

Peter Hall
Clerk to the Committee for the Economy
Northern Ireland Assembly
Room 347
Parliament Buildings
Stormont
Belfast

8 November 2021

BT4 3XX

Dear Peter

Re: Small Scale Green Energy Bill

I welcome the engagement of the Economy Committee in seeking the view of NIE Networks on The Small-Scale Green Energy Bill as a key stakeholder. I would like to initially support the response provided by Joe Reynolds of the Department for Economy dated 17th August 2021. The points raised in this letter should provide a high-level view of the proposals contained within The Bill and their desired outcome.

As you will be aware, The Department for the Economy (DfE) completed extensive public and stakeholder engagement as part of the Energy Strategy consultation. Statements from DfE in the past, and as indicated in the Energy Strategy consultation, have suggested that the Energy Strategy will have a target of at least 70% of electricity consumed by 2030 to be produced from renewable sources. This is a challenging target and will require extensive analysis of the electricity network (distribution and transmission) and the economic factors surrounding development of renewable electricity projects at all scales both on-shore and off-shore.

Northern Ireland surpassed previous renewable electricity targets of 40% of demand to be met from renewable sources by 2020. The most recent figures show that for the 12-month period July 2020 to June 2021, 45.4% of demand was met from renewable sources located in Northern Ireland. Currently, these statistics do not include microgeneration that is exported onto the distribution network, and therefore represents a minimum figure.

NIE Networks would stress the need for robust, holistic analysis to determine the most cost-effective way of achieving new renewable electricity targets (being mindful of the dependency of other sectors e.g. heat and transport, on electrification for decarbonisation). Having said that, small-scale and microgeneration has proven popular for certain customers and has contributed to Northern Ireland's overall decarbonisation pathway. The previous energy strategy and the launch of the Northern Ireland Renewable Obligation Certificates (NIROC) resulted in the development of 1,285MW of large-scale, 321MW of small-scale and 86MW of micro-scale renewable generation in Northern Ireland.

The scale of distribution connected generation to date has been challenging resulting in an electricity network with limited ability to accommodate further export connections without significant upfront costs to the connecting party and the need for widespread network reinforcement. The cost of connecting to the distribution electricity network in Northern Ireland is higher to the party seeking connection than in neighbouring regions, by virtue of the method of apportioning costs between the party seeking connection and the wider customer base through the socialised charge. For customers connecting to the distribution network in Northern Ireland, total connection costs are chargeable to the customer (including connection assets and reinforcement required at the connection voltage and one voltage level up). However, in other jurisdictions the reinforcement costs are socialised across the wider customer base and are not chargeable to the connecting customer or only a portion is chargeable.

A suitable connection charging framework will ensure that Northern Ireland is as attractive for investment as neighbouring jurisdictions. It will also facilitate the connection of renewables, battery storage and LCTs which includes EV charging infrastructure. An appropriate charging methodology is essential to facilitate the achievement of all aspects of the new energy strategy (i.e. renewable energy, heat and transport).

The Single Electricity Market (SEM) and other markets e.g. System Services, have also been developed to enable suitable cost recovery and incentivise the deployment of renewable generation and supporting technologies in Northern Ireland whilst maintaining security of supply.

Through engagement with our customers, it is our understanding that the main driver for installing microgeneration¹ (currently defined by NIE Networks as 16A per phase, 3.68kW single phase and 11.04kW 3-phase) is to offset customers' own electricity consumption from the network i.e. self-consumption. The purpose of the majority of micro generation installations is thus not for wholesale supply, rather it is to contribute to meeting the energy needs of specific individual customer.

Therefore, the main benefit for such customers is to reduce electricity bills from their electricity supplier for energy supplied from the grid. NIE Networks additionally encourages such customers (also known as 'prosumers') to optimise their generation within their premises either by a) switching on flexible loads at time of high generation or b) installing energy storage, such as batteries (via G99/NI Fast Track process) to utilise or store this generation output that would otherwise have been exported. The Girona Project² is a good example of this.

To facilitate this customer behaviour, we have been running two innovation projects:

- FLEX³ – which financially incentivises customers to help us manage congestion on the electricity distribution network by being flexible with their demand and generation.
- FESS⁴ (Facilitation of Energy Storage Services) – which identifies any blockers to the deployment of customer owned energy storage technologies and seeks to remedy them.

NIE Networks would also highlight the additional benefits and opportunities that such customer behaviour would bring about, including but not limited to:

- The promotion of a vibrant energy storage market in Northern Ireland with all the resultant benefits,
- The promotion of a vibrant aggregator market in Northern Ireland with all the resultant benefits.
- Increased penetration of energy storage technology will increase the liquidity in the various flexibility markets e.g. System Services and NIE Networks' FLEX market, driving down costs for all customers and delivering revenue opportunities for prosumers.

For Northern Ireland to avail of these benefits, it is important that any Bill of this kind incentivises such customer behaviour. However, it appears that the focus of The Bill as proposed, is to incentivise the installation of micro-generation on the basis of an export tariff rather than for self-consumption purposes. Consideration should be given to ensure that this tariff does not incentivise significant export from microgeneration which may have a widespread impact on the low voltage electricity distribution network resulting in the need for modification and reinforcement and increase in the volume of electricity network losses. It is not evident that this impact and its associated costs have been adequately assessed. By reducing micro generation export or ideally supporting zero export connections we can minimise network reinforcement costs and minimise network losses.

¹ Note the possible confusion that could be caused based on The Small-Scale Green Energy Bill being focused on the export of renewable micro-generation onto the electricity network.

² <https://www.gironaenergy.com/>

³ <https://www.nienetworks.co.uk/flexibility>

⁴ <https://www.nienetworks.co.uk/future-networks/innovation-projects/our-innovation-projects/fess>

The consideration that the customer may be better off financially by consuming their own generation rather than exporting and then later potentially paying a higher unit price for demand, has not been considered in The Bill. Consideration should be given to ensure that The Bill is not encouraging a behaviour of export by over incentivising the customer to do so and also by placing obligations on the supplier to have a specified percentage of their electricity supply sources from micro-generated renewable electricity.

As the Single Electricity Market (SEM) becomes increasingly renewable the electricity supplied into our homes from the wholesale electricity market will also become increasingly renewable. Therefore, it is not possible to state that offsetting import or exporting renewable micro-generation will have a net positive benefit in terms of renewable electricity production/consumption in Northern Ireland. Extensive analysis is needed to understand the impact of increased export from micro generation in the context of network capacity, supply/demand at a system wide level – including the impact on System Non-Synchronous Penetration (SNSP)⁵ and dispatch down/re-dispatch and the associated cost.

In October 2021, The Department of Finance (DoF) published a consultation on the uplift to standards of Part F of the Building Regulations. Options 2 and 3 within this consultation are intended to encourage installation of on-site renewable generation and improved fabric standards. The consultation acknowledges the limits for micro-generation connections (as detailed previously) and notes the impact export connections can have on the network. These consultation proposals have been made subsequently to The Bill being proposed, however the proposal that renewable micro-generation could be required to ensure compliance with Building Regulations the scale and cost of The Bill should be further scrutinised in this context.

In conclusion, the need for holistic, whole system analysis, including generation of all sizes, electricity networks at all voltage levels, all markets and future support schemes in the context of the Energy Strategy and the overall cost implications to the electricity customer (including vulnerable customers) is essential ahead of progressing the proposed Small Scale Green Energy Bill, or similar, with an overall goal of ensuring a policy framework in Northern Ireland that maximises the ability of achieving ambitious renewable energy targets while ensuring a just transition at a reasonable cost.

Yours sincerely



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⁵ The real-time operational limit of how much demand can be met from non-synchronous generation (including interconnector imports) instantaneously.