were to be considered legitimate under existing legislation, NIE consider that such an arrangement would result in there being no scope for a third party to secure access to that infrastructure in the future. NIE do not consider such a constraint to be appropriate.
- Whilst the consultation refers very briefly to the potential for the onshore infrastructure to be sold by the developer this is not considered in any great detail. The absence of such detail would therefore preclude NIE at this stage from supporting (or otherwise) the adoption of the arrangements detailed at Variation 3.

In summary, NIE considers that the optimal construction arrangements are as set out in Variation 1 of section 5 of the consultation, with NIE being responsible and licensed for the construction and ownership of the onshore connection assets as far as a new shoreline substation and SONI being responsible and licensed for the operation of same. The generator would then in turn be responsible, under their generation licence, for the offshore infrastructure that would connect their wind farm to the shoreline substation.

2 System Security

As mentioned by UR in the consultation, NIE also consider that the present security and planning standard PLM-SP-1 may not properly define the security requirements for the connection of large scale renewable generation to the transmission network. NIE, in conjunction with SONI, are currently carrying out a review of this standard, which will in due course be subject to public consultation¹. In view of this ongoing process NIE would not wish at this stage to comment on the possible conclusions that may arise as a result of this review.

Dealing however with some of the other issues raised by the consultation:

The consultation questions whether, if the developer builds the connection, it should be subject to a defined security standard. The question would, in practice, only arise if UR decided that the connection arrangement should be on the basis of Variation 3, which NIE has already considered not to be an appropriate arrangement. Furthermore, even if UR were to proceed on the basis of Variation 3 it is not clear to NIE how such a requirement would be enforced. Whilst NIE, as a transmission licensee, is required to comply with a set of regulated network related licence standards it is not clear how this would play out in the context of the offshore developer not being subject to any transmission licence.

¹ The Utility Regulator has requested NIE to carry out a review of all of its Licence Standards. The review of PLM-SP-1 will be carried out in conjunction with that broader review which is planned to complete (including a public consultation) by December 2013.

It should also be noted that Variation 2 also raises questions relating to an appropriate security standard that have not been considered within the consultation paper. Under Variation 2 (in which NIE would be required to extend the transmission network to the offshore wind generator) the same security standard would need to apply to the onshore section of the connection asset as would need to be applied to the offshore section of the connection asset. This may not be appropriate in that subsea infrastructure would be much more costly than onshore infrastructure. This is important in that, taking account of the intermittent nature of offshore generation, cost benefit analysis may be an important consideration that could result in the creation of different security requirements for on land as opposed to subsea. NIE do not consider this potential differentiation as being realisable under Variation 2.

In summary, NIE considers that, as with the physical connection arrangements mentioned above, Variation 1 poses the least problems in terms of the application of a security standard. Under this variation the network that was extended to the shoreline would be licence standard compliant without any change to the present arrangements (leaving aside the ongoing review of the present standard itself).

Finally, the consultation also indicates that, if N-1 security is required then, the associated infrastructure to facilitate such security would not be chargeable to the developer. The basis of this statement is not clear to NIE when considered alongside SONI's charging statement. In addition, it is worthwhile correcting the paragraph in section 5.2, which states; *"If the wind farm is split into two wind farms, each with 300 MW capacity, then this would fall into point 2.1.2 of the Security Standards referenced. This suggests that a single circuit would be acceptable to connect a set lower than the largest set (550 MW), as long as it doesn't exceed the 20km maximum length, (see clause 3.4.2 of PLM-SP-1)."* It is assumed that the figure of 550MW quoted in this paragraph derives from NIE's addendum sheet to PLM-SP-1. This figure does not however equate to the largest set/infeed on the Island of Ireland.

At present, the largest generation unit on the all-island power system is the 445MW Whitegate Combined-Cycle Gas Turbine (CCGT) unit in Cork. However, the Largest Single Infeed to the all-island power system is the Moyle Interconnector, when importing 450MW. Once the East-West Interconnector is commissioned, the Largest Single Infeed will rise to 500MW.

3 Changes to the connection Queue

In this section UR pose the question as to whether offshore developers should be able to apply for connection in advance of having obtained planning permission.

Whilst NIE understands the issues set out in the consultation around how best to deal with offshore connection applicants, one needs to consider how to resolve them at a more fundamental and strategic level. Indeed, it is NIE's view that the rules for entrance to the connection application process need to be considered afresh for both onshore and offshore applications to ensure that an overall approach is arrived at that is both transparent and properly defined within licensed and/or regulatory documentation.

4 Need for changes to the Grid Code

In section 9 of the consultation paper, which relates to the need for changes to the Grid Code, UR states that *“consideration should be given to UR’s minded to position on ownership and licensing discussed in section 7 where it is proposed that the developer would build the offshore connection assets and either retain the assets or transfer the assets to the TO (NIE) on completion, with the SO (SONI) operating the transmission connection assets”*.

NIE is confused over the assertion by UR of there being a “minded to” position defined in the consultation paper. A review of section 7, or indeed the complete consultation, would not indicate any references to support this assertion.

In terms of Grid Code, NIE would not be a primary stakeholder in respect of the scope of changes that may be required to cater for off shore wind generation. We would however comment that the proposed connection arrangement recommended by NIE in section 2 of this response should have the least consequences compared to other options.