A Review of the Connections Policy Framework in Northern Ireland

Department for the Economy (DfE) and Utility Regulator (UR)

A joint Call for Evidence

7 July 2023

About Department for the Economy (DfE)

The Department for the Economy (**DfE**) was established in May 2016. Its responsibilities include:

- wider economic policy, including specific areas like Energy, Tourism and Telecoms
- the operation of a range of employment and skills programmes
- oversight and funding of the further and higher education sectors
- various aspects of employment law
- the management and operation of various EU funding programmes

Our Vision:

Our vision is for Northern Ireland prospering through a decade of innovation which will deliver an economy that is ten times better than it is today, with benefits for all our people.

Our Mission:

To develop and implement agile policies and programmes which promote a competitive, sustainable and inclusive economy through investment in:

- skills
- economic infrastructure
- research and innovation
- business development

DfE Energy Group:

The Northern Ireland Executive adopted the Energy Strategy for Northern Ireland in December 2021. The vision of the Strategy sets out how Northern Ireland will achieve net zero carbon and affordable energy, in line with UK Government commitments, by 2050.

The Energy Strategy identified a target of 70% of electricity consumption to be from a diverse mix of renewable sources by 2030. This target has since increased to 80% through the Climate Change Act (Northern Ireland) 2022.

About the Utility Regulator

The Utility Regulator (**UR**) is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Abstract

With the recent publication of the Northern Ireland Executive's Energy Strategy – Path to Net Zero and the Climate Change Act (NI), UR and DfE are collaborating to carry out a review of the legislative and regulatory framework for connections in Northern Ireland (NI) to understand if it meets the needs of NI consumers and will enable delivery of the Energy Strategy. Getting connected quickly, easily and at a fair price is important for domestic consumers, businesses and generators alike.

This paper is a call for evidence and so represents the first step of UR and DfE's electricity connections policy framework review. Further legislative and regulatory steps are likely to be required.

Audience

This call for evidence will be of interest to electricity distribution and transmission companies, organisations representing connecting and wider, public consumer interests. This will also be of interest to licensees, new and existing connectees, developers and those modifying connections.

Consumer impact

Currently in NI the connecting party pays for the connection of the asset and any reinforcement to the distribution system at the connection voltage level and one voltage level above. In the case of a customer connecting at 33kV, they pay for any reinforcement to the Transmission System at 110kV.

There have been calls to move away from this policy so that parties connecting to the system pay less where reinforcement is required by their connection and the additional reinforcement costs would be socialised amongst all electricity consumers.

If made, this change would impact all electricity consumers (including business and domestic consumers) as they would pay for a higher proportion of reinforcement costs via their electricity bills than they do currently. In addition, the value of the assets paid for by all consumers are added onto NIE Networks' regulatory asset base (**RAB**), and NIE Networks will get a return on the assets for their lifetime (usually 40 years).

We (UR and DfE will be described in this paper as '*we*') are therefore seeking evidence to demonstrate whether moving away from how connections are currently paid for will deliver renewables targets that otherwise would not be met.

Executive Summary

Background to review

When a person requests a connection in Northern Ireland (**NI**), NIE Networks, as the Distribution System Operator (**DSO**) for NI, has a duty to provide an offer for a connection under Article 19 of the Electricity (Northern Ireland) Order 1992[1]. This is backed up by its Licence under Condition 30 (NIE Networks Distribution Licence[2]). SONI, as Transmission System Operator (**TSO**) for NI, has a duty under Condition 25 of its Licence (SONI Transmission Licence[3]) in relation to connections to the transmission system.

The regulatory framework for connections has changed significantly in the last 10 to 15 years in order to deliver renewables targets. The current framework for connections has served NI well in meeting renewable targets while keeping costs down for consumers. However, the way electricity is supplied and demanded will change significantly as the Climate Change Act (Northern Ireland) (**CCA**) 2022[4] and the actions arising from the NI Executive's Energy Strategy – Path to Net Zero[5] are implemented. The CCA requires that 80% of Northern Ireland's electricity consumption is sourced from renewable sources by 2030. These changes are already underway as the number of 'early adopters', who are keen to deploy low carbon technologies (**LCT**) in their homes and premises, is increasing. This has led to calls that some types of connections should be cheaper (e.g. for EV charge points) in order to facilitate the uptake of LCTs.

To help meet NI's net-zero targets, UR has approved additional funding to NIE Networks in its current price control (RP6) to support the connection of LCT via the Green Recovery fund. RP6 has been extended by one year to 31 March 2025.[6] This decision included additional investment provided to NIE Networks for increasing capacity in both the distribution and transmission networks. In the next price control period (RP7, which will run from April 2025 to March 2031) NIE Networks has requested[7] allowances for extensive network refurbishment and

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1 https://www.legislation.gov.uk/nisi/1992/231
2 https://www.uregni.gov.uk/files/uregni/documents/2021-08/nie-distribution-licence-effective-16-08-2021.pdf
3 https://www.uregni.gov.uk/files/uregni/media-files/SONI_Transmission_Licence
4 https://www.legislation.gov.uk/nia/2022/31/enacted
5 https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Energy-Strategy-for-Northern-Ireland-path-to-net-zero.pdf
6https://www.uregni.gov.uk/files/uregni/documents/2023-03/RP6%20extension%20%20Licence%20change%20Decision%20Paper.pdf
7 https://www.nienetworks.co.uk/documents/future_plans/rp7-business-plan-full-report-april-2023

upgrades. Any further investment in the network to create additional capacity should reduce the need for reinforcement costs to be incurred by individual connecting customers, therefore lowering their individual connection costs. UR is currently examining NIE network's Business Plan submission for the RP7 period. Any additional allowances for NIE Networks in the RP7 period will be paid for by all consumers. The impact this additional expenditure could have - both in meeting net zero and on consumers bills - needs to be considered alongside the impact that changing connection policy may have. UR will propose a draft determination for the RP7 period by November 2023.

There is also an important societal context to the current review – we highlight energy affordability issues in NI, which are projected to increase due to recent energy price rises and electricity charges payable by business and domestic consumers have already risen to near record levels. Therefore, any changes to the connections framework to facilitate the energy strategy, must, at the same time ensure NI has a just transition, protecting the interests of all NI consumers, including vulnerable consumers.

Joint DfE/UR Call for Evidence

It is likely that the legislative and regulatory framework for connections will need to change, to some extent, in order to meet these challenges. However, the scope of change that may be required, including to the legislative framework, is not clear. Therefore, DfE and UR have decided to jointly initiate this call for evidence which will inform future regulatory and legislative work in this area.

A move away from the current connection policy could, under some options, result in reallocation of a large amount of cost from parties seeking a connection to general electricity consumers (socialisation of cost). This would likely require policy direction as it would mean that those electricity consumers who cannot afford to adopt new renewable technologies, would then have to pay for additional network reinforcement costs triggered by comparatively better off consumers availing of such technologies (and cheaper connection costs). Many of these are vulnerable consumers.

Purpose of this CfE

The purpose of this Call for Evidence paper (**CfE**) is to gather evidence to assess

potential changes to the current connections charging policy[8] in NI and the costs and benefits of potential changes. Those costs and benefits will be considered in light of the NI Energy Strategy and the CCA. This paper does not offer a preferred methodology or any recommendations as to potential changes that could be made to the connections framework. This CfE relates only to connections to the network onshore. It does not include connections made to any future offshore electricity network for NI.

The CfE is opened-ended – respondents may express a view on any aspect of the on-shore connections framework.[9]

- We have identified the connections charging regime and the current degree of socialisation as one issue. In relation to calls for increased socialisation of connection costs, our view is that 'do nothing' should be an option as we have not yet seen the evidence base for change.
- Also, within the wider connections framework we are aware of other issues which may affect the connection of renewables such as connection timelines, planning permission within the connection process and whether to take a "plan led" approach to future connection developments or continue with the current "developer led" approach.
- Developments such as micro-grids and increasing self-generation may also drive change to the connections framework.

The open-ended approach to the CfE may mean that respondents will raise issues that UR and DfE will not immediately be able to address under the current legislative framework. We recognise that the legislative framework for connections will require updating to underpin the energy strategy into the future. However, the open-ended nature of the review will assist DfE to assess any legislative change that may be required. Where a case is for changes to the framework that can be progressed within the current legislative framework, DfE and UR will prioritise those issues and produce a work plan to take any necessary and actionable changes forward.

Any move away from NI's current connection framework must be in the best interests of all NI consumers. For this reason, we have started our review with this Call for Evidence and are seeking clear, robust evidence to assess the

8 This includes transmission and distribution policy.

9 We are not seeking views on the Standard Connection Charge within NIE Networks' Statement of Connection Charges, nor any issues to do with future offshore connections as this is the subject of a separate DfE workstream. See Section 5.1.

effects of any potential changes to the framework. In particular, we will need to see information from NIE Networks about the cost impact of any changes, together with the costs and benefit to consumers and the achievement of net zero from socialisation of further costs.

Sections of this paper

Our Call for Evidence has the following sections:

1. **The context for the review** – this explains how the framework for connections has evolved in NI and highlights some of the recent developments which have the potential to drive the need for further changes to the framework. This section also sets out some potential principles to guide the review.
2. An **explanation of the legislative framework** governing connections
3. A more detailed **overview of the connections policy which applies in NI**.
4. A more detailed **overview of the charging regime for connections which applies in NI.**
5. **Explanation of the scope of the CfE**.
    a. In regard to charging, this section explores the current connection boundary in NI, whereby the connecting party pays for the connection of the asset and any reinforcement to the distribution system at the connection voltage level and one voltage level above; for example in the case of a customer connecting at 33kV, they pay for reinforcement at the 33kV level and for reinforcement to the Transmission System at 110kV. We ask for stakeholder evidence on whether our connection boundary should remain as status quo, versus looking at different scenarios which would involve having a shallower connection boundary, this would result a higher proportion of the connection costs being paid by business and domestic consumers via their electricity bills and a lower proportion of connection costs being paid by the connecting party. We explain how the value of these assets are added onto NIE Networks' regulatory asset base (RAB), on which NIE Networks will get a return on for the lifetime of the asset. We are therefore seeking evidence to demonstrate that making such changes to the connection boundary will deliver renewables targets that otherwise would not be met.
    b. Explore some potential wider issues which may drive changes to the

connections framework and seek views on these. However, these are only illustrative, respondents should feel free to present views and evidence on any aspect of the on-shore connections framework that they consider should change.

6. **Timelines and next steps** in the review.

Next steps in the review

This Call for Evidence is the first step in the connections review which will facilitate the delivery of legislative and regulatory policy for connections in NI, which are fit for purpose and facilitates delivery of DfE's Energy Strategy. It is our intention to ensure these legislative and regulatory policies are future proofed where possible.

However, in meeting these energy targets we must ensure we strike the right balance between an electricity connections framework which works well for connecting customers, but which is also in the interests of wider consumers.

Once the evidence comes back from stakeholders in relation to the questions posed in this paper, we will review the evidence and formulate our next steps on the best approach to take in relation to the NI connections charging framework. This will be presented through a Next Steps paper which we will aim to publish in December 2023. This paper will summarise the responses to this CfE, as well as indicate which areas of connections we will prioritise for change based on the evidence received. We will also indicate how we propose to take these issues forward, including any further consultation that may be needed with stakeholders and the potential timescales for this work.

A review of the legislation will occur in parallel. This work will fall under the remit of DfE and will have a separate timetable.

Annex 1

By way of background information, this paper also sets out information on the connections framework in GB and ROI and compares each of these to the NI framework.

Annex 2

This Annex consolidates the list of questions posed to stakeholders in this review.

Contents

1. Context for the review

1.1. It is important to understand the context behind this connections review, in order to explain this, we have provided a timeline and narrative to illustrate how connections have evolved in NI, beginning in the 1970s, up until the present day, while looking at what the future landscape of electricity connections in NI may look like.

1.2. In the 1970's a policy decision was taken to encourage rural electrification and the expansion of the NI electricity network. To implement this electrification of NI, a 40% subsidy on connection costs was paid for by domestic and small business[10] NI customers through their electricity bills. This 40% subsidy was recovered via the DNO's capital allowance, which was paid for all electricity consumers via Distribution Use of System (DUoS) charges on their bill.

1.3. The network was originally built to serve the reasonable demand for electricity from customers and to facilitate the flow of electricity from large thermal generators only to households and businesses. The connections framework only needed to facilitate the connection of new demand from households and businesses to the network.

1.4. Following the introduction of the Electricity Order (Northern Ireland) 1992[11], the Electricity industry within NI was privatized. Since then, European Directives, UK Government, NI Assembly and the SEM Committee (**SEMC**) have encouraged the connection of renewables and

10 Up until 2012, the 40% subsidy on connection costs was paid for by the majority of customers through their electricity bills. This policy was put in place in the early 1970s to encourage rural electrification and the expansion of the electricity network. The removal of this subsidy in 2012, meant that the general customer base would not pay towards the cost of new connections. Rather only those customers who want to make a new connection to the electricity network would now pay the full amount.

11 https://www.legislation.gov.uk/nisi/1992/231/contents

the electricity industry within NI.

1.5. In 2005, the Northern Ireland Renewables Obligation (**NIRO**) was introduced, providing financial incentives for renewable generation. It proved to be one of the main policy drivers to encourage increased levels of renewable generation in NI (delivering an increase in in the proportion of renewable electricity consumption from around 3% when it was introduced in April 2005, to over 40% in 2019 when it closed to new entrants).

1.6. Electricity is traded on a single wholesale market across the island of Ireland which is known as the Single Electricity Market (**SEM**)[12], the SEM is jointly regulated by UR and the Commission for Regulation of Utilities in the Republic of Ireland. The SEM came into effect in 2007 which resulted in separate connection policies for NI Transmission and Distribution. The SEM was designed to offer the least cost source of electricity generation whilst maximising long term reliability and sustainability.

1.7. The introduction of renewables onto the system under the NIRO has driven significant changes in connections policy since 2005. The connections framework has evolved to facilitate the connection of generation (both large and small scale) which is distributed throughout NI. Often large-scale generators wish to connect in rural parts of the country where the network is not always suitable for generation connections, as it was designed for a different purpose. The regulatory changes explained below have taken place without a corresponding evolution in the legislative framework (see Section 2 for further details).

1.8. In order to facilitate the connection of more renewables onto the system,

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12 https://www.uregni.gov.uk/sem#:~:text=Information%20on%20Energy,What%20is%20the%20SEM%3F,in%20the%20Republic%20of%20Ireland.

the UR published a review of connections in 2010[13] which focused on the need for new connection policies to be developed to deal with the numerous requests from developers to connect their wind farms to the NI system and to facilitate the achievement of the Northern Ireland Assembly's stated intention to achieve 40% of electricity consumption from renewables by 2020. The review looked to overcome the potential major challenges at the time such as planning developments, timing of connections, getting connected to the network, demand issues, removal of the 40% subsidy, contestability, connecting small scale distribution generators and large-scale wind clusters.

1.9. In 2012, UR followed this up by publishing a decision paper[14], at this time rural electrification had been implemented in Northern Ireland, this paper aimed to promote cost reflective charging and to encourage connections at the points of the network that required the least construction of new assets, the 40% subsidy was removed from the start of the NIE Networks RP5 price control in 2012, this decision aligned with the rest of the UK.

1.10. In the early days of the NIRO, remote wind farms were connected to the distribution system via direct lines from the wind farm to the grid. As the connection of wind farms gathered pace, the question of how to facilitate an increasing number of wind farms to the electricity grid whilst respecting Northern Ireland's landscape and cultural heritage gained prominence. A new methodology was developed for connecting groups of generators (Clustering) to the Northern Ireland Distribution System. The cluster methodology was consulted upon and implemented in 2011[15]. The principle was that NIE Networks would, in appropriate circumstances, group or "cluster" generators so that they could share network infrastructure. This would improve access to the network for remote renewable generation, by extending the 110 kV transmission

13 https://www.uregni.gov.uk/files/uregni/consultations/Consultation_on_Electricity_Connections_to_the_NI_Dist_System_Vfinal.pdf
14 https://www.uregni.gov.uk/files/uregni/media-files/Electricity_connection_policy_decision_paper_-_April_2012.pdf
15 https://www.uregni.gov.uk/files/uregni/media-files/Decision_Paper_on_Charges_for_Connecting_Groups_of_Generators.pdf

system, in the form of a 110/33 kV substation (referred to as a cluster substation), to a point more central to these groups of renewable generation projects. The benefits of a shared connection compared to individual direct line connections, is that there is a reduction in environmental and visual impact achieved by decreasing the aggregated length of overhead network required, and instead having only one main circuit to serve a number of wind farms. The introduction of clusters also provided increased focused capacity to the transmission network in comparison to a variety of single distribution connections[16]. As more capacity became available due to the introduction of clusters, more developments in NI could get connected to the network.

1.11. Under the current NI charging regime, Appendix 2 of the Statement of Connection Charges[17] sets out the cluster charging methodology whereby an element of cost socialisation already exists for Cluster substations. A subsection of the costs associated with the construction of a new Cluster substation are in effect socialised initially and paid by the NI electricity consumer. However, the NI consumer do not bear the totality of risk, the balance will be recouped as the first 110/33kV transformer capacity is utilised (once 56MVA of the total 90MVA capacity of the cluster has been utilised) through new customers connecting into it, until the full cost has been recovered.

1.12. The cluster methodology has been a major factor in enabling the high levels of renewable generation connected to and committed to connect in Northern Ireland, and a major contributor towards the early achievement of the 2020 40% target.

16 Having numerous connections rather than one main circuit would have reduced the capacity on the network, it would have likely led to additional upgrades to the lines which in turn would have raised the risk of further delay, outages of existing wind farms and increased costs

17 https://www.NIE Networksetworks.co.uk/documents/connections/statement-of-connection-charges-february-2022-v1-6.aspx

1.13. In the second half of 2014[18], UR issued a call for evidence which looked at opening up Contestability in Connections and in mid-2015[19] a decision paper was published on the introduction of contestability in electricity connections. The outcome of this decision gives NI connecting customers a choice in who carries out the contestable elements of their connection (NIE Networks or an ICP), previous to this decision, only NIE Networks were permitted to carry out these connection works. Contestability serves to increase competition and provide customers in NI with a choice when it comes to connecting to the distribution and transmission system.

1.14. In 2016, NI stakeholders raised concerns about how well connections policy was working in NI. A lack of capacity on the network was presenting challenges for connecting to the grid. In light of these challenges, in November 2016[20], UR published a call for evidence with the aim of discovering stakeholder views on what should be done to improve connection processes without developing a network which is not economically justifiable. Within this paper in 2016, UR highlighted some of the existing regulatory constraints which would involve the need for legislative change, these areas included the requirements for planning permission and potential rebate amendments etc.

1.15. UR then set out the next steps[21] of the connections process and network management, including how connection offer extensions should be treated in the future given the influx of applications.

1.16. Following the Electricity Connections Review Next Steps paper, in 2017 UR published "Proposed Modifications to NIE Networks Distribution Licence"[22] which looked at how NIE Networks considered the incidence of

18 https://www.uregni.gov.uk/files/uregni/consultations/Contestability_in_Connections.pdf
19 https://www.uregni.gov.uk/files/uregni/media-files/Contestability_in_Connections_-_final_decision_paper_-_July_2015.pdf
20 https://www.uregni.gov.uk/publications/electricity-connections-call-evidence-november-2016
21 https://www.uregni.gov.uk/files/uregni/media-files/Electricity%20Connnections%20next%20steps%20consultation%20FINAL.PDF
22https://www.uregni.gov.uk/files/uregni/consultations/Electricity%20Connections%20Licence%20Mod%20Consultation%20May%202017.pdf

under-utilisation of existing network capacity, the connection process and the queue. This resulted in making modifications to Condition 30 and 31 of the NIE Networks Distribution Licence and NIE Networks consulting on various ways of utilising the capacity on the system. Between 2018 and 2020 NIE Networks further consulted on MIC (Maximum Import Capacity) charging methodology[23], Providing Distribution Generation Offers with Non-Firm Market Access (For applicants 5MW and above) and a call for evidence on Networks Cluster Methodology Review. Indeed, more recently NIE Networks has also kicked off a Call for Evidence on flexible connections to seek the views of customers and other stakeholders on the opportunities and efficiencies that might be achieved by different flexible connection arrangements within NIE's Networks control[24].

1.17. In 2021 UR kicked off a further review[25] on the potential to further introduce contestable works for new connections in NI, this was to open contestability for low voltage electricity connections at distribution, these additional contestable works will be implemented in the near future.

1.18. More recently, DfE published the Energy Strategy – 'Path to Net Zero Energy[26]' in December 2021 on behalf of the Northern Ireland Executive. It outlines a roadmap to 2030 aiming to deliver a 56% reduction in our energy-related emissions, on the pathway to deliver the 2050 vision of net zero carbon and affordable energy. The five key principles of the Energy Strategy are:

1. Placing the consumer at the heart of the energy future;
2. Growing the green economy;
3. Do more with less;
4. Replacing fossil fuels with renewable energy (ultimately ending the

23 A large portion of connectees with a contracted MIC of greater than 70kVA had an aggregated demand circa 600MVA lower than the contracted MIC figure, this meant that there were substantial levels of unused capacity on the network resulting in unnecessary reinforcement. To combat this NIE Networks introduced a MIC Charging Policy as a mechanism for efficiently managing network capacity.

24 https://www.nienetworks.co.uk/documents/regulatory-documents/flexible-connections.aspx

25 https://www.uregni.gov.uk/files/uregni/media-files/Contestability%20CFE%20Feb%202021%20Final.pdf

26 https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy

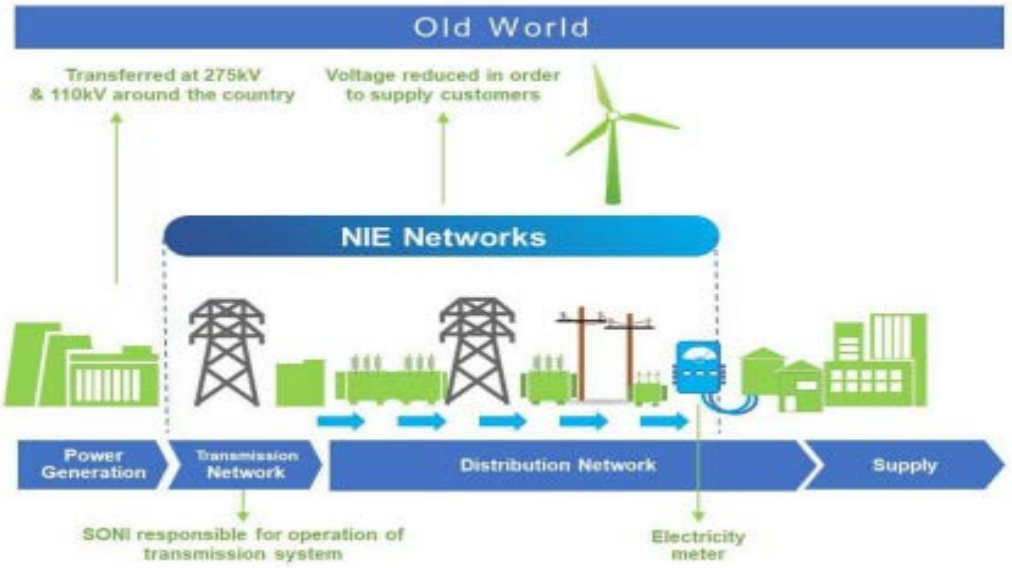
importing of fossil fuels into Northern Ireland); and

5. Creating a flexible, resilient and integrated energy system to deliver our power, heat and transport needs.

1.19. Additionally, in June 2022, the CCA (Northern Ireland) received royal assent, this Act set an even higher statutory target that 80% of electricity consumption is from renewable sources by 2030.

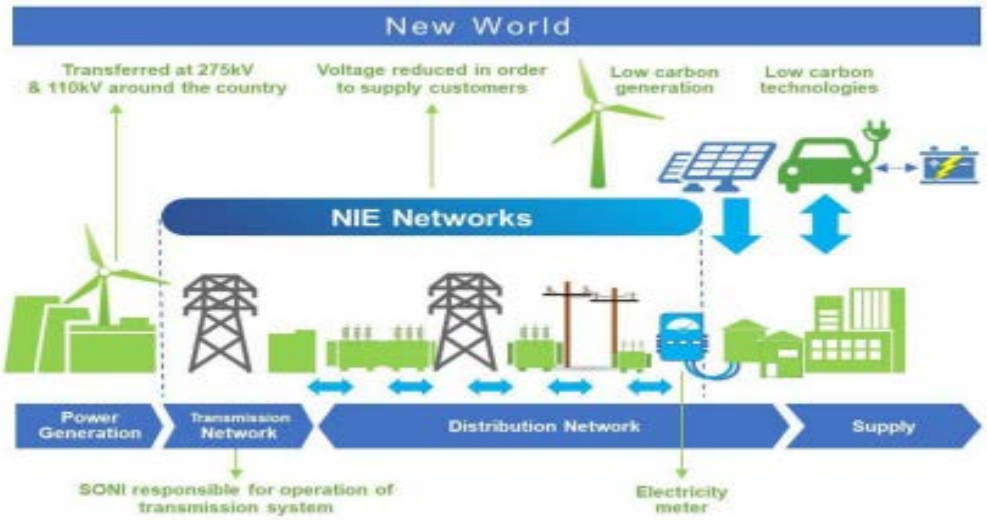
1.20. Both the legislation on connections and the regulatory framework will need to change in order to meet this target and future targets that may be needed by 2050.

1.21. The network, illustrated by the “Old World” in the diagram below, was designed to efficiently facilitate the flow of electrical energy towards the customer.



Source: NIE NETWORKS

The potential future landscape of connections



Source: NIE NETWORKS

1.22. The diagram above the 'New World' diagram demonstrates the direction of travel that we are living in. NI has seen a rapid change in the way in which energy is produced, with growth in distributed and locally connected energy resources. At the same time the take up of new technologies and solutions such as electric vehicles (**EVs**), heat pumps and battery storage is increasing, the way electricity is supplied has changed considerably in recent years.

1.23. NIE Networks forecast[27] that there will be a reasonable uptake of potentially 300,000 EVs in NI by 2030 and over 1.2 million by 2050 (along with 120,000 heat pumps by 2030). If these increases in EV numbers are accurate there will likely be a large increase in new and modified connections to the network to facilitate this uptake in the upcoming years.

27 https://www.nienetworks.co.uk/documents/future_plans/rp7-business-plan-full-report-april-2023.aspx

1.24. In order to achieve our Net Zero targets, renewable connections will have to accelerate significantly. These large, estimated figures in relation to the uptake of EVs and heat pumps demonstrate the huge challenge ahead in transitioning to Net Zero. However, it is important to note that there is uncertainty around the level of electrification that will be needed in sectors such as heat and transport. Consequently, there is uncertainty about the level of demand that the electricity system will need to meet.

Prosumers and the impact on load profiles

1.25. We are aware that there is a drive in NI for many electricity consumers, including large businesses, to ensure they become energy self-sufficient. One potential method that can be used to achieve this will be through self-generation of electricity. The growth in distributed and locally connected energy resources will provide more consumers with the opportunity to produce and control their own energy. These customers can be described as “prosumers”.

1.26. Given the target of 80% of electricity consumption from renewable sources by 2030 the number of NI prosumers may increase. This customer segment is likely to consist of more affluent domestic consumers, or industrial consumers, who are better able to take advantage of opportunities to generate their own energy for heat and electricity and in doing so reduce their electricity costs. However, social housing providers may also have the resources and incentives to install LCT and other prosumer functions, availing of their economies of scale to make them affordable.

1.27. For prosumers the grid may not be the primary supply of electricity and consequently prosumers may contribute less towards the cost of grid maintenance and operations where network charges are largely paid for by consumption rates/charges rather than a standing charge. However, they will rely on the grid at times so should continue to pay towards its

maintenance and operation.

1.28. Other consumers, including vulnerable consumers, may not be able to adopt renewable technologies to the same extent, as they may not be affordable for them. The present review needs to be mindful of the impact that prosumers could have on other groups of customers (see further below on load profiles) consistent with the Energy Strategy priority for a "just transition". Also, potential increasing amounts of self-generation on the distribution network as well as the potential for electricity storage solutions will have a significant impact on the way in which network charges could/should be structured and developed. The Utility Regulator's duties are to protect the interest of consumers of electricity supplied by authorised suppliers. The Utility Regulator will keep the interactions between this project and the structure of the tariff network charges under review.

1.29. It is important to be aware of the potential impact of more prosumers on network, other consumers, and the potential effect on energy profiles. The potential uptake of renewable energy technologies by prosumers in NI may reduce their overall demand on the network but also require increased capacity to enable their use of renewable technologies.

1.30. One potential outcome of having more prosumers on the network, is the development of micro grids in NI. A micro grid is a self-sufficient energy system that serves a discrete geographic footprint, such as a university campus, hospital complex, business centre or neighbourhood. Within the micro grid typically various types of distributed energy are used (for example, solar panels, heat pumps, wind turbines) to produce its electricity. Additionally, some micro-grids can store energy through batteries and have the capability to disconnect from the central grid, and therefore can operate independently.

1.31. Another potential scenario that could occur on the network, is that the load

profile of prosumers could decrease as they are self-generating and consuming their own renewable electricity. In this scenario, a prosumer's reliance on using the network may be reduced and in turn they will not need to contribute as much towards network charges. However, there will still be potentially an increase in demand on the NI network (through the uptake of EVs, heat pumps etc) in turn causing increased capacity on the network. This change of energy profiles therefore may increase the proportion of network charges for NI electricity consumers in order to cover the reduction of network charges paid by prosumers, through their non-usage of the network.

1.32. It is important that both the DfE and UR continue to consider what the future landscape of connections will look like in NI. For example, we should consider all possible load profile scenarios that may occur on the network, as well as the potential development of micro grids within Northern Ireland in the future. We must be aware of the benefits as well as the challenges that we face and ensure we have appropriate mitigations in place, to ensure we meet Energy Strategy and legislative climate change targets and in doing so we achieve a just transition, ensuring we protect the short and long term interests of consumers.

Q1. What are the risks and opportunities in relation to the development of micro grids and what issues do these raise for the connections framework in NI?

The Cluster methodology

1.33. Clusters have been an important factor in achieving the 40% renewable targets, through the facilitation of renewable generation connections. However, as we move into the future landscape of connections in NI, UR are open to considering whether the cluster methodology can be amended to facilitate future connections and Energy Strategy goals. This may include investment ahead of need (including in additional transformers) provided that customers take no more risk than they do at present.

1.34. In addition, NIE Networks have recently consulted[28] on the existing generation cluster methodology and in doing so have looked at the possibility of introducing demand connections into clusters. UR is willing to continue to discuss the cluster methodology with NIE Networks and other relevant stakeholders.

Energy Affordability

1.35. A household is said to be affected by energy affordability issues if it has required fuel costs that are above average (the national median level), and were they to spend that amount they would be left with a residual income below the official poverty line.

1.36. In 2016 the latest Housing Condition Survey results were published by the Northern Ireland Housing Executive[29]. At this time around 22% of dwellings (160,000) were considered to have energy affordability issues, this figure was reduced from 42% in 2011.

1.37. The University of York have released a more recent study[30] highlighting vast regional disparities in the percentage of households facing energy affordability issues and they suggest the cost-of-living crisis will continue to worsen.

1.38. It stated that NI is set to be the region hardest hit by rising fuel and energy costs, with an expected 72% of households living with energy affordability

28 https://www.nienetworks.co.uk/documents/regulatory-documents/cluster-methodology-review-consultation.aspx
29 https://www.nihe.gov.uk/getattachment/975a319a-9516-4f0b-a095-382332405ff0/HCS-Main-Report-2016.pdf
30 https://cpag.org.uk/news-blogs/news-listings/fuel-poverty-updated-estimates-uk

issues in January 2023.

1.39. In April 2023, the UR published the results of the Domestic Consumer Insight Tracker survey[31]. This research is repeated annually to gain ongoing insight into consumer experiences of the energy sector. Some of the key headline figures were that;

- 43% of domestic electricity consumers were spending £100 or more each month compared to 13% in 2021,
- 11% of electricity consumers say they have gone without other essentials to pay for their energy at least once in the previous year,
- 63% would be unwilling to pay anything extra on their bill for future investment.

1.40. The Energy Strategy highlights the need to protect consumers, Objective 5 ‘Placing You at the Heart of Our Energy Futures’ has the following objectives;

- People are informed, empowered, supported and protected to enable them to transition to decarbonised solutions for all their energy needs,
- Households and businesses have access to essential and affordable energy to enable a decent standard of living, health and competitiveness.

1.41. The mission statement of the UR is “to protect the short and long term interests of consumers of electricity, gas and water”. When considering potential changes to the connections charging methodology, we must ensure we have all consumers’ interests in mind and we will be taking into the consideration the current cost of living and energy affordability numbers throughout this review, as well as the longer-term benefits for consumers of delivering the energy transition.

31 https://www.uregni.gov.uk/news-centre/launch-domestic-consumer-insight-tracker-survey-results

The rationale for a review of the current connection charging boundary in NI

1.42. The rate of development and distribution of new renewable generation, LCTs and the uptake of heat pumps, electric vehicles (coupled with simultaneous charging) will likely cause a significant increase in electricity demand and so cause the need for reinforcement in electricity networks.

1.43. One of the key drivers of this connections review derives from various stakeholder's evidence that the present NI charging arrangements may hinder the roll-out of LCTs (such as EVs and heat pumps) across the energy system and that current charging arrangements are causing barriers to uptake of these technologies. Under the current methodology, higher connection charges result where capacity is limited and there are extensive reinforcement costs. It is for these reasons that DfE and UR have decided to explore whether there is a case for moving to a more 'shallow' connection charging boundary for some demand customers. However, the status quo could only be changed when a robust evidence base is built up. These connection boundaries are explored further in Section 5.

RP6 AND RP7 price controls

1.44. It is important to highlight that monies have already been provided to NIE Networks for network reinforcement through the existing RP6 price control. This will ultimately potentially decrease the need for capacity reinforcement for individual connections (such as a domestic EV or other LCT connection) due to the broader network development plan. This in turn will result in lower reinforcement costs and cheaper connections for connectees within those areas where work has been completed to upgrade capacity than would otherwise be the case.

1.45. Similarly, in RP7, UR expects the outputs of this price control to result in

further investment in the network creating further capacity, reducing the need for reinforcement costs to be incurred within connection costs resulting in lower individual connection costs.

1.46. In relation to connections allowances, it is important that NIE Networks can differentiate between the benefits for customers of RP6 allowances that have already been provided by UR, additional RP7 business plan allowance requests, and the cost impact arising from any potential socialised connection costs deriving from a shallower connection boundary.

1.47. With the changing connections landscape in NI, it is important that the output of this connections review ensures we have a legislative and regulatory policy in place for connections in NI, which is fit for purpose and meets the Executive's Energy Strategy, and the CCA, targets. It is our intention to ensure these legislative and regulatory policies are future proofed where possible. However, in meeting these energy targets we must ensure we strike the right balance between an electricity connections framework which works well for connecting customers, but which is also in the interests of wider consumers.

Work to date to facilitate future connections in NI

1.48. We are aware of the importance of meeting the targets set out in the Energy Strategy and Climate Change (NI) Act. To date, UR have taken steps to do this under NIE Networks' current Regulatory Price Control (**RP6**). UR has provided additional allowances to NIE Networks to support LCT[32] via the Green Recovery fund, this covered additional funding in RP6 prior to RP7 starting.

32 https://www.uregni.gov.uk/news-centre/decision-electricity-network-reinforcement-support-low-carbon-technology-published

1.49. In mid-2022 the UR approved an additional allowance of over £40m+ for upgrades of low capacity overhead line conductor, low capacity (>10kVA) transformer replacements and some primary substation upgrades to assist Green Recovery costs.[33]

1.50. UR has extended the RP6 time period by 1 year (until 31 March 2025) to enable NIE Networks to better engage with stakeholders and to submit a robust business plan for RP7. NIE Networks submitted their business plan in March 2023 and this is currently under review by UR. At the time of publishing this CfE, UR have not fully reviewed NIE Networks RP7 business plan, however we expect it will aim to facilitate the NI Energy Strategy and climate change targets, the outputs of this business plan, in turn, may have the potential to reduce the need for reinforcement of the network.

1.51. The monies provided already for the existing RP6 price control projects (as demonstrated above) will ultimately potentially decrease the need for capacity reinforcement due to the development of the network. This in turn may result in cheaper connections for connectees within those areas.

1.52. The Electric Vehicle Infrastructure Task Force facilitated by DfI with the aim of bringing together representatives from government, consumers, energy providers, industry and EV drivers to consider NI's EV infrastructure requirements and help set out a clear action plan to deliver a fit for purpose, modern EV charging network [34]. The Task force recommended that connection costs be reviewed, and consideration be given to an appropriate mechanism taking into account the position in GB and ROI. This CfE is the starting point of that review.

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33 NET_E_JF_503a Green Recovery Decision.pdf (uregni.gov.uk)
34 Action Plan for Electric Vehicle Infrastructure published | Department for Infrastructure (infrastructure-ni.gov.uk)

1.53. There has also been funding to date put in place in relation to EVs in NI, for example, The Office for Zero Emission Vehicles have provided over £1.3 million for electric vehicle charge-points in residential areas across NI[35].

1.54. In February 2022 UR provided NIE Networks with £1.747 million for an Electric Vehicle Managed Charging Innovation Project in NI[36]. This trial will aim to manage the impact on EVs in NI through managed charging methods.

1.55. Throughout this connections review process the Utility Regulator will take into consideration the allowances already provided during RP6 and the RP7 business plan in any potential decisions. It is unlikely that there will be changes to any relevant legislation or policy until after the final determination for RP7 is published, which is set to be in 2024.

Guiding principles

1.56. The Energy (Northern Ireland) Order 2003[37] provides that the principal objective of the Department (DfE) and the Authority (UR) in carrying out their respective electricity functions is to "*protect the interests of consumers of electricity supplied by authorised suppliers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission [distribution] or supply of electricity*". As far as the regulation of Networks is concerned, to meet this UR and DfE want to encourage an efficient and

35 https://www.infrastructure-ni.gov.uk/news/funding-boost-electric-vehicle-charge-points-residential-areas-welcomed
36 https://www.uregni.gov.uk/publications/utility-regulators-decision-nie-networks-electric-vehicle-managed-charging-trail
37 https://www.legislation.gov.uk/nisi/2003/419/data.pdf

effective connections framework accounting for the interests of consumers.

1.57. Below, we set out our view of the features of a well-functioning connections framework in NI. The intention is for these features to act as guiding principles for designing a way forward through this review.

- The outputs from our Connections Policy Framework review will facilitate the delivery of the Executive's Energy Strategy targets.
- The outputs from our Connections Policy Framework review will facilitate a just energy transition. In doing so it will seek to benefit all electricity consumers in NI, ensuring the costs of any changes in relation to connections are proportionate to customer benefit.
- Our Connections Policy Framework review will set out the necessary legislative and regulatory changes to ensure facilitation of the future connections framework that descend from this review. It is our intention to ensure these legislative and regulatory policies are futureproofed where possible.

Q2. Do you agree with our guiding principles? Please expand your answer.

2. Legislative Framework for Connections

2.1. As highlighted in Section 1, the NI electricity network was originally built to serve demand for electricity from customers and to facilitate the flow of electricity from large generators to households and businesses. When the Electricity Order (Norther Ireland) was enacted in 1992, Articles 19 to 26 imposed a duty to supply on the Public Electricity Supplier (PES) – which was NI Electricity – and as distribution was not a separate licensable activity at the time, in order to comply with its duty to supply, it was the case that the premises to which supply was to be given would need a connection.

2.2. Section 1 illustrates that the 'New World' of electricity we live in today has developed significantly since 1992. This development will likely continue at a rapid pace in the coming years, as we strive to meet 2030 Energy Targets. The Electricity Order (Norther Ireland) 1992 did not consider today's consumer needs in its provisions and therefore it does not address some of today's potential network issues, such as;

- How capacity would be allocated if scarce. Many areas of the network have limited capacity left to carry electricity, this is particularly the case where it is attractive to install new technologies that will aim to achieve renewable generation. How capacity is allocated appropriately to facilitate the energy transition is not defined in legislation.
- Potential issues in meeting connection timeframes, whereby their licence conditions require that NIE Networks and SONI must make a connection offer within 3 months of receiving the information from the customer.
- Potential permission requirements in the connections process. An example of this is currently there is no legal requirement for a connectee to have obtained planning permission in order to apply for a grid connection in Northern Ireland.
- Plan led versus developer led connections. NI connections have been mainly developer led to date, to facilitate a move to a plan led (a plan led

approach is further explained below in 5.21) approach may need legislative amendments. There may be benefits to moving to a plan led approach, however, there would be many factors to consider, such as the siting of generation needing to be in locationally beneficial areas (for example thermal generation sites are typically located close to the coast as they rely on a cooling system).

2.3. In Section 5, we expand on each of the issues discussed above and seek evidence from stakeholders. For each of these issues, we are unlikely to have the current statutory footing to resolve them. Consequently, a key output of this connections review is to ensure we develop a legislative and regulatory policy for connections in NI, which is fit for purpose and facilitates delivery of the Executive's Energy Strategy, and CCA, targets. It is our intention to ensure these legislative and regulatory policies are future proofed where possible.

2.4. DfE demonstrate the importance of reviewing legislation, with Action 21 of their Energy Strategy highlighting "engagement between Department for the Economy and Utility Regulator officials continued during 2022 across a broad range of policy issues including grid connections, scoping issues relating to offshore renewables and development of the Smart Systems and Flexibility Plan plus a range of consumer protection issues". It should be noted that DfE and UR have continued discussions in 2023.

2.5. Therefore, it is critical that a policy/legislative review continues through this process and is carried out as part of the wider connections review. To understand which of the potential connection changes can be facilitated by the current UR vires, and which connection changes require legislative changes. UR and DfE see this a longer-term piece of work which will continue beyond the initial CfE.

3. Connections Policy in NI

Overarching roles and responsibilities

3.1. The electricity system in NI transports electricity from generators to the consumer. The transmission element carries high-voltage electricity which the distribution element then delivers on lower voltage lines. The consumer contracts with electricity suppliers (Power NI, SSE Airtricity etc.) to pay for the electricity provided.

3.2. SONI Ltd. (System Operator for Northern Ireland) as the TSO plans and develops the transmission element, by for example, accommodating a new transmission connection. Northern Ireland Electricity Networks (NIE Networks) undertakes this role for the distribution network as the Distribution Network Operator (DNO), as well as owning, building, and maintaining both the transmission and distribution elements and connecting premises to their networks.

3.3. Certain network activities undertaken by NIE Networks have been made "contestable", this means these activities are open to competition. However, the electricity network is sometimes referred to as a "natural monopoly". This suggests that truly effective and sustainable competition is unlikely to materialise at all levels of the network. This has an important bearing on how UR regulates network access and charging.

3.4. More generally, UR's role is to protect consumers by ensuring NIE Networks and SONI adhere to the regulatory frameworks set by UR. These regulatory frameworks are designed to bring about safe, reliable, sustainable, quality and low carbon electricity sectors, for the short and long term, whilst ensuring consumers only pay what is necessary for services they receive.

3.5. At a practical level, UR licenses NIE Networks and monitors their compliance with the relevant legal and regulatory framework. Where there is non-compliance, UR can and do take action, in various ways in line with our duties.

3.6. In carrying out its role, UR works within the policy framework set by DfE, some of which is agreed by the NI Executive if it is cross-cutting. DfE is responsible for the delivery of the energy strategy in NI, of particular relevance is the recent Energy Strategy – 'Path to Net Zero Energy' which outlines a range of renewable energy targets including replacing fossil fuels with renewable energy, while creating a flexible, smart and digitalised energy system that integrates renewables across heat, power and transport, creating value for consumers and enhancing security of supply.

3.7. In June 2022, the CCA (Northern Ireland) received royal assent, this act set an even higher statutory target that 80% of electricity consumption is from renewable sources by 2030.

What is a connection?

3.8. A connection is made when a premises is first joined to the Northern Ireland regulated electricity network. It can be at either distribution or transmission level. A connection agreement also includes charges and processes for changes requested by customers to existing connections (for example when requesting increased capacity to supply an EV or to repower wind turbines).

3.9. Different customers with diverse needs may seek connections, or other similar arrangements, from NIE Networks or SONI, under a range of scenarios. NIE Networks facilitates distribution connections[38] in NI and SONI facilitates transmission connections[39] for larger scale connections onto the NI transmission network.

3.10. Traditionally, domestic or business (or "demand") customers have sought access to the network to use energy which has been generated by others. For example, a self-build developer may seek a connection to enable the flow of power to a new build development.

3.11. Another category is generation, this is typically conventional or renewable in

38 https://www.NIE Networksetworks.co.uk/connections
39 https://www.soni.ltd.uk/customer-and-industry/general-customer-information/transmission-connection-p/

nature. However, in more recent years, domestic and smaller commercial customers have also sought network access to export renewable energy which they have generated onto the network.

3.12. A further recent trend involves renewable generation customers generating and consuming the energy themselves (prosumers). A typical customer may be a business or a domestic consumer concerned with reducing their energy bill, with the aim of doing so in a greener way. Effectively, the customer is reducing the electricity demand it requires from the electricity network.

3.13. If a customer was to make or alter their connection via equipment, demand or generation on the customer's side of the electricity meter, affecting their existing electricity supply, NIE Networks would need to assess the impact of that change in line with the Electricity Safety Quality and Continuity Regulations Northern Ireland 2012[40] (ESQCR) (ESQCR is further discussed in 3.18). Consent from NIE Networks will still be required. However, if no physical change is implemented on NIE Networks' network it would not be deemed as a new or altered connection. Consumers do not require NIE Networks consent to install very small generators e.g. small PV installations on domestic premises. They are only required to "fit and inform" NIE Networks that they have installed them. However, if there are multiple fit and inform[41] connections within close proximity[42] to each other NIE Networks will need to assess the impact of that change in line with ESQCR regulations.

3.14. The generation of electricity is a licensable activity unless it is exempt by the Electricity (Class Exemptions from the Requirement for a Licence) Order (Northern Ireland) 2013[43], both licensees and exempt generators have to comply with the NIE Networks Distribution code[44] and if appropriate the SONI grid code.

40 https://www.legislation.gov.uk/nisr/2012/381/made/data.pdf
41 https://www.nienetworks.co.uk/help-advice/faqs/generation-connections/fit-inform-process
42 Close geographic region is the area within which the premises where more than one micro-generator installation planned by the same organisation (i.e. installer) are within 500m of each other.
43 https://www.legislation.gov.uk/nisr/2013/93/contents/made
44 https://www.NIE Networksetworks.co.uk/documents/d-code/distribution_code_issue_5_april_2019.aspx

How is a connection provided?

3.15. Where a customer (demand or generation) requests a connection to the distribution network, NIE Networks has a duty to provide an offer for a connection under Article 19 of the Electricity (Northern Ireland) Order 1992. This is backed up by its Licence under Condition 30 (NIE Networks' Distribution Licence). SONI must also do so under Condition 25 of its Licence (SONI Transmission Licence) in respect of requests for connection to the transmission system. But there are notable exceptions. For example, under Article 21 of the Electricity (Northern Ireland) Order 1992, NIE Networks does not have to make a connection where there is a lack of network capacity, where health and safety issues may arise, or for circumstances which are beyond their control.

3.16. When NIE Networks and SONI make a connection offer, they must do so in certain ways, as required by their Licences. In particular, they must:

1. Not unduly discriminate between any persons or class or classes of persons when making an offer, under Condition 15 of their Licenses.

2. Provide certain information for carrying out the works required for the connection offer to be made, and the charges to be paid by the applicant, under Condition 30 (NIE Networks) and Condition 25 (SONI).

3. Must make an offer within 3 months of receiving the information from the customer under Condition 30 (NIE Networks) and Condition 25 (SONI). Where requested by NIE Networks or SONI, UR can offer extensions beyond the 3-month period, where appropriate.

3.17. ESQCR specifies the safety standards which are aimed at protecting the general public and consumers from danger. Where a new or altered

connection is proposed, then the connecting customer must seek consent from NIE Networks under Regulation 26(1) of the ESQCR before making or altering the distribution connection.

3.18. Where there is no physical change to the network needed to accommodate the changes proposed by a customer, and so a new or altered connection has not taken place, and so the customer's equipment is simply operating in parallel with the network, a customer may still have to agree specific requirements for generation connections with NIE Networks under Paragraph 23(1)(d) of the ESQCR, depending on whether certain circumstances are met under Paragraph 23(2).

3.19. Once a connection offer is made by NIE Networks, and has been accepted by the connectee, the connectee will enter into a connection agreement with NIE Networks. The connection agreement requires customers to notify NIE Networks of changes to demand or supply behind the meter. NIE Networks set out the standard connection's terms and conditions for low voltage connections[45] and high voltage connection agreements[46]. It is a requirement that all customers connected to the distribution network have a connection agreement in place with NIE Networks. NIE Networks' Standard Connection Terms and Conditions applies to all customers (domestic and non-domestic) supplied at less than 650 volts through the agreement they enter into with their selected electricity supplier[47].

3.20. Any user seeking a connection (or a modification to an existing connection) to the NI transmission system must enter into a connection agreement with SONI. The Connection Agreement will specify the capacity and characteristics of the equipment which may be connected to the Transmission System. SONI has published an internal policy[48] explaining the process for making an

45 https://www.NIE Networksetworks.co.uk/lvtsandcs
46 https://www.NIE Networksetworks.co.uk/documents/market-services/hv-connection-agreement.aspx
47 https://www.nienetworks.co.uk/market-services/connection-agreements
48 https://www.soni.ltd.uk/media/documents/Customers/Connections/SONI-Connections-Policy-Effective-1-February-2018.pdf

application to connect to the transmission system, this is accompanied by an explanatory note[49].

Contestable and non-contestable connections

3.21. NI customers have a choice of who builds some in elements of their connection works, these are known as “contestable works”. Non-contestable activities are elements of connection works that can only be carried out by NIE Networks. Contestable works can be carried out by NIE Networks or by an accredited Independent Connections Provider (**ICP**). Therefore, with contestable elements of connections, customers in NI have a choice about who carries out certain parts of their connection. Further details on current arrangements for contestable works at distribution level can be found in Section 9 of NIE Networks’ Statement of Connection Charges[50] and in relation to transmission, in Section 2 of SONI’s Transmission Connection Charging Methodology Statement[51].

3.22. In October 2022 works to introduce further contestability for works in low voltage final connections at distribution level have been introduced. This was progressed by the Contestability Working Group[52].

49 https://www.soni.ltd.uk/site-files/library/Explanatory-Note-to-accompany-SONI-Connections-Policy.pdf
50 https://www.nienetworks.co.uk/statementofcharges
51 https://www.soni.ltd.uk/media/SONI-Transmission-Connection-Charging-Methodology-Statement-Effective-1-Sept-2016-Approved-by-UR.pdf
52 https://www.uregni.gov.uk/contestability-working-group

4. Connection charging regimes

4.1. NIE Networks and SONI are allowed to charge for new, or alteration to existing, connections requested by customers. Under Condition 32 of NIE Networks' Distribution Licence and Condition 30 of SONI's Transmission Licence, both NIE Networks and SONI must have, and maintain, a charging methodology. Both NIE Networks and SONI's licenses highlight that these statements shall be in such form and shall contain such detail necessary to enable any person to make a reasonable estimate of the charges. In practice, UR approve both statements[53]. NIE Networks, SONI and affected parties may propose modifications to these charges.

4.2. Connection charges typically comprise three elements:

1. Cost of the connection asset[54] that is used only by the customer.[55]

2. A proportion of the cost of reinforcing the network. Reinforcement is investment made by the network company to ensure there is sufficient capacity to allow electricity to travel safely and reliably along our electricity wires. If a customer connects to the distribution network (230V, 400V, 11kV and 33kv), then it must pay for reinforcement that its connection request will require at the voltage level it is connecting to and one voltage level above. A typical domestic customer will connect at low voltage (LV) and therefore must pay for any necessary reinforcements up to and including the 11KV level, while a customer connecting at medium voltage (11kV and 33 kV) must pay for reinforcements up to, and including, the transmission system at 110kV. If a customer connects to the transmission system, then it only pays for reinforcement at transmission.

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53 By virtue of Condition 32 of NIE Network's Licence, NIE Networks is required to prepare a statement approved by the UR setting out the basis upon which charges will be made for connection to the Distribution System and this statement is published to meet that obligation. This statement is required to be in a form and to contain detail as shall be necessary to enable any person to make a reasonable estimate of the charges to which it would become liable for the provision of a connection to the Distribution System.

54 The cost of the connection asset i.e. the wires and equipment that are used only to connect the specific customer to the nearest point of the NIE network ("connection assets")

55 This cost can be contestable or non contestable.

3. Conditions 5-7 of the Electricity (Connection Charges) Regulations (Northern Ireland) 1992[56] set out the conditions in relation to entitlement to recover amounts in respect of expenses, obligations to recover amounts in respect of expenses and payments to eligible persons. Under the current legislation, persons who own or occupy "domestic premises", and who paid their supplier for the cost of making a connection to their domestic premises, are "eligible persons" for a partial re-imbursement or rebate on the "relevant expenses" excluding "administrative expenses" for any shared assets regarding new connections provided the connection works are undertaken within a "prescribed period" from the "initial contributor's" connection. The "relevant period" within Regulation 4 prescribes a period of five years. The 1992 Regulations do not provide for those costs which are incurred by an ICP in developing infrastructure which is subsequently adopted or utilised by NIE Networks to be subject to the rebate provisions. That is, where relevant assets to accommodate a domestic connection are constructed by an ICP and paid for by the customer, those costs cannot be rebated under the relevant provisions of the 1992 Regulations. The only costs that are subject to the rebate provisions are the costs incurred by NIE Networks (i.e. for the non-contestable element of the domestic connection) in circumstances where the assets are used for a subsequent connection within a 5-year period.

4.3. Where a new User connects to the All-Island Transmission Networks by making use of existing Connection Assets which have been funded by an existing User(s) who connected within the preceding ten years the new User will be charged a proportion of the value of the shared Connection Assets, calculated in accordance with subparagraph 7.3 of SONI's Transmission Connection Charging Methodology Statement[57]. If the existing User(s) connected within the preceding ten years then the existing User(s) will be entitled to receive a partial rebate of the original connection charge from

56 https://www.legislation.gov.uk/nisr/1992/119/pdfs/nisr_19920119_en.pdf
57 https://www.soni.ltd.uk/media/documents/SONI-TCCMS-1-April-2019.pdf

SONI, calculated in accordance with sub-paragraph 7.3 of the statement.

4.4. Generally, the cost of a connection will be higher, the greater the size of the connection, the further the distance it is from the network, and if it is installed in a location where capacity is scarce (and vice versa). The cost can also depend on local conditions and the amount of reinforcement needed to accommodate the connection.

4.5. Where reinforcement is needed at multiple voltage levels above the connection, other network consumers may also have to pay a proportion of the cost of reinforcing the higher voltage network, in addition to that paid by the connecting customer. These costs are initially paid for by NIE Networks as the electricity asset owner of the transmission and distribution infrastructure in NI. This investment by NIE Networks is then recovered from wider consumers' bills (75%) and from generators (25%) through Distribution (**DUoS**) or Transmission (**TUoS**) Use of System charges over the life of the asset.[58]

4.6. As previously highlighted, the Energy (Northern Ireland) Order 2003 sets out that the principal objective of the Department and the Utility Regulator in relation to electricity is to "*protect the interests of consumers of electricity supply by authorised suppliers…*". Therefore, while UR and DfE want charges to connecting customers to be fair, we also must ensure we protect the short and long term interests of consumers, so any potential charging changes must be justified as being in the interests of consumers who will pay for it. Those interests are described in more detail in the legislation, and the things which UR must take into account when assessing the interests of NI electricity consumers. They are not limited solely to electricity costs.

58 Transmission generators will pay a proportion of this on an All-Island basis through locational use of system charges, which are calculated annually.

How the current charging regime could evolve in NI

4.7. When considering the connection charging arrangements, it is important to consider the up-front connection costs, the on-going costs and the impact on the wider customer base. Connection charging regimes can be described as having deep, partially deep, shallow-ish or shallow boundaries.

- Shallow Boundary: the customer is required to cover the costs of the connection asset **only** (the new assets built from the customer's premises to the existing point on the electricity network to which the customer will be connected). Socialised costs cover the remaining reinforcement costs, and these are repaid through the network charges by electricity consumers.
- Shallow-ish Boundary: the customer is required to cover the costs of the asset and **a portion** of the cost to reinforce the network needed to facilitate their connection (reinforcement required at connection voltage). Socialised costs cover the remaining portion of the reinforcement costs.
- Deep Boundary: the customer is required to cover the costs of the asset and **all** of the cost to reinforce the network to facilitate their connection.
- Partially Deep Boundary: The current connection boundary in NI can be describes as partially deep, which is further explained below.

Current connection charging arrangements in NI

4.8. At present in NI a customer connecting to the distribution system is required, as set out in 4.1 above, to pay for the assets necessary to:

- Connect the customer to the distribution system (connection asset);
- Reinforce the distribution system at the connection voltage level and one voltage level above; therefore in the case of a customer connecting at 33kV, if needed, they will pay for the reinforcement at 33kV and to reinforce the transmission system at 110k.

4.9. The NI connection policy can therefore be described as 'partially deep'. The exact definition of a connection asset is defined in Section 8 of the Statement of Charges for Connection to the Northern Ireland Distribution System.

4.10. Any reinforcement costs due to connections that are not covered by the connectee are paid for by NIE Networks. The value of these assets is added onto NIE Networks' regulatory asset base (**RAB**), on which NIE Networks will get a return on for the lifetime of the asset. The return paid on the RAB is to repay the money borrowed to build the asset initially, pay any interest on borrowing the money, and earn NIE Networks a return or profit on the investment[59]. The costs for these assets are met by all customers generally under the general 'Use of System' charges paid as part of electricity unit costs. For illustrative purposes, an example calculation is, if it were to cost £100 million to reinforce a section of the network. The investment + return (where rate of return is 4%) over 40 years[60] (typical lifetime of the asset), in real terms would cost NI consumers approximately £172 million, or £4.3 million per year, or approximately £5.00 per customer per year.

59 As set out in Condition 32(7)(b) of NIE Networks Licence highlights "Connection charges for those items referred to in paragraph 6 shall be set at a level which will enable the Licensee to recover: a reasonable rate of return on the capital represented by such costs". Annex 2 of NIE Networks Licence enables a reasonable return on their asset base.

60 All energy consumers in NI will be paying a return on the Weighted Average Cost of Capital (WACC) to NIE Networks over the next 40 years, through DuoS and TUoS charges, increasing the unit cost of electricity.

5. Scope of the Connection Review

5.1. The CfE is opened-ended. Respondents may express a view on any aspect on the onshore connections framework.

5.2. We have identified the connections charging regime and the current degree of socialisation as one issue. In relation to calls for increased socialisation of connection costs, our view is that 'do nothing' should be an option as we have not yet seen the evidence base for change.

5.3. Also, within the wider connections framework we are aware of other issues which may affect the connection of renewables such as connection timelines, planning permission within the connection process and whether to take a plan led or continue with developer led approach to future connection developments. Below we begin to explore each of these connection areas, and we are grateful for any evidence to be provided in relation to the questions we have posed.

5.4. The open-ended approach to the CfE may mean that respondents will raise issues that UR and DfE will not immediately be able to address under the current legislative framework. We recognise that the legislative framework for connections may require updating to underpin the Energy Strategy into the future. However, the review will assist DfE to assess the scope for legislative change that may be required.

5.5. While UR and DfE are accessible to having a wide-open scope as part of the connection charging review, there are some areas of connections that fall outside of the scope. These areas include:

- Offshore connections- the development of offshore connections is part of its own separate project being facilitated through DfE's Offshore Renewable Energy Action Plan (OREAP)[61].
- The Standard Connection Charge[62] associated with the connection of 12 or

61 https://www.economy-ni.gov.uk/news/department-economy-and-crown-estate-publish-statement-intent

62 The standard connection charge is defined as the charge levied where a customer wishes to connect a new housing development with 12 or more individually serviced Domestic Premises, or to extend an existing development of fewer Domestic Premises.

more individually serviced Domestic Premises. This will also be out of scope of this review; UR have requested that NIE Networks consult on this separately.

Q3. Do you agree with our proposed scope in relation to this connection review, this includes:

- Are there other issues which you consider we should take into account? If so, please explain why.
- Are there any connection areas we should remove from the scope of our review? If so, please explain why.

Connection Charging Boundary

5.6. UR and DFE would like to explore the cases for and against potentially moving to a more “shallow” connection charging boundary for reinforcement costs associated with connections, while also looking at the costs and benefits of retaining the current connection framework in NI. Any further socialisation of connection costs would need to be done in line with the current/future NI tariff structure.

5.7. UR and DfE have identified 3 potential connections framework boundaries that will be considered in our review;

1. Remain as status quo (a partially deep boundary connection)
2. Move to a shallow-ish boundary connection for demand and/or generation connections.
3. Move to a shallow boundary connection for demand and/or generation connections.

5.8. The current charging methodology (partially deep charging boundary) already applies to demand and generation connections. Therefore, it is

prudent that this review also proposes to continue to cover demand and generation connections.

Remain as Status Quo – Partially Deep Connection Boundary

5.9. The first scenario considered is keeping the existing boundary as it is. This will provide a baseline against which the other options can be assessed. Therefore, in this instance, customers connecting to network, would continue pay for the cost of connection assets and reinforcement required at the connection voltage and one voltage level up.

5.10. The table below demonstrates a breakdown of the current charging methodology in NI.

Demand Connections	**Connection Charge (for the connecting customer)**	**Tariff Group (How the charge is recovered)**
Connection Boundary	A partially 'Deep' (Status Quo)	
• New connection assets	Fully chargeable to connectee	N/A
• **Reinforcement works** (at the point of connection)	Fully chargeable to connectee	N/A
• **Reinforcement works** (1 voltage level above point of connection)	Fully chargeable to connectee	N/A
• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable (costs are socialised)	Distribution Use of System (DUoS) Tariff

Generation Connections	**Partially Deep with the exception of clusters (Status Quo)**	
New connection assets	Fully chargeable to connectee	N/A
Reinforcement works (≤1 voltage level above point of connection)	Fully chargeable to connectee, but can be shared assets	N/A
Reinforcement works (>1 voltage level above point of connection)	Not chargeable (socialised)	Transmission Use of System (TUoS) Tariff

Q4. Do you consider the current 'partially deep' connection boundary in NI appropriate? Please explain your rationale further and provide evidence.

Shallow Boundary Connection for Demand and/or Generation connections

5.11. Under a shallow connection boundary, the cost of all of the connecting user's extension assets will be paid for by the connecting user, while the cost of any network reinforcement will be recovered from all existing customers through network charges.

5.12. The table below demonstrates a shallow boundary connection for demand and generation connections.

5.13. Reinforcement costs **not** covered by the connectee, but paid for by NIE Networks, are added to NIE Networks' regulatory asset base (**RAB**), in which NIE Networks will get a return for the economic lifetime of the asset. The reinforcement costs are met by all customers, under 'Use of System' charges, these are highlighted in the table below as Distribution Use of System Tariffs or Transmission Use of System Tariffs.

Demand Connections	**Connection Charge (for the connecting customer)**	**Tariff Group**

Connection Boundary	**Shallow**	
• New connection assets	Fully chargeable to connectee	N/A
• Reinforcement works (at the point of connection)	Not chargeable to connectee	Distribution Use of System (DUoS) Tariff
• **Reinforcement works** (1 voltage level above point of connection)	Not chargeable to connectee	Distribution Use of System (DUoS) Tariff
• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable to connectee	Distribution Use of System (DUoS) Tariff
Generation Connections		
Connection Boundary	**Shallow**	
• New connection assets	Fully chargeable to connectee	N/A
• Reinforcement works (at the point of connection)	Not chargeable connectee	Either TUoS or DUoS, dependant on connection size
• **Reinforcement works** (1 voltage level above point of connection)	Not chargeable connectee	Transmission Use of System (TUoS) Tariff
• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable connectee	Transmission Use of System (TUoS) Tariff

Q5. Do you consider a shallow connection boundary to be appropriate in the NI context? Please explain your rationale further and provide evidence.

If so, which of the following connection types should have a shallow connection boundary;

-Demand only

-Generation only

-Demand and Generation

-An alternate connection type (for example Domestic/Non-Domestic connections)

Please explain your rationale further.

A shallow-ish connection boundary for Demand and/or Generation connections

5.14. A shallow-ish boundary reduces, but keeps some of, the contribution that is required from connecting customers to any reinforcement costs needed. This means that in general, the connecting customer pays for their connection assets and reinforcement required at the same voltage as the point of connection, with the remaining reinforcement recovered from all electricity consumers through use of system charges. Reinforcement costs that are not covered by the connectee are socialised down onto NIE Networks' regulatory asset base (RAB), on which NIE Networks will get a return for the lifetime of the asset.

5.15. The table below demonstrates shallow-ish boundary connection for demand and generation connections.

Demand Connections	**Connection Charge (for the connecting customer)**	**Tariff Group**
Connection Boundary	**Shallow-ish**	

• New connection assets	Fully chargeable to connectee	N/A
• Reinforcement works (at the voltage level of connection)	Fully chargeable to connectee	N/A
• **Reinforcement works** (1 voltage level above point of connection)	Not chargeable (socialised)	Distribution Use of System (DUoS) Tariff
• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable (socialised)	Distribution Use of System (DUoS) Tariff
Generation Connections		
Connection Boundary	**Shallow-ish**	
• New connection assets	Fully chargeable to connectee	N/A
• Reinforcement works (at the point of connection)	Fully chargeable to connectee	N/A
• **Reinforcement works** (1 voltage level above point of connection)	Not chargeable (socialised)	Either TUoS or DUoS, dependant on connection size

• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable (socialised)	Transmission Use of System (TUoS) Tariff

Q6. Do you consider a shallow-ish boundary to be appropriate in the NI context? Please explain your rationale further and provide evidence.

If so, which of the following connection types should have a shallow-ish connection boundary;

-Demand only

-Generation only

-Demand and Generation (for example Domestic/Non-Domestic connections)

-An alternate connection type

Please explain your rationale further.

Q7. Do you believe that moving to a more shallow connection boundary in NI will deliver NI renewable targets that otherwise would not be met? Please provide evidence to demonstrate your answer.

Q8. Please provide evidence on the potential impacts on energy affordability in NI if reinforcement costs were socialised further? What would the impact on energy affordability be in NI if household bills were to increase per annum by;

1-3%

4-7%

7-10%

Additional connection boundary information requirements

5.16. From discussions with NIE Networks the UR is aware that further work has already been undertaken looking at the impact of moving to a shallower boundary than currently in NI, including looking at the impact on reinforcement works.

5.17. In its RP7 business plan, NIE Networks have sought allowances for network reinforcement during the RP7 price control period. These would be paid for by all consumers like all normal network development plans. The need for any expenditure would need to be supported by evidence from NIE Networks. Any submission (including accompanying evidence) from NIE Networks would be reviewed by UR before any decisions on RP7 allowances are made.

5.18. In order to make any potential changes to the current connection framework policy in NI, it is essential to know the potential costs to NI consumers. The UR will not make regulatory decisions in the absence of being provided with the requisite forecasts and information.

5.19. While the charging element of connections is a key area of focus within this review, we are aware that this Call for Evidence could result in connections issues emerging not only from the potential socialisation of connections, but various other aspects of the overall connections framework, for example in relation to the connection process in NI. We set out below some connection issues we are aware of; however, we understand there may be other issues and we welcome responses in identifying these issues and providing any relevant evidence to demonstrate these further.

Q9. Can NIE Networks differentiate between RP6 allowances, RP7 business plan connection requests and how these differentiate and have been factored into the analysis that has been done on potential reinforcement connection costs analysis NIE Networks have completed?

5.20. As demonstrated in Section 1, developers connecting to the network have sought large scale connections in locations desirable for them which then triggers as needed, an assessment of the network's ability to cope. Where system solutions are needed to accommodate these connections, these will typically take longer.

5.21. A possible option for the future is to take a more plan led approach to connections. The aim of plan led approach would be a more managed, co-ordinated approach to connections in NI. This approach could lay down the future connection's framework for development in NI which would have more certainty and predictability. However, there would be many factors to consider in taking a plan led approach, such as the siting of generation will need to be in locationally beneficial areas (for example thermal generation sites are typically located close to the coast as they rely on a cooling system). We would like to hear stakeholder's views on the plan led versus developer led approach.

Q10. Do you think that a developer led or plan led is the best approach for the future development of connections in NI? Please explain your answer.

Connection Timeframes

5.22. Previously, we highlighted that SONI and NIE Networks must make a connection offer as soon as practicable, and SONI and NIE Networks licences further stipulate that they must do so no later than 3 months from receiving the information from the customer. With the influx of applications for new and modified connections expected, there is a strong possibility that this 3-month period for NIE Networks and SONI to provide an offer could be unrealistic. From our experience, it is evident there are numerous examples whereby connections are more complex and impact the transmission system, giving rise to significant system issues, which in turn

add to the difficulty in meeting the current 3-month timescale for an offer to be provided.

5.23. In order to make any changes to connection timescales, we may need to update the relevant licence.

Q11. Do you think the current 3- month timeframe for SONI and NIE Networks to issue a connection offer is appropriate? Please explain your answer.

Planning permission requirements in connections

5.24. Up until August 2015 in NI, prior to the outcome of a dispute[63], NIE Networks' policy was to require a connection applicant to have obtained planning permission prior to applying for a grid connection offer. One could argue that this was an effective way of managing the connection queue and prevented capacity being held unused for periods while others could actively use that capacity.[64] It ensured that only connectees who were further ahead in the development process would be permitted to receive a connection offer and therefore assessed first.

5.25. However, the decision from the dispute was that NIE Networks did not require a connectee to have obtained planning permission in order to apply for a grid connection or obtain an offer from NIE Networks or SONI. Getting assessed for a grid connection occurs on a first come, first served basis and this has led to a larger, more complex and more uncertain connection queue.

63 https://www.uregni.gov.uk/files/uregni/media-files/DET-572_Determination_of_Solar_Ventures_connection_dispute_with_NIE.pdf
64 Capacity hoarding consists of the acquisition of available capacity without using it or without using it effectively

5.26. A first come first served connection process results in instances whereby connection projects which are closer to being ready to connect, get held up from progressing or proceeding by projects who could potentially be a number of years away from connection (for example these projects may take longer to connect as they do not have planning permission and in turn, hoard capacity).

Q12. If our legislation facilitated it, should obtaining planning permission be a pre-requisite in order to receive a grid connection? Please explain your answer.

Q13. If our legislation facilitated it, do respondents consider any other issues associated with the current queue process? Or that a different approach to managing the connection queue, would result in quicker connections? If so, what would that be? Are there any lessons to be learned from other jurisdictions?

Q14. Do you have any other information relevant to the subject matter of this Call for Evidence that you think we should consider?

Q15. Please list any connection issues you have raised in order of priority. Please explain your reasoning behind your priority.

6. Timelines and next steps

Timeline

6.1. After reviewing the responses to this CfE, we will publish a 'Next Steps' paper in December 2023, this will summarise the responses arising from the call for evidence, as well as indicate which areas of connections we will prioritise for change based on the evidence received.

6.2. We will also indicate how we propose to take these issues forward, including any further consultation that may be needed with stakeholders and the potential timescales for this work. A review of the legislation will occur in parallel. This work will fall under the remit of DfE and will have a separate timetable.

6.3. As we have previously highlighted, it would be unlikely that any future changes would take place before the NIE Networks' RP7 price control period.

How to provide feedback

6.4. The deadline for responses to the queries raised in this paper is **29 September 2023**.

6.5. The preference would be for responses to be submitted by e-mail to kenny.mcpartland@uregni.gov.uk, jody.oboyle@uregni.gov.uk and leo.strawbridge@economy-ni.gov.uk. .

6.6. We have posed some specific questions throughout this call for evidence, and we would appreciate responses with feedback on these questions. These questions have been listed in Annex 2. We also welcome general feedback on any aspect of this paper.

6.7. Individual respondents may ask for their responses (in whole or in part) not to be published, or that their identity should be withheld from public disclosure. Where either of these is the case, we will also ask respondents to supply the redacted version of the response that can be published.

6.8. DfE and UR are required to comply with the Freedom of Information Act (FOIA). The effect of FOIA may be that certain recorded information contained in call for evidence responses is required to be put into the public domain. Hence it is now possible that all responses made to call for evidence will be discoverable under FOIA, even if respondents ask us to treat responses as confidential. It is therefore important that respondents take account of this and in particular, if asking UR to treat responses as confidential, respondents should specify why they consider the information in question should be treated as such and the basis under the FOIA for non-disclosure.

6.9. This paper is available in alternative formats such as audio, Braille etc. If an alternative format is required, please contact us and we will be happy to assist.

Annex 1 - NI connection charging versus GB and RoI

Northern Ireland has a different connection charging system to our two closest neighbours. Both GB and RoI have shallower connection charging policies, and GB has recently moved to an almost completely shallow connection charging policy for demand connections and shallow-ish for generation connections. The differences to the Northern Ireland policy are set out below.

Current connection charging arrangements in RoI

In ROI, a Connection Charge is levied in respect of the works required to connect a demand or generation customer to the system in accordance with current CER approved shallow connection policy.

EirGrid is required to identify the Least Cost Chargeable (LCC) connection[65]. This is the least cost way of physically connecting to the transmission system (i.e. the least cost shallow connection works).

For system reasons, EirGrid may choose an alternative connection method. If this is the case, the customer will only be charged for the LCC connection. Alternatively, a customer may request a connection method other than the LCC. If this customer preferred connection method is acceptable to EirGrid, the customer will be liable for 100% of the costs of that connection method, including in additional deep reinforcements.

For Generation Customers: If the LCC is being built, the generator must pay 100% of the LCC. Any deep reinforcements required to facilitate the connection are typically not charged to the generator.
For Demand Connections: If the LCC is being built, the demand customer must pay 50% of the LCC. Any deep reinforcements required to facilitate the connection are typically not charged to the customer.

For clarity, should the customer request a connection method other than the LCC, if this customer preferred connection is acceptable to EirGrid, the customer will be liable for 100% of the costs of that connection method. If the customer

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65 https://www.eirgridgroup.com/site-files/library/EirGrid/JointTSO_DSOGroupProcessingApproachChargingandRebatingPrinciples.pdf (Section 2.1)

preferred connection method results in additional deep reinforcements, the customer will also pay for these.

Transmission Generator and Demand customers are entitled to build or procure large elements of their own shallow connections in line with the Contestability of Connection Assets Paper[66] approved by the CER. However, there will still be works carried out by EirGrid such as design approval, supervision, commissioning and final connection, for which connection charges will be payable.

On-Going Service Charges (OGSC) are levied on an annual basis for the operation and maintenance of transmission shallow connection assets required to connect a customer. As of 01 January 2021, following engagement with the Commission for Regulation of Utilities (CRU), EirGrid will no longer be charging On-Going Service Charges (OGSC) for the maintenance of transmission shallow connection assets. Alternatively, these costs will be recovered through the standard maintenance arrangements under Transmission Use of System charges.

We are aware of CRU's Call for Evidence[67] in May 2023 on "Electricity Generation and System Services Connection Policy" which is asking for evidence on how new policy will help meet climate action targets whilst protecting the consumer. This new policy will replace ROI's Enduring Connection Policy[68]. We will continue to monitor this Call for Evidence and subsequent developments in CRU's process.

Current connection charging arrangements in GB

In 2018 Ofgem set up an 'Access and Forward-Looking Task Force' to review and recommend new arrangements in strategic charging topics. The aim of this review was to "*to ensure electricity Networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills in general*".

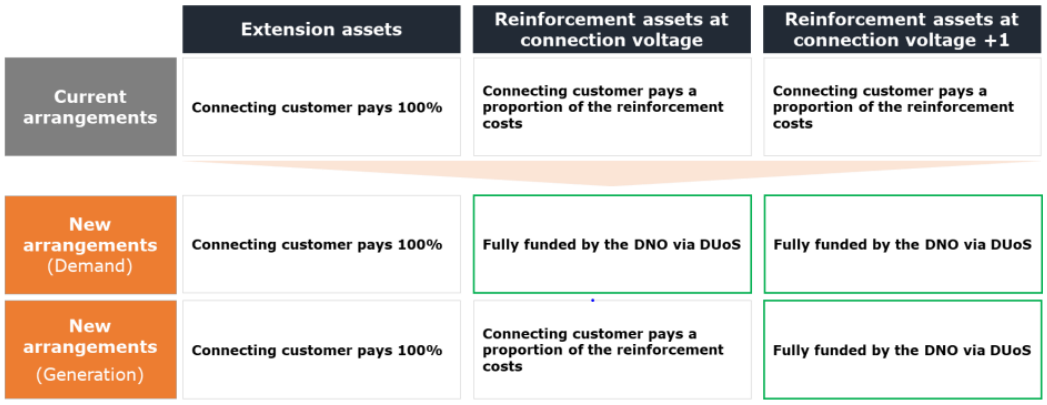
On 3 May 2022 Ofgem published their decision[69] of their review. Ofgem have;

- Removed the contribution to reinforcement for demand connections by introducing a 'fully shallow' connection charging boundary. This will

66 https://www.eirgridgroup.com/site-files/library/EirGrid/Contestability-paper-Oct-2007.pdf
67 https://www.cru.ie/publications/27500/
68 https://www.eirgridgroup.com/customer-and-industry/becoming-a-customer/generator-connections/enduring-connection-polic/
69 https://www.Ofgem.gov.uk/publications/access-and-forward-looking-charges-significant-code-review-decision-and-direction

involve connecting customers paying for extension assets[70] only and the rest of the costs being socialised down to GB electricity users' bills.

- Reduced the contribution to reinforcement for generation connections by introducing a 'shallow-ish' connection charging boundary. This will involve the connecting customer paying for extension assets and a contribution towards reinforcement at the voltage level at point of connection and again the rest of the costs being socialised to GB consumer's bills.
- Ofgem's modelling predicts the impact on DUoS bill payers of moving from their current charging depth to this 'hybrid' approach will be a Net Present Value cost of £380m in additional network costs over 17 years for GB customers[71], and a corresponding reduction in individual connectees' costs.



Source: Ofgem

Ofgem have said it will retain a high-cost cap[72], this is a threshold above which connecting generation customers are required to pay for any reinforcement costs in full, costs below this threshold are socialised. The cap is currently set at £200/kW. It will also introduce a similar cap for demand customers set at £1,720/kVA. This is a threshold above which the connecting customer must pay

70 These are described as Connection Assets in this paper.
71 Final Impact Assessment (Section 2.4)
72https://www.Ofgem.gov.uk/sites/default/files/2022-05/Appendix%201%20%E2%80%93%20Demand%20HCC%20development%20methodology1651572982904.pdf

in full for any wider network reinforcement costs driven by their connection.

UR and DfE recognise that there have been some recent questions raised by the Welsh Affairs Committee concerning BEIS comments in relation to Ofgem's connections decision. In August 2022, BEIS published the Electricity Networks Strategic Framework[73] (**ENSF**). The ENSF referred to Ofgem's decision, to reduce the burden of costs on connecting customers "by moving more of the reinforcement costs to the network charges paid by all electricity consumers in the area" (i.e. the area served by the connecting customer's DNO).

The Welsh Affairs Committee have stated that "we are encouraged to see that the UK Government recognises that grid connection costs can be prohibitively high for developers. However, we are concerned by the decision to move more of the reinforcement costs to the network charges paid by "all electricity consumers in the area". It is not equitable that grid reinforcement costs should be shared by consumers in an area because this would create a higher burden for rural households and businesses and those in areas which historically lack existing grid infrastructure. We ask Ofgem and the UK Government to define what is meant by the phrase "in the area" and to explain how they will ensure that rural or isolated communities will not be unduly burdened". We understand that the reference to "all electricity consumers in the area" meant all of the electricity consumers in the area served by the particular DNO. That is consistent with equitable charging methodologies where there are multiple DNOs in one country. Each will have different charges for the electricity consumers in their area. The issue is not relevant in NI as there is only one DSO in NI, so the connections charging policy would apply to all electricity consumers in NI.

Article 12 of The Energy Order (Northern Ireland) 2003 sets out the principal objective and general duties of the Department (DfE) and the Authority (UR) in relation to electricity. One of the issues which DfE and UR are required to have regard to is "the need to protect the interests of;

- individuals who are disabled or chronically sick;
- individuals of pensionable age;
- individuals with low incomes; and
- individuals residing in rural areas;

Similar to ROI, we will continue to monitor updates to the connection process and

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73 https://www.gov.uk/government/publications/electricity-networks-strategic-framework

procedures in GB.

We are aware of Ofgem's "Open letter on future reform to the electricity connections process"[74] published in May 2023, where Ofgem set out their core objective for reform and plans to review connection arrangements, alongside government and industry. Throughout our own connections review, we will continue to monitor the potential connection reforms in GB.

Comparison of NI connection charging arrangements versus those in GB and RoI

Overall, the actual costs for NIE Networks to construct connections in NI are comparable to those incurred costs in GB and RoI. However, how the overall proportion of the costs which are charged to the connecting customer and the wider customer base are different.

All energy consumers in RoI and GB will be paying a return on the Weighted Average Cost of Capital (**WACC**) to the network company over the next 40 years through their DUoS and TUoS charges increasing the unit cost of electricity, NI energy consumers currently pay lower DUoS and TUoS charges, as more of the connection reinforcement cost is covered by the connectees.

Achieving the targets set out in the Energy Strategy will bring many benefits to NI electricity customers through affordable, net zero carbon energy and in turn enabling environmental, economic and social benefits. We must find the right balance in achieving these benefits, while ensuring NI electricity customers are protected through a just transition. To change the current NI method of connection by increasing the level of socialisation, will result in increasing the proportion of the cost of connections to all electricity customers. In turn, this will reduce the costs for those connecting or modifying a connection to the network.

The tables below provide a comparison between the current NI and ROI connections framework alongside the proposed updated GB framework which was published in April 2023. These tables are split into demand and generation connections.

74 https://www.ofgem.gov.uk/publications/open-letter-future-reform-electricity-connections-process

	NIE Networks	GB DNOs as of April 2023 (e.g. WPD)	ESB Networks
	(UREGNI, NI)	(Ofgem, GB)	(CRU, ROI)
Demand Connection	Partially Deep	Shallow	Shallow-ish
• **New connection assets**	Fully chargeable	Fully chargeable *	Part chargeable
• **Reinforcement works** (≤1 voltage) level above point of connection)	Fully chargeable	Not chargeable	Part chargeable
• **Reinforcement works** (>1 voltage level above point of connection)	Not chargeable	Not chargeable	Part chargeable

	NIE Networks	GB DNOs as of April 2023 (e.g. WPD)	ESB Networks
	(UREGNI, NI)	(Ofgem, GB)	(CRU, ROI)
Generation Connection	Partially Deep **with the exception of clusters	Shallow-ish *	Deep***
New connection assets	Fully chargeable	Fully chargeable	Fully chargeable
Reinforcement works (<1 voltage level above point of connection)	Fully chargeable, but can be shared assets	Part chargeable	Fully chargeable
Reinforcement works (>1 voltage level above point of connection)	Not chargeable	Not chargeable	Part chargeable

* As demonstrated previously, Ofgem will retain a high cost cap for a threshold above which connecting generation and demand customers are required to pay for any reinforcement costs in full, costs below this threshold are socialised.

** Connection of the generator(s) through a new 110kV/33kV Cluster Substation – The charge for a generator to connect into a Cluster Substation is based on the proportion of the cost of the Cluster (based on Required Capacity) plus the full

cost of their unique Connection Assets. Any future connections to the cluster will also be charged a proportion of the cost of the shared assets. Shared assets being assets that are used by the customer and by one or more additional customers.

*** Charges for connection to the Shared Network shall be calculated and charged to a connecting generator on a per MW basis.

Annex 2 - Questions posed in the Call for Evidence

1. What are the risks and opportunities in relation to the development of micro grids and what issues do these raise for the connections framework in NI?

2. Do you agree with our guiding principles? Please expand your answer.

3. Do you agree with our proposed scope in relation to this connection review? this includes:
    - Are there other issues which you consider we should take into account. If so, please explain why
    - Are there any connection areas we should remove from the scope of our review? If so, please explain why

4. Do you consider the current ‘partially deep’ connection boundary in NI appropriate? Please explain your rationale further and provide evidence.

5. Do you consider a shallow connection boundary to be appropriate in the NI context? Please explain your rationale further and provide evidence.

    If so, which of the following connection types should have a shallow connection boundary;

    - Demand only
    - Generation only
    - Demand and Generation
    - An alternate connection type (for example Domestic/Non-Domestic connections)

    Please explain your rationale further.

6. Do you consider a shallow-ish boundary to be appropriate in the NI context? Please explain your rationale further and provide evidence.

    If so, which of the following connection types should have a shallow-ish connection boundary;

    - Demand only

- Generation only
- Demand and Generation (for example Domestic/Non-Domestic connections)
- An alternate connection type

Please explain your rationale further.

7. Do you believe that moving to a more shallow connection boundary in NI will deliver NI renewable targets that otherwise would not be met? Please provide evidence to demonstrate your answer.

8. Please provide evidence on the potential impacts on energy affordability in NI if reinforcement costs where socialised further? What would the impact on energy affordability be in NI if household bills where to increase per annum by;

- 1-3%
- 4-7%
- 7-10%
- > 10%

9. Can NIE Networks differentiate between RP6 allowances, RP7 business plan connection requests and how these differentiate and have been factored into the analysis that has been done on potential reinforcement connection costs analysis NIE Networks have completed?

10. Do you think that a developer led or plan led is the best approach for the future development of connections in NI? Please explain your answer.

11. Do you think the current 3-month timeframe for SONI and NIE Networks to issue a connection offer is appropriate? Please explain your answer.

12. If our legislation facilitated it, should obtaining planning permission be a pre-requisite in order to receive a grid connection? Please explain your answer.

13. If our legislation facilitated it, do respondents consider any other issues associated with the current queue process? Or that a different approach to managing the connection queue, would result in quicker connections? If so, what would that be? Are there any lessons to be learned from other jurisdictions?

14. Do you have any other information relevant to the subject matter of this Call for Evidence that you think we should consider?

15. Please list any connection issues you have raised in order of priority. Please explain your reasoning behind your priority.