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07/12/2023

Dear Sir/Madam,

Re: **Cluster Methodology Review Consultation Paper**, 7 November 2023

Introduction to RES

RES is the world's largest independent renewable energy company with operations across Europe, the Americas and Asia-Pacific. RES has been at the forefront of renewable energy development for 40 years and is responsible for more than 23GW of renewable energy capacity and energy storage projects worldwide. RES is active in a range of renewable energy technologies including onshore wind, offshore, solar and energy storage and transmission and distribution.

From our office in Larne Co Antrim, RES has been at the forefront of wind farm development in the Republic of Ireland and Northern Ireland since the early 1990s. RES has a growing portfolio of solar and energy storage projects across Ireland.

RES wants to play an active part in the Northern Ireland's energy future, ensuring our projects contribute to decarbonising the energy system at least cost to the consumer, in line with RES' vision to be a leader in the transition to a future where everyone has access to affordable zero carbon energy. We therefore welcome this opportunity to respond to the UR Cluster Methodology Consultation paper of November 2023 ("the Cluster Consultation) and we are happy for our response to be published.

Executive Summary

We continue to support Generator Cluster connections in principle as a vehicle for efficient grid integration of essential new renewables and flexibility required to meet clean energy targets. For this reason we very much support ongoing review and improvement of the Cluster Charging section of the NIE Statement of Connection Charges. We also support many of the proposals being made by NIE and which are covered in the Cluster Consultation. However, we believe that in many areas the changes being proposed are

unnecessarily conservative and are likely to hinder delivery of essential new net zero enabling projects at a time when the opposite mindset is required. In particular, we would urge UR to reconsider its position in respect of;

- **Standardisation of Capacity Allocation:** Rigid application of a 0.95 power factor will result in transformer capacity underutilisation. A cluster specific rudimentary load flow study to determine correct MVA rating will realise significant efficiencies in return for insignificant resource burden.

- **Timing**: The right of a generator to exit a cluster on grounds of delay is currently restricted to the generator that is first in the queue. This is arbitrary and potentially discriminatory. This restriction should be removed.

- **Cluster Designation**: Cluster development needs to start earlier in order to reduce delays to generator connection. Renewables projects that are in the EIA process should count for the purposes of calculating the needs case qualifying MW. We accept a suitable scaling factor of 0.7 or similar should apply.

We have made specific proposals in the responses to the individual questions outlined below.

We also note that “clustering” in its current form assumes generator connections at distribution voltage fed by a transmission substation and transmission network infrastructure. There is a clear trend for new renewable power station projects to generally increase in output capacity. This is due to factors such as the average MW increase in the size of wind turbines and the need to achieve economies of scale in order to make projects viable. This general increase in size means that new renewables projects are more likely to seek transmission connections than was previously the case. We think that the principles of design and delivery efficiency that underpin current state clustering could also apply to the grouping of transmission connections as well as distribution connections. For this reason we propose that the clustering principles be considered for adoption in relation to transmission connections as well as distribution.

We are keen to engage further on Cluster Connections and more broadly in relation to the Northern Ireland’s transition to net zero. We would be happy to answer any further questions on our evidence or provide additional information if required.

Yours faithfully,

Energy Networks Director
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Standardisation of Capacity Allocation

We continue to disagree with NIE Networks's recommendation to standardise capacity allocation through the rigid application of a 0.95 power factor. Whilst it is correct to apply 0.95 power factor at generator sites this does not translate to 0.95 power factor being realized at the cluster transformer site because MVArs are gained or lost along the interconnection circuits and MWs lost depending on circuit characteristics and operating conditions. Taking this approach will result in a uniform reduction in cluster transformer capacity to 85.5MW and will lead to underutilisation of the cluster transformer capacity.

A more accurate approach would be to determine the transformer capacity based on a rudimentary load flow study which would more accurately predict the impact of generator sites operating at a 0.95 power factor. The capacity allocated to a cluster would represent the correct MVA rating based on actual network losses or gains of MVArs and network losses of MWs.

Cluster Designation

We appreciate that the UR and NIE Networks will seek to strike the right balance between the need to commence cluster development in a way that will enable grid integration of new renewable projects without exposing the NI energy consumer to unacceptable risk of funding stranded assets.

However, industry experience of the cluster process thus far is that their development does not start early enough, such that the earliest generation projects are subject to long connection timescales of circa 8 years.

With this in mind, there is merit in considering generation projects that have commenced EIA process in designating a cluster. The fact that RNI now regularly provides NIE Networks with non-confidential pipeline data is a step in the right direction. However, we would also highlight that, in GB, decarbonisation targets have driven multiple policy interventions to try to ensure that grid shortfall and grid connections process do not prove to be a barrier to the integration of essential new renewables. These include the UK government Connections Action Plan, a suite of measures proposed by the Energy Networks Commissioner aimed at halving the delivery time for new transmission infrastructure and the OFGEM Accelerated Strategic Transmission Investment framework to name but a few. The driver for all of these measures is that current state business as usual for delivery of new transmission infrastructure will suppress investment and prevent the hitting of mandatory decarbonisation targets. There is clear recognition that increased urgency and decisive action is required in order to drive acceleration of new grid delivery in GB. We think it is now essential that the same theme be introduced into the management and delivery of new grid connections in Northern Ireland.

In light of these factors, we would propose that the cluster methodology formally incorporates generation projects that have commenced EIA process as an early signal in cluster designation. As per our original response to NIE, such projects could be subject to a scaling factor of 0.7.

Timing

We agree with the UR view that the timing provision should be clear. The current timing provision is complex and difficult to implement.

That said, whilst accepting that a designated cluster should be in a position to survive the exit of a generation party so that generators remaining in the cluster are not left without a grid connection solution, it is unclear why the option to exit a cluster is only available to the first in the queue. This position seems arbitrary and discriminatory. There are instances where the first in queue generator finds cluster timescales acceptable, whilst the next in queue finds such timescales unworkable. We urge the UR to press NIE to amend the

methodology to remove the requirement for a generator seeking exit from a cluster to be the first in the queue.

Technical Assessment – Geographic Extent of a Cluster

We welcome and support the proposal to extend the guideline geographic range of a cluster to 15km with the potential to deviate on a cluster specific basis.

Drivers and Benefits of Change

We agree with the NIE Networks recommendation to include the connection of large customers to existing cluster infrastructure. We think it aligns with the NIE Networks duty to "develop and maintain an efficient, coordinated and economical system of electricity distribution".

Demand Security of Supply Requirements

We agree with the NIE Networks recommendation that demand customers connecting at existing clusters, like any other demand, be subject to Engineering Recommendation (EREC) P2 (NI) security requirements and SONI's Transmission System Security and Planning Standards (TSSPS).

However, we also agree with NIE Networks recommendation to issue a consultation to update EREC P2 to reflect that the demand element of electricity storage is very unlikely to behave as a normal demand customer and should not be subject to normal demand security requirements. In the GB market, storage is treated as generation for licensing purposes and is considered "interim" demand for grid charging purposes.

Like most generation connections, we think storage assets should not be subject to mandatory security requirements, but instead, developers be allowed to opt for their chosen security level, subject to their own commercial considerations.

Network and Large Customer Demand Connection Charges

We support the NIE proposals to charge large demand customers connecting at clusters for their connection assets, including any infrastructure required to provide security of supply in line with EREC P2 and TSSPS and to also recover costs of network reinforcement projects which use existing cluster infrastructure through use of system charges. The use of constructed cluster infrastructure for demand connection should result in economies through optimised use of those constructed cluster assets and minimisation of build of additional infrastructure.

Demand at Clusters – Technical considerations

We agree that, as the primary purpose of cluster substations is to facilitate renewable generation, the 33kV busbar voltage at clusters should not be changed to facilitate demand connections.