Renewable Energy Systems Limited
Willowbank Business Park, Millbrook, Larne,
County Antrim, Northern Ireland, BT40 2SF, United Kingdom
T +44 (0)28 2844 0580 F +44 (0)1923 299 299
E info@res-group.com, www.res-group.com

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ciaran.maccann@uregni.gov.uk

Dear Ciaran,

Written response by RES to: Review of Electricity Distribution and Transmission Connections Policy – Call for Evidence

RES is one of the world's leading independent renewable energy companies working across the globe to develop, construct and operate projects that contribute to our goal of a secure, low carbon and affordable energy future. RES has been an established presence at the forefront of the renewable energy industry for over three decades. Our core activities are the development, design, construction, financing and operation of wind and solar PV projects and we are also active in electricity storage, DSM and transmission. Globally, we have built approximately 10GW of renewable energy generation, including almost 10% of the UK's current wind energy capacity. Since developing our first onshore wind farm in Northern Ireland in the early 1990s, RES has subsequently developed and / or constructed 16 onshore wind farms totalling 229MW. This equates to over 37% of Northern Ireland's onshore wind capacity. RES currently operates over 83MW of wind capacity across Northern Ireland, has secured planning permission for a further 112MW awaiting construction and has 56MW in the planning system. In addition RES has a very strong onshore wind pipeline of 177MW in Northern Ireland.

We consider ourselves well-placed, therefore, to comment on the important issues addressed in this consultation and are grateful for the opportunity to respond. We hope you find our comments below of interest and we will be more than happy to assist with any further information as required.

We strongly agree that there is a need to fundamentally review the connection policy to facilitate efficient and cost effective connections. The current connection policy cannot effectively deal with the influx of 1500MW worth of connection applications, which is against a background of severe network capacity shortfalls and uncertainty over future national energy policy. The referred influx of applications is further compounded by the fact that there is already circa 700MW of contracted but not yet connected generation ahead in the grid capacity queue, which does not have corresponding network capacity nor any approved network reinforcement plans.

The key points we would like to make are:

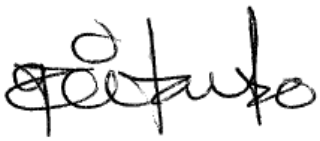
1. A signification portion of the 1500MW worth of generator applications to be processed immediately by the connection policy is likely to be speculative. Processing all these applications sequentially is impractical and applying a batch process would not be much better as it would lead to several iterations of incorrect and costly network designs leading to connection offers that cannot be accepted, even by non-speculative applicants. RES suggests that the new connection policy introduces a mechanism that either encourages speculative applications to leave the connection process or prioritises applications that have met certain milestones.

The planning consent criterion that was applicable to the connection process prior to August 2015 minimised the number of speculative projects entering the connection process, reduced nugatory workload and prevented capacity hoarding. Its main downsides were the lengthening of the overall development timelines for projects and lack of grid certainty up to planning consent.
We still believe that planning consent criteria should be the interim policy until proper legislation is put in place. However, in the longer term a new policy could be developed, similar to the ENA Guide to Fair and Effective Management of DNO Connection Queues: Progression Milestones Best Practice Guide. This would allow connectees to submit grid connection applications at any time but to only be allocated capacity when certain milestones were reached, for example submitting planning applications or receiving planning permission. Based on recent experience in GB, RES is now minded to support the adoption of the GB-like policy of enforceable milestones as a means of dis-incentivising speculative applications.

2. The current gap between contracted generation (1726MW) and network capacity (1000MW) highlights a need to give strategic focus to the timely development of the transmission system to accommodate the existing contracted and future connection applications.
3. We propose that the Utility Regulator adopts an incentive-based model of price control in order to incentivise NIEN and SONI to adopt more innovative solutions to network reinforcement than relying solely on the conventional capital intensive solutions. Innovative solutions would strongly support the Regulator's statutory duty of protecting consumers by reducing costs to consumers. The RIIO (Revenue= Incentives + Innovation + Outputs) regulatory framework adopted by Ofgem in GB is an example of one such incentive-based model.
4. Rebating should be introduced where subsequent connectees benefit from connection assets funded by an initial connectee, in order to reimburse the initial connectee for its initial funding and to discourage inappropriate market behaviour e.g. delaying a connection just to avoid charges.

Please do not hesitate to contact me should you have any questions.

Yours faithfully



Claver Chitambo
Senior Electrical Engineer, Ireland
T Claver.Chitambo@res-group.com
E +44 1788 220 789

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Consultation questions:

Q1. Do you agree with these strategic priorities?

RES agrees with the stated priorities. In addition, the development of the transmission system to accommodate the existing contracted and future connection applications stands out one of the areas that need strategic attention. The current gap between contracted generation (1726MW) and network capacity (1000MW) suggests a general weakness in the manner in which transmission planning and development is being undertaken. There is no doubt that a significant portion of the 1500MW of generation applications awaiting processing under Phase 2 is speculative in nature so a sound framework for underpinning the analysis and decision making for network investment is critical. Constraint of generation, arising from transmission capacity, could be used as proxy for network investment signal.

Q2. Do you agree that these are the main developments we should be mindful of? Are there any other developments which are important?

By far the most significant development has been the influx of 1700MW of generation connection applications, 1500MW of which is now proposed for processing under the Phase 2 offer process. Since these applications were made in reaction to the uncertainty created by the removal of the planning consent criteria, it is likely that a significant portion of them are speculative. Processing all of these applications sequentially is not practical and applying a batch process would not be much better as it would lead to several iterations of incorrect and costly network designs leading to connection offers that cannot be accepted, even by non-speculative applicants. RES suggests that the new connection policy introduces a mechanism that either encourages speculative applications to leave the connection process or prioritises applications that have met certain milestones. To the extent that this is legally possible, a new connection process which deals with the current speculative applications and discourages further speculative application would be the ideal solution.

The emergence of energy storage is also a significant development as these new connections could support security of supply. Energy storage connections, which are set to increase over the coming years, could play a vital role in the provision of system services and management of demand and generation in such a way as to create network capacity or defer network reinforcement. Where such connections would offer additional flexibility or DS3 system services to system operators, RES proposes that the connection policy ensures the prioritisation for energy storage connections. This would facilitate the achievement of government renewable energy targets and potentially reduce costs to customers whilst increasing security of supply. Not only should the connections be prioritised, but a suitable connection charging mechanism should be considered, as current charging regime is unsuitable for storage and does not fully recognise the significant potential benefits that these devices can bring to the network in terms of capacity release and overall system optimisation.

Q3. Is there a role for connections policy to promote effective network management? If so, what are the issues which need addressed and potential solutions as part of this review?

Given the critical shortage of network capacity, the regulatory framework should also incentivise NIEN and SONI to adopt more innovative solutions to maximise the use of existing available network capacity e.g. the application of dynamic ratings, smart networks or over-installation. These innovative solutions would increase system efficiency and reduce cost to consumers. To date, NIEN

have carried out trials on active distribution network management systems but have reported issues with the communications deployed to send power control set points between NIEN and small scale generators. We would urge that these issues be investigated and addressed such that the cost efficiency benefits of active network management can be realised in the timeliest manner possible.

We note that NIEN and SONI continue to base thermal ratings for network assets largely on seasonal ratings based on fixed conservative assumptions. A more dynamic approach would maximise existing network capacity utilisation. As an example of the application of dynamic ratings, RES developed and constructed two wind farms in Northern Ireland, each of which was connected with Maximum Export Capacity which was higher than the P27 summer rating of the distribution connection circuit. This was achieved by installing an active power management scheme that dynamically constrains wind farm outputs as when ambient temperature rises and allows unrestricted output if the temperatures falls to preset thresholds. Instead of limiting wind farm capacity to the NIE 33kV overhead line summer rating of 22MW this approach allows the wind farms to export up to 25MW and 30MW when the ambient temperatures are lower than the summer reference temperature. The cost of the scheme is very low as there is one temperature measurement, which is used to predict the highest ambient temperature along the line route, based on the lowest altitude along the line route. Although the schemes have minimal impact on energy output and have been operating without any reported problems for more than 8 years now, we have not observed the adoption of such schemes for other connections.

RES proposes that the Utility Regulator incentivises NIEN and SONI to adopt more innovative solutions. In GB Ofgem has done this by adopting a RIIO (Revenue = Incentives + Innovation + Outputs) framework which capitalises both capex and opex to the regulated asset base, to encourage network companies to pursue network outputs and performance as opposed to asset ownership and development.

Q4. Should we review the distribution charging framework, with a view to making connection charges deeper? If so, how should this be designed? What are the benefits, costs and risks of doing so?

Under deep connection charge, a connectee pays the cost of physical connection to the grid plus any upstream network reinforcement costs it triggers. Although this provides strong locational signals to connectees, the major drawback is that it can present a barrier to entry for generator as the first connectee potentially pays a high cost for reinforcement that may be used by other network users. RES general view is that shallow connection charging remains a better framework in that it lowers barriers to entry and charges for reinforcement are collected post-energisation over the lifetime of the project, through use of system charges. RES accepts that an element of locational signal should be retained in order to promote cost reflectivity which should in turn be reflected in economic and efficient network development. However, the consumer ultimately pays for the cost of the total system, including the costs of new generating plant so it is essential that effective competition in electricity generation is also given due consideration. RES is of the view that a deeper connection charging methodology does not sit comfortably with this objective.

One other issue that need to be considered even under a shallow charging policy, where the party triggering the connection assets pays for all the costs, without recourse to a rebate if a subsequent connecting party uses the same network assets, works in low cost scenarios. Above certain cost thresholds, this becomes unworkable and need to be supported by a rebates policy.

Q5. Should we review how the connections process and queue is managed? If so, what are the issues which need addressed and potential solutions?

Whilst planning consent has worked fairly well in the past and may continue to do so – its major drawback is that it results in longer connection timescales; a project that goes through the planning and grid connection simultaneously will achieve quicker connection timescales than a project that has to achieve planning consent first before commencing the grid connection process. The GB policy of enforceable milestones seems a good balance that allows the grid and planning processes in parallel. RES experience in GB has been that the system of enforceable milestone is releasing capacity and discouraging speculative applications.

Q6. Should we consider connections customer service, engagement and pricing transparency as part of this review? What are the issues which need addressed and potential solutions?

RES supports the adoption of GB-like Guaranteed Standards of Service for Connection which commit network operators to carry out certain connections tasks within specified timescales otherwise pay the customer affected.

Q7. Are there other issues we should review? Which issue(s) are in your view the most material and why?

There is a need to critical review the NEIN connection design policy which requires distribution connected generation to operate at any reactive power level within the required reactive power capability without causing voltage to exceed statutory voltage limits. The policy was introduced without industry consultation and regulatory approval in 2012. The net effect of this design methodology is that, in certain cases where a single 33kV overhead connection sufficed up to 2012, two 33kV overhead lines or a 33kV cable or a 110kV overhead line may now be required. In such cases, the resulting increase in connection costs is up to several million pounds. This increased cost, coupled with the additional construction/development timeline and risk introduced, amounts to a significant barrier to the connection of new embedded renewable generation in Northern Ireland and could therefore be said to represent a barrier to competition in generation. Moreover, despite the expensive connections which facilitate unrestricted reactive power, SONI will not contract with embedded generators for Steady State Reactive Power system service.