

## Call for Evidence Response Template

In order to respond to this Call for Evidence, please complete the tables below.

You only need to answer the questions that are most relevant and important to you.

Respondent details	
Company / Organisation	NIE Networks
Type of organisation / Sector	Distribution System Operator in Electricity Industry
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## Response to Call for Evidence

### Drivers of change

**Topic:** Drivers of change

**Question number:** 1

**Question:** Which of the key drivers outlined present the largest impact for you or your organisation?

**Response:**

The Call for Evidence (CfE) has outlined five key drivers for change which the Utility Regulator (UR) considers have important implications for electricity tariffs:

- Distributed energy resources;
- Increasing popularity of electric vehicles;
- Development of battery technology;
- The emerging market for energy aggregators; and
- Increasing digitalisation and data usage.

Each of the drivers listed by the UR will have a significant impact on NIE Networks as the Distribution System Operator (DSO) in Northern Ireland (NI) and it is important to consider the combined impact of all drivers (including additional drivers that we have identified in our response to question two), rather than trying to identify which driver will have the largest impact on its own.

However, we note that the increasing popularity of electric vehicles (EVs) is likely to have the most significant impact on NIE Networks in terms of electricity use. The legislative ban on internal combustion engines (ICEs) will mean that a change in behaviour will eventually become necessary for the majority of consumers and will inevitably lead to significant increases in EVs which will impact NIE Networks in terms of volumes of electricity consumed and the profile of usage (i.e. the times of day that customers use electricity to charge their vehicles). EVs will be utilised by wide ranging customers from domestic customers charging at home, to businesses charging fleet vehicles and charging stations.

NIE Networks are responsible for operating a safe and efficient distribution network. We therefore need to be prepared for increasing electricity volumes and changing usage profiles, potentially resulting in greater peaks in usage to ensure that the network can manage the loads.

The current level of electric vehicles in NI is just over 4,000 as of September 2020<sup>1</sup>, with only 337 public charging points installed. By 2023 the UK government expects to see a high-powered charging hub at every motorway service area, installed by the private sector. This is backed up by investment of £950 million in future proofing grid capacity along motorways and key 'A' roads to prepare for a 100% uptake of zero emission cars and vans ahead of need. A similar approach is required in NI where currently the low level of public charging infrastructure is a significant barrier to the uptake of electric vehicles.

<sup>1</sup> EV Figures for Northern Ireland, Available: <https://evani.uk/ev-figures-for-ni-before-import/>

The Committee on Climate Change estimate that NI may require between 30 to 35 public rapid chargers on major roads and 800 to 950 public top-up chargers by 2050, while other research performed by Deloitte<sup>2</sup> suggests that fast and rapid charging infrastructure at the kerbside, destinations, urban charging hubs and motorway service areas could cope with an EV charge point ratio of 500:1 by 2030 which is the same rate as petrol pumps per car. NI has around 1.2 million licenced vehicles on the road as of the end of 2020. If a ratio of 500:1 is applied, 2,400 charge points would be required to cover the whole of NI. Regardless of the variation in the exact amount of charge points required, it is clear that a significant increase is required.

In the immediate term, developing an ultra-rapid charging hub infrastructure across NI would arguably have the biggest impact in terms of economic stimulus, due to the high investment costs and promotion of the electric vehicle sector. Almost twice as many EVs were sold in 2020 as there were in 2019, which is prompting calls for the need for more public charging infrastructure. An initial emphasis on the delivery of electric vehicle charging infrastructure is also required, especially to help revitalise areas which have suffered from poor transport infrastructure.

Whilst welcoming recent developments such as the Interreg funding for a quantity of rapid chargers in NI, and by ESB to upgrade the existing EV charging infrastructure, in the absence of other players NIE Networks is prepared to kick start the provision of electric vehicle charging infrastructure and finance the investment, if there is no viable market alternative. This would require approval from the Department for Infrastructure and agreement with the Utility Regulator on funding mechanisms.

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<sup>2</sup> Deloitte, The Opportunities Around Electric Vehicle Charge Points In The UK, Available: <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/energy-resources/deloitte-uk-electric-vechicles-WEB.pdf>

<b>Topic:</b> Drivers of change	<b>Question number:</b> 2	<b>Question:</b> In addition to the key drivers mentioned (distributed energy resources; increasing popularity of electric vehicles; development of battery technology; the emerging market for energy aggregators; and digitisation and data usage), are there any others that you consider to be a significant factor in affecting future electricity use?
<p><b>Response:</b></p> <p>In addition to the drivers mentioned by Utility Regulator (UR), the following points should be considered as key drivers in relation to future electricity use and therefore tariff reform.</p> <ol style="list-style-type: none"> <li>1. <u>Distribution Connection Charging Policy</u>  The charging policy for connection to NIE Networks' electricity distribution network is currently and will into the future, have a major impact on what customers connect to the electricity network, subsequently affecting future electricity usage.</li> </ol> <p>The current connection charging mechanism is deterring many domestic customers who are 'early adopters' from connecting low carbon technologies (LCTs). However, the risk of unaffordability for customers connecting to the network will become heightened further, as legislative changes (such as changes to building regulations) mandate the inclusion of LCTs in new build domestic properties. This is a particular problem in Northern Ireland (NI) since, unlike Great Britain (GB) and Republic of Ireland (RoI), the distribution connection charging policy requires the full connection charge, including network reinforcement (up to one voltage level up), to be levied directly on the connecting customer. By contrast, in RoI, customers only pay a proportion of the cost of connection and in GB customers pay upfront for new distribution network connecting assets but only a share of any necessary reinforcement of the upstream network. The remainder of reinforcement costs is socialised and recovered within network charges or through subsequent connections.</p> <p>Furthermore, Ofgem is currently considering reducing, or removing entirely, any network reinforcement costs included in charges applied to customers connecting LCTs. They have been assessing whether current connection charging arrangements are continuing to work in the best interests of consumers – especially in light of increased investment needed as we electrify heat and transport. Ofgem have recently published a consultation 'Access and Forward-looking Charges Significant Code Review: Consultation on Minded to Positions'<sup>3</sup> which states;</p> <p><i>'We think there are good arguments that the charging arrangements no longer provide an effective signal for network users and may actually slow down the roll-out of low carbon technologies across the energy system. We are therefore minded to change the connection charging arrangements. We propose reducing the contribution to reinforcement within the upfront connection charge for generation and removing it completely for demand. This comes at a cost, but we think this is the right balance between maximising benefits such as removing barriers (particularly for those where we think their ability to relocate in response to a connection charge signal is limited), and doing so at least cost to consumers generally'</i></p>		

<sup>3</sup> Ofgem Access and Forward-looking Charges Significant Code Review: Consultation on Minded to Positions, 30 June 2021: <https://www.ofgem.gov.uk/sites/default/files/2021-06/%281%29%20Ofgem%20Access%20SCR%20-%20Consultation%20on%20Minded%20to%20Positions.pdf>

This minded to position is indicating a further move towards shallower connection charges which could widen the gap in methodology with NI if our connection charge policy was to remain the same thus impacting further the competitiveness of NI.

Connection charges should be considered in the context of tariff reform, as is the case in GB's tariff reform. Changes to connections charges and the costs recovered under connection charges will have a direct impact on the charges that need to be recovered under Distribution Use of System (DUoS) charges. At a time when the connection of new LCTs should be welcomed, the current connection charging policy can be considered a barrier to entry for customers due to the high connection costs they would face in comparison to connecting in other jurisdictions. For example, to date, all enquiries made to NIE Networks from providers of rapid chargers for EVs have so far been abandoned as a result of the high cost of connection, as well as the reduced market for EV charging infrastructure in NI. From our analysis, one such enquiry for which the applicant was quoted c. £178,000 to connect to the network in NI would have an equivalent connection cost of c. £63,000 under the GB charging methodology. The applicant did not proceed with the investment.

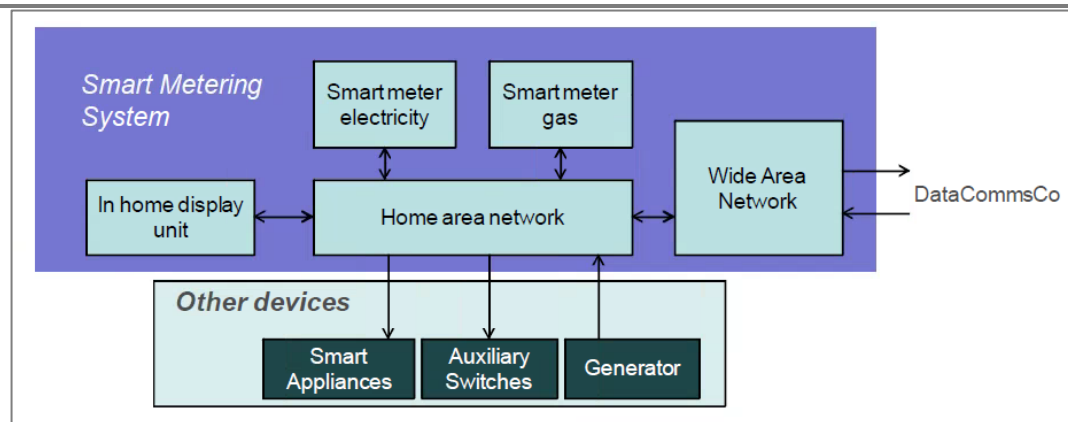
With the opportunity to grow demand, we consider the proposed changes to Connections Charging can be at least self-funding and if we do not consider the current approach against a backdrop of the forthcoming Energy Strategy, NI is at risk of not achieving the Energy Strategy targets, and the NI economy will not grow to the extent that it otherwise could have. As such, we would advocate for an urgent review of, and consultation on, the connection policy and distribution connection charging regulations in NI.

## 2. Smart meters

The energy transition will result in changes to how customers use electricity. This leads to a need for smart meters to assist in managing electricity use from NIE Networks perspective, as well as for the consumer.

There are significant benefits for the electricity network when smart meters are integrated into smart distribution systems. Such dynamic systems can better incorporate heat pumps, EVs and other green technologies into the network alongside distributed generation, for example by intelligent phasing of their operating times to better balance supply and demand. Smart metering data used in this way therefore not only helps consumers to accurately manage their usage and allows them to benefit through enhanced retail arrangements with electricity suppliers, but also provides utilities with better information (including outage and power quality data) which will act as a key enabler to future smart-cities and communities.

The ultimate aim is the creation of Smart homes:



The information provided by smart meters will help consumers to make more informed choices about their consumption, provide accurate and regular information on their energy usage, and minimise the need for estimated bills. Smart meters are an essential foundation to maximise the benefit of renewable generation capability and low carbon technologies, and offer consumers information and choice such as availing of cheaper energy at off-peak periods. Smart meters are also important to ensure protection of vulnerable customers to ensure they are treated fairly, have the opportunity to have access to energy data and make informed decisions about energy use and potentially have the ability to participate in new energy markets (possibly through an aggregator).

NIE Networks is ready to assist in a cost benefit analysis for a smart meter roll-out in conjunction with the DfE, UR, industry and stakeholders however would support the initiation of a trial of significant scale for smart meters as part of an integrated solutions for customers using low carbon technologies.

### 3. Electrification of heat

It is widely accepted that there will be increased use of heat pumps into the future. The Department for Economy's (DfE) consultation on policy options for Energy Strategy for Northern Ireland<sup>4</sup> (DfE Energy Strategy consultation) published in March 2021 states;

*'Heat pumps will play a role in the decarbonisation of heat, and we do not see any viable pathway to reach net zero carbon which does not use this technology.'*

This increase in the electrification of heat will drive increased electricity usage going forward and therefore should be considered as a significant factor in affecting future electricity use. Electrification of heat is likely to be less flexible than electric vehicle charging, and may therefore contribute towards peaks in electricity consumption, which could ultimately drive costly network reinforcement.

<sup>4</sup> DfE Energy Strategy for Northern Ireland – Consultation on Policy Options, March 2021: <https://www.economy-ni.gov.uk/sites/default/files/consultations/economy/energy-strategy-for-ni-consultation-on-policy-options.pdf>

#### 4. Allocation of costs

The energy transition will inevitably result in a change to the type of costs that NIE Networks incur in order to operate a safe and efficient network into the future, and result in changes to how and when customers use the distribution network. While the CfE discusses options for types of tariff, it does not cover the allocation of costs to types of charges or customer groups. NIE Networks would suggest consideration also be given to a review of how network costs are attributed to consumers to ensure that, with the changes on how customers use the networks, the costs attributed to different types of customers remain fair and proportionate. Tariff reform should provide protection to passive and vulnerable customers while enabling and incentivising innovation and efficient use of the networks. The allocation of costs is key to this aim.

Our DUoS tariffs are primarily volume based, with approximately 74% of distribution revenue recovered from unit (kWh based) charges. However, there are a number of potential issues with this volumetric approach which could prove problematic as we transition to net zero carbon.

Firstly, as more and more customers start self-generating, the volume of electricity they consume via the distribution network may reduce in aggregate; and so, under the current volume driven tariff arrangements, the contribution they make towards network costs may also reduce. The end result could be that a higher proportion of network costs are left to be recovered from customers who are more reliant on the electricity distribution network for meeting their electrical demands and this could be considered to be unfair.

A second issue, and one which may serve to counterbalance the above issue of reduced consumption via the distribution network, is that customers may end up consuming a much greater volume of electricity units to heat their homes and/or charge their electric vehicles. If their electrical demands are met only via the network, these customers would end up paying proportionately more towards network costs under the current volume-driven tariff arrangements than they did before and this, again, could be considered to be unfair.

Accordingly, NIE Networks would support a comprehensive review of network cost allocation led by the Utility Regulator, to address these issues.

We note that UR has also recently highlighted the importance of cost allocation in the Consumer research published on the energy transition<sup>5</sup> publication where they stated;

*'It is important to ensure that those consumers who are vulnerable are not left behind in the energy transition; and that costs are allocated appropriately and fairly.'*

In addition, the DfE Energy Strategy consultation refers to the importance of cost allocation where they state;

*'Appropriate tariff structure for EV charging will need to be in place, particularly the fair allocation of costs to ensure non-EV users are not paying for those who do.'*

<sup>5</sup> Utility Regulator - Consumer research published on the energy transition , 10 June 2021: <https://www.uregni.gov.uk/news-centre/consumer-research-published-energy-transition>

##### 5. Development of Local Energy Markets

The development of local energy markets could potentially affect trades in energy and the use of NIE Networks' distribution system. This in turn could influence which customers NIE Networks' recover the distribution network costs from. The DfE Energy Strategy consultation states;

*'Local markets: In an increasingly distributed energy system, the opportunity for local energy markets to match supply and demand may arise. This can reduce the need for large-scale infrastructure, minimise losses and enable flexibility – all of which could reduce customer bills. Local markets could act as platforms where local balancing of supply and demand takes place. Trials of local markets are beginning to emerge, such as peer to peer trading, virtual networks and microgrids, and markets in local flexibility services would need to be developed to manage local network constraints.'*



<b>Topic:</b> Drivers of change	<b>Question number:</b> 3	<b>Question:</b> Do you consider that economy and efficiency should continue to be key factors in the Utility Regulators role in the transition process?
<p><b>Response:</b></p> <p>We note that the Utility Regulator’s (UR’s) website<sup>6</sup> states that their statutory objectives in relation to electricity are to;</p> <ul style="list-style-type: none"> <li>• <i>‘Protect the short and long-term interests of electricity, gas, water and sewerage consumers with regard to price and quality of service; and</i></li> <li>• <i>Promote competition, where appropriate, in the generation, transmission and supply of electricity’</i></li> </ul> <p>Our understanding is therefore that economy and efficiency are not currently key factors in the UR’s role. However, we do consider that these should be included as key factors in the UR’s role going forward and we consider this to be vital for the energy transition process. In our Networks for Net Zero publication<sup>7</sup>, we stated:</p> <p><i>‘NIE Networks considers that the mandate of the Utility Regulator should be broadened to support decarbonisation and economic development. This would provide an opportunity to create a forward-looking regulatory framework that supports innovation and strategic investment, stimulating new employment opportunities and a more prosperous economy.’</i></p> <p>In our response to DfE’s Energy Strategy consultation<sup>8</sup> we also advocated broadening the mandate of the UR to consider the need for decarbonisation and economic development in order to create a forward-looking regulatory framework that supports innovation and strategic investment.</p>		

<sup>6</sup> Utility Regulator website: <https://www.uregni.gov.uk/what-we-do>

<sup>7</sup> NIE Networks’ Networks for Net Zero: <https://www.nienetworks.co.uk/documents/future-networks/networks-for-zero-net>

<sup>8</sup> NIE Networks’ Response to DfE Energy Strategy Consultation, 1 July 2021: <https://www.nienetworks.co.uk/documents/future-networks/dfe-response-jul21.aspx>

<b>Topic:</b> Drivers of change	<b>Question number:</b> 4	<b>Question:</b> Which of the key drivers outlined do you think present the largest impact for Northern Ireland specifically – and why?
<p><b>Response:</b></p> <p>There are many factors that need to be considered as key drivers for the energy transition in Northern Ireland (NI). These include the drivers suggested by UR in their Call for Evidence (CfE), as well as the additional drivers that we have highlighted in our response to question two above. We consider that to plan for energy transition and tariff reform to support the energy transition, we must be cognisant of, and consider the combined impact of all drivers, rather than placing focus on one driver which might be considered to have a greater impact on its own.</p> <p>However, it is clear that digitisation and data usage will have a large impact for NI, and specifically the role that smart meters play in enabling the use of data for the benefit of Northern Ireland customers</p> <p>The digitalisation of the energy industry is a fundamental foundation to a net-zero future and is reflected as a principle of DfE’s Energy Strategy consultation<sup>9</sup>. Data helps network owners manage their systems more efficiently and helps customers make more informed choices about their consumption, provide accurate and regular information on their energy usage, and minimise the need for estimated bills, ultimately helping customers to be energy efficient and save money. Smart meters are also an essential foundation to maximise the benefit of renewable generation capability and low carbon technologies, and offer consumers information and choice such as availing of cheaper energy at off-peak periods.</p> <p>Smart metering data acts as a key enabler to future smart-cities and communities. This is currently not an option for NI domestic customers, who have meters with very limited functionality. The blue-tooth unit for keypad meters currently available in NI does provide additional information for customers and is a positive step in that regard, but it does not provide the full capability or benefits of smart meters. Smart meters are also important for the protection of vulnerable customers to ensure they are treated fairly, have the opportunity to have access to energy data and make informed decisions about energy use and potentially have the ability to participate in new energy markets (possibly through an aggregator).</p> <p>Smart meters have been rolled out successfully across many European countries and the Department for Business, Energy and Industrial Strategy (BEIS) is supportive of a continued smart metering roll-out across GB, however, at present there is no mandated smart metering programme for NI. NIE Networks considers it is time now to progress a smart metering programme as a key enabler and support a review of the case for smart metering to ensure both customer and network benefits are assessed.</p>		

<sup>9</sup> NIE Networks’ Response to DfE Energy Strategy Consultation, 1 July 2021: <https://www.nienetworks.co.uk/documents/future-networks/dfе-response-jul21.aspx>

<b>Topic:</b> Drivers of change	<b>Question number:</b> 5	<b>Question:</b> How important and valuable do you consider energy aggregators to be?
<p><b>Response:</b></p> <p>NIE Networks consider energy aggregators have an important and valuable role to play in electricity markets, and into the future aggregators could have an important role in capitalising domestic flexibility. In terms of Distribution Use of System (DUoS) tariff reform, when assessing tariff options, energy aggregators should be considered as a key market participant.</p> <p>Paragraph 3.23 of the Call for Evidence states;</p> <p><i>‘Aggregation can be carried out by both traditional suppliers and new entrants, referred to as ‘independent aggregators’. These developments enable consumers to alter demand on the network at strategic times’</i></p> <p>In relation to altering demand on the network at strategic times. We must be cognisant that aggregators could react to signals from the Transmission System Operator to alter demand or generation and these signals may conflict with the needs of the distribution network at that time.</p> <p>We note that distribution flexibility is growing at a fast rate in Great Britain and is now being trialled in Northern Ireland (NI). Flexibility in the distribution network will be critical to enable energy transition. NIE Networks recently published the first ever Flexibility tender in NI. This tender offers customers opportunities to support their local distribution networks by being flexible with their electricity consumption or generation, earning revenues in return. Within this first flexibility tender, NIE Networks welcomed expressions of interest from all technology types and size, including aggregators and community energy schemes. The FLEX project will create the financial stimulus to encourage community energy schemes to propagate in NI. Flexibility down to domestic level is critical for low carbon technology connections, facilitating the electrification of heat and transport. The roll out of smart meters, tariff reform and development of the telecommunication and IT infrastructure are necessary for a liquid flexibility market in Northern Ireland.</p>		
<b>Topic:</b> Drivers of change	<b>Question number:</b> 6	<b>Question:</b> In what ways could the electricity market in Northern Ireland be changed to make better use of energy aggregators?
<p><b>Response:</b></p> <p>As mentioned in response to question five, the Northern Ireland (NI) electricity market could benefit from aggregators operating in the domestic market to assist with domestic flexibility; however, this is likely to be dependent on the introduction of smart meters to NI.</p> <p>If the number of aggregators is expected to increase in the future then some changes will be required to operational processes to ensure the market can operate effectively. We note that some of the current processes rely on NIE Networks being notified of aggregator registrations and de-registrations by manual processes which can lead to market issues.</p>		

<b>Topic:</b> Drivers of change	<b>Question number:</b> 7	<b>Question:</b> Do you think that digital technology, which offers customers live information on consumption and bills, is necessary for tariffs to provide adequate pricing signals?
<p><b>Response:</b></p> <p>Yes, NIE Networks considers that digital technology (specifically smart meters) is necessary for tariffs to provide adequate pricing signals.</p> <p>The Introduction of smart meters will provide better and real time information on energy usage and facilitate the introduction of more flexible tariffs. The information provided by smart meters will help consumers to make more informed choices about their consumption, provide accurate and regular information on their energy usage, and eliminate the need for estimated bills. Smart meters are an essential foundation to maximise the benefit of renewable generation capability and low carbon technologies, and offer consumers information and choice such as availing of cheaper energy at off-peak periods. Smart meters are also important to ensure protection of vulnerable customers to ensure they are treated fairly, have the opportunity to have access to energy data and make informed decisions about energy use and potentially have the ability to participate in new energy markets (possibly through an aggregator).</p> <p>Access to granular data from smart meters offers a detailed understanding of HV and LV network conditions supporting more accurate modelling and forecasting leading to better informed network investment decisions and efficient network operation.</p> <p>The availability of data from smart meters distributed throughout the LV network and the ability to aggregate data points together allows more targeted network investment or alternative solutions to be deployed in locations of network congestion reducing customer bills. Directly, smart meters are a potential key enabler of smart and market-based solutions such as Active Network Management (ANM) schemes and Flexibility operating a dynamic distribution network in line with the company's Distribution System Operator (DSO) ambitions.</p> <p>Indirectly, the natural alignment of time-of-use tariffs facilitated by smart meters with periods of peak network congestion will incentivise customers to shift consumption towards periods of lower network demand. This has the effect of reducing network congestion thereby deferring the need for load related network reinforcement and reducing customer bills. As well as enhancing consumer choice and participation, similar network benefits can be observed in trials of Peer to Peer energy trading as customers align periods of local demand and generation avoiding upstream network congestion.</p> <p>Currently in Northern Ireland, c.12,300 business customers connected to the distribution network have a half hour meter. All other customers (98.6% of the total customer base) have meters which are manually read on a quarterly basis with no information on how and when they consume electricity. These customers are treated in aggregate in terms of their energy usage and this means that individual customers do not benefit from efficient usage and from avoiding using the network during peak times. This applies for the energy costs in the customer's retail bill as well as their Distribution Use of System (DUoS) costs.</p>		

<b>Topic:</b> Drivers of change	<b>Question number:</b> 8	<b>Question:</b> Is there existing technology in NI that could be used enable more efficient transition?
<p><b>Response:</b></p> <p>The energy transition refers to the global shift away from using traditional, non-renewable energy sources, and replacing these with modern, renewable forms of energy. This will have an impact on how customers use the network, and will also impact how NIE Networks manages a safe and efficient network. Any technology being considered as an enabler therefore needs to consider customers and NIE Networks.</p> <p>We are aware that Bluetooth keypad metering is currently available in NI for domestic customers. Bluetooth keypad metering as an alternative to smart metering potentially offers opportunities for efficient transition. However, the primary differences are that Bluetooth keypad meters do not operate in real time and are not true two-way dynamic communicators.</p> <p>In addition, network benefits such as a real time view of customer outages across the network, dynamic import and export data, voltage measurement etc. are not available from the existing Bluetooth keypad meters.</p> <p>In summary, Bluetooth meters do not provide any network data to NIE Networks to enable more efficient network planning and operation and therefore, Bluetooth keypad meters cannot be considered a viable alternative to smart metering to enable an efficient energy transition.</p>		

<b>Topic:</b> Drivers of change	<b>Question number:</b> 9	<b>Question:</b> If changes were made to tariffs, should this wait until all customers have access to up-to-date technology that allows the change to have maximum impact?
<p><b>Response:</b></p> <p>It is not appropriate to decide upon a timeframe for the roll out of tariff changes, until we know what the tariff changes will be and how the changes could impact customers; however, our initial view would be that tariff changes could be introduced gradually as new technology becomes available to customers to facilitate the tariff changes. NIE Networks would also be keen that any tariff changes that could potentially benefit the network are implemented at the earliest opportunity as any delays could reduce the impact of the changes.</p> <p>In Great Britain (GB), tariff changes have been introduced in stages, for example, the outcome of the Targeted Charging Review<sup>10</sup> was changes to distribution and transmission residual charges and Ofgem made the decision to implement the changes in stages to help to mitigate the distributional impacts. Reforms to transmission charges were introduced from 2021 and distribution charges will be introduced from 2022. In addition, Ofgem has consulted on other distribution tariff reforms through the Access and Forward-Looking Charges project<sup>11</sup>; however, they are currently considering delaying the implementation of these reforms until there is greater clarity about the longer-term role of transmission network use of system (TNUoS) charges due to the potential for short term volatility. Ofgem has considered the impact for each set of reforms, before making decisions about the timeframes for implementation.</p> <p>The Electricity Directive 2019/944/EC states that where the deployment of smart metering systems is assessed positively, at least 80% of final consumers shall be equipped with smart meters either within seven years from the date of the positive assessment or by 2024 for Member States that received a positive assessment prior to the implementation of Directive 2019/944. It is anticipated that any smart meter roll out in Northern Ireland would take at least five years to complete in a uniform geographical spread meaning that some customers could inevitably benefit from new tariff offerings before others. However, this tends to be the case whenever any new technology is rolled out e.g. broadband and is largely unavoidable. As long as customers can request and receive new technology reasonably on demand this may not be an issue.</p> <p>When decisions are being made about what tariff changes should be introduced, it would be appropriate to carry out impact assessments to evaluate the impact on customers and other stakeholders, and this should include analysis of the impact of waiting until all customers have access to new technology compared with introducing tariff changes in stages. A transition process should be agreed at this stage.</p>		

<sup>10</sup> Ofgem Targeted Charging Review: decision and impact assessment, 21 November 2019: [https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full\\_decision\\_doc\\_updated.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full_decision_doc_updated.pdf)

<sup>11</sup> Ofgem Access and Forward-looking Charges Significant Code Review: Consultation on Minded to Positions, 30 June 2021: <https://www.ofgem.gov.uk/sites/default/files/2021-06/%281%29%20Ofgem%20Access%20SCR%20-%20Consultation%20on%20Minded%20to%20Positions.pdf>

## Tariff reform options

**Topic:** Tariff reform options

**Question number:** 10

**Question:** Different tariff structures place emphasis on different factors such as cost-reflectivity, managing peak demand, simplicity, reducing price volatility, and providing more information to customers. Which objectives do you think tariffs should be designed to prioritise?

**Response:**

We welcome that the Utility Regulator (UR) is considering objectives against which tariffs should be designed. We have summarised below the approach that Ofgem took in relation to setting overarching principles for tariff reform and we would support a similar approach from UR where principles are set which would then be used as basis to assess all tariff reform options.

In 2017, Ofgem initiated a tariff reform review for GB DNOs. They decided to progress tariff reform under two main projects:

1. Targeted Charging Review (TCR)
2. Access and Forward-looking Charges

For each of these projects they considered the principles upon which the review should be based.

The TCR<sup>12</sup> focused on a review of residual costs which are not cost reflective, so they consulted upon principles which the reform should be assessed against. The final three principles were;

- reducing harmful distortions;
- fairness; and
- proportionality and practical considerations.

For the Access and Forward-looking Charges project<sup>13</sup>, which covers cost reflective charges, Ofgem set guiding principles which provide the framework for developing policy and formed the basis of a principles led assessment of options. The guiding principles are set out in the table below and are underpinned by a number of criteria to make clearer the trade-offs that are considered when assessing the reforms against the guiding principles. Ofgem noted that one of the considerations under guiding principle 1 is about supporting Net Zero, as this was suggested by a number of stakeholders.

<sup>12</sup> Ofgem Targeted Charging Review: decision and impact, 21 November 2019: [https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full\\_decision\\_doc\\_updated.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full_decision_doc_updated.pdf)

<sup>13</sup> Ofgem Access and Forward-looking Charges Significant Code Review: Consultation on Minded to Positions, 30 June 2021: <https://www.ofgem.gov.uk/sites/default/files/2021-06/%281%29%20Ofgem%20Access%20SCR%20-%20Consultation%20on%20Minded%20to%20Positions.pdf>

Guiding principle	Criteria
1. Arrangements support efficient use and development of network capacity	<ul style="list-style-type: none"> <li>a) Arrangements support decarbonisation and contribute to meeting net zero targets, including in relation to impacts or low carbon technologies</li> <li>b) Access arrangements support network capacity allocation according to users' needs and value</li> <li>c) Signals reflect costs and benefits of using network at different times and places</li> <li>d) Signals support efficient use of capacity</li> <li>e) Signals ensure no undue cross-subsidisation between users</li> <li>f) Arrangements support effective signals for justified new network capacity</li> <li>g) Arrangements reduce barriers to entry</li> <li>h) Arrangements enable new business models</li> </ul>
2. Arrangements reflect the needs of consumers as appropriate for an essential service	<ul style="list-style-type: none"> <li>a) Arrangements avoid inappropriate outcomes or unacceptable impacts for small users</li> <li>b) Users are able to understand arrangements</li> <li>c) Users have sufficient information to predict their future access and charges</li> </ul>
3. Any changes are practical and proportionate, considering:	<ul style="list-style-type: none"> <li>a) Impact on existing data collect, processing, and analysis requirements</li> <li>b) Impact on existing systems, assets and equipment, potential requirement for new IT/operational systems (e.g. billing systems)</li> <li>c) Modification to charge calculation and settlement methodologies</li> <li>d) Adaptions to engineering or planning standards</li> <li>e) Impact on customer engagement or commercial agreements</li> <li>f) Ease of implementation</li> <li>g) Distributional impacts for network users</li> <li>h) Arrangements are appropriately future proof by being robust to uncertain future developments on the system (e.g. low regret in that they are valuable as a first step and flexible / adaptable) or set us on a clear path, where certainty is greater</li> </ul>

NIE Networks considers that simplicity should be a key principle in addition to cost reflectivity. If tariffs are too complex there will be no impact on customer behaviour which can limit the value of any tariff reform. If we can use tariffs to incentivise customers to change their behaviour this could reduce their electricity bills, while also creating a benefit for the network. Similarly cost predictability is important as volatility in prices is not beneficial for customers.



**Topic:** Tariff reform options

**Question number:** 11

**Question:** With regard to non-discrimination and cost reflectivity, are there deficiencies in the current tariff system which could be remediated?

**Response:**

In order to ensure that tariffs remain non-discriminatory and cost reflective into the future, NIE Networks would suggest consideration should be given to a review of how network costs are attributed to customer groups. This review should ensure that, as the way in which customers use the network evolves, the costs attributed to different types of customers remain fair and proportionate.

1. DUoS Tariffs for New Technologies

The introduction of new technologies, such as battery storage, will also require consideration to ensure cost reflective and non-discriminatory tariffs are applied for these customers. We understand the market rules for battery storage customers are different from the rules for demand or generation customers. This issue has been recognised in RoI and interim distribution charging arrangements are being put in place. We urge the UR to also consider this issue outside of this consultation process as charging arrangements need to be agreed prior to the connection of battery storage customers to the distribution network.

2. Fixed v Variable Charges

As already mentioned in response to question 2, tariff reform should provide protection to passive and vulnerable customers while enabling and incentivising innovation and efficient use of the networks. The allocation of costs is key to this aim. Our Distribution Use of System (DUoS) tariffs are primarily volume based, with approximately 74% of distribution revenue recovered from unit (kWh based) charges. However, there are a number of potential issues with this volumetric approach which could prove problematic as we transition to net zero carbon.

Firstly, as more and more customers start self-generating, the volume of electricity they consume via the distribution network may reduce in aggregate; and so, under the current volume driven tariff arrangements, the contribution they make towards network costs may also reduce. The end result could be that a higher proportion of network costs are left to be recovered from customers who are more reliant on the electricity distribution network for meeting their electrical demands and this could be considered to be unfair.

A second issue, and one which may serve to counterbalance the above issue of reduced consumption via the distribution network, is that customers may end up consuming a much greater volume of electricity units to heat their homes and/or charge their electric vehicles. If their electrical demands are met only via the network, these customers would end up paying proportionately more towards network costs under the current volume-driven tariff arrangements than they did before and this, again, could be considered to be unfair.

In addition, the energy transition will inevitably result in a change to the type of costs that NIE Networks incur in order to operate a safe and efficient network into the future, and result in changes to how and when customers use the distribution network. These factors must also be considered within the context of tariff reforms. Ofgem have considered these issues within their Targeted

Charging Review<sup>14</sup> and their Access and Forward-looking Charges Significant Code Review<sup>15</sup>. Accordingly, NIE Networks would support a review of network cost allocation led by the Utility Regulator, to address these issues and to ensure DUoS tariffs remain non-discriminatory and cost reflective.

### 3. Distribution Licence Restrictions

A further point that requires consideration to ensure tariffs remain non-discriminatory into the future is the non-discrimination clause within condition 32 (Basis of Charges for Use of and Connection to the Distribution System) of NIE Networks distribution licence<sup>16</sup>. With the increasing adoption of new technologies, it is expected that customer demand will change. These changes in demand could result in an unintended consequence from the licence condition meaning that customers may have to change tariff and will potentially be charged higher prices as a result. This lack of stability and transparency is not beneficial to customers as it will be more difficult for customers to predict their future charges. Also, it is not an appropriate price signal to provide to customers who are acting efficiently, and therefore does not support decarbonisation and our contribution to meet net zero targets.

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<sup>14</sup> Ofgem Targeted Charging Review: decision and impact, 21 November 2019: [https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full\\_decision\\_doc\\_updated.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full_decision_doc_updated.pdf)

<sup>15</sup> Ofgem Access and Forward-looking Charges Significant Code Review: Consultation on Minded to Positions, 30 June 2021: <https://www.ofgem.gov.uk/sites/default/files/2021-06/%281%29%20Ofgem%20Access%20SCR%20-%20Consultation%20on%20Minded%20to%20Positions.pdf>

<sup>16</sup> NIE Networks' Electricity Distribution Licence: <https://www.uregni.gov.uk/files/uregni/documents/2021-08/nie-distribution-licence-effective-16-08-2021.pdf>

<b>Topic:</b> Tariff reform options	<b>Question number:</b> 12	<b>Question:</b> Do you think there are factors other than price that effectively incentivise consumers to change their behaviour? Which of these (including price) would you expect to be the most powerful incentive?
<p><b>Response:</b></p> <p>While lifestyle and business operations will ultimately drive consumer behaviour, we consider that price is the key factor which can be used to influence customer behaviour, in terms of how and when customers use the electricity network. This belief is supported by recent consumer research<sup>17</sup> carried out by the Consumer Council where they stated;</p> <p><i>‘It was emphasised again by consumers that price is a major factor to them changing their energy behaviours and buying patterns.’</i></p> <p>We would highlight that, while price alone may influence customers to change their total consumption behaviour (e.g. if prices increase then consumers may reduce consumption to reduce their overall bills), customers would require more information along with pricing signals if they are expected to change the pattern of their electricity usage.</p> <p>The UR’s recent consumer research<sup>18</sup> has identified that customers are most concerned about steep price rises. Their research states that 42% of consumers are not prepared to accept an increase in energy bills to fund investment into the energy infrastructure to support renewables, and 85% of consumers were most likely to be concerned about steep rises in energy prices.</p> <p>This emphasises the need for customers to be able to take ownership of their electricity usage in the future through the availability of more information (from smart meters), coupled with price signals which will allow customers to manage their electricity consumption in such a way that they can reduce their own electricity bills. Pricing signals could be in the form of higher prices at network peak times and lower prices at non-peak times, or penalty charges (similar to the current MIC Exception charges which apply where customers exceed their contracted capacity). If customers react to pricing signals in order to avoid peak network times when the prices are high, this will not only benefit the consumer through reduced bills, but can also provide benefits to the network by reducing the capacity at peak times and therefore postponing the need for expensive network reinforcement, ultimately reducing future network charges to customers.</p> <p>Distribution Use of System (DUoS) charges are only a proportion of the total electricity retail bills, and therefore a link between DUoS tariff and Supplier bills would be fundamental for customers to benefit financially through DUoS price signals. For example, a customer can only react to DUoS price signals and gain benefit from lower electricity bills if the DUoS unit price time bands are replicated in their Supplier’s retail tariffs. At present there is no regulatory requirement for Suppliers to implement DUoS tariff structures in their retail tariffs. We note that the UR has recognised this in their Call for Evidence where they state;</p> <p><i>‘We note that... it is electricity suppliers, not consumers, upon whom distribution tariffs are directly levied. Therefore, an evaluation of the link between NIE Networks, suppliers and consumers may be required in order for them to be implemented.’</i></p>		

<sup>17</sup> The Consumer Council – Northern Ireland consumers views on energy transition, 1 July 2021: [https://www.consumercouncil.org.uk/sites/default/files/2021-07/Northern\\_Ireland\\_consumers\\_views\\_on\\_energy\\_transition\\_consumer\\_friendly\\_version.pdf](https://www.consumercouncil.org.uk/sites/default/files/2021-07/Northern_Ireland_consumers_views_on_energy_transition_consumer_friendly_version.pdf)

<sup>18</sup> Utility Regulator – Energy Strategy Consumer Research, 22 April 2021: <https://www.uregni.gov.uk/news-centre/consumer-research-published-energy-transition>

We agree with the UR that a review is required.

In terms of connections to the distribution network, price is currently driving a behaviour that is discouraging the connection of low carbon technologies (LCTs) due to high connection costs. A review of the connection charging policy is needed urgently to address this and we have advocated for such a review in our response to DfE's Energy Strategy consultation<sup>19</sup>. Tariffs only become a consideration once a consumer or generator is connected, so if the cost of connection imposes a financial barrier to connecting in the first place then the impact of tariff reform incentives will not be realised.

**Topic:** Tariff reform options

**Question number:** 13

**Question:** Do you think that tariffs should be more tailored to individuals' energy usage, or be more a reflection of overall demand?

**Response:**

We recognise that network reinforcement is highly driven by peak demands. However, we do not currently have the capability of measuring the demands of all NI customers at a point in time. Less than 1% of our customer base have meters that can measure customer demand at a point in time.

To move towards charges based on demand, rather than energy usage would require estimation based on assumptions about average profiles of usage. This matter would require further consideration as part of the tariff reform process.

<sup>19</sup> NIE Networks' Response to DfE Energy Strategy Consultation, 1 July 2021: <https://www.nienetworks.co.uk/documents/future-networks/dfe-response-jul21.aspx>

<b>Topic:</b> Tariff reform options	<b>Question number:</b> 14	<b>Question:</b> Because there are fixed costs to using the grid, costs are not exactly proportionate to consumption. Do you think that tariffs should be more reflective of the service that is being provided through the network connection?
<p>NIE Networks' Distribution Use of System (DUoS) tariffs are primarily volume based with approximately 74% of distribution revenue recovered from unit (kWh based) charges. As customers generate more of their own electricity locally but still want to remain connected to the network for continuity of supply and to avail of system services, a higher proportion of network costs will be recovered from customers who are less willing or unable to reduce their electricity usage (passive consumers). In general, this will be domestic and small business customers and will include customers in vulnerable situations.</p> <p>We consider that the distribution tariff reform should therefore include a review in terms of rebalancing DUoS charges. When network users install alternative energy sources their electricity consumption generally reduces. As a consequence, a higher proportion of past network investment costs will be claimed from the remaining network users through unit charges. Rebalancing network costs by reducing the proportion recovered from unit charges and increasing the proportion recovered from fixed charges, such as capacity or standing charges, could provide a fairer and more appropriate allocation of costs.</p> <p>NIE Networks would support increasing the fixed charge element of the DUoS tariffs as this better reflects the service the network provides to all customers irrespective of how much they use it, i.e. there is a cost to providing network access to customers, and all customers should contribute towards this through their DUoS charges, even those customers who can generate their own electricity but want to retain the network connection as a back-up. However, it is important to retain an element of charges associated with time-of-use to incentive efficient usage from customers. Our view that DUoS charges need to be reviewed with the intention of rebalancing charges supports the work that Ofgem has already completed in GB. Ofgem initiated the Targeted Charging Review (TCR) project in GB to review the residual charges element of their DUoS charges. In the TCR decision paper<sup>20</sup>, Ofgem states;</p> <p><i>'We have decided to take action because of changes in the energy sector. More businesses and households are generating at least part of their energy requirement through solar panels, wind turbines or more traditional generation technologies. Electricity storage is also becoming more common and there is an increasing uptake of electric vehicles and heat pumps. Electricity increasingly flows from the distribution networks onto the transmission network, as well as in the other direction. This has meant that the existing approach to network charges no longer reflects how the networks are used, and the current regime shifts the recovery of these charges onto an increasingly smaller group of users. The rapid pace of changes mean that the issues with the existing charging structure are likely to become worse over time. We are therefore taking action to address this and to ensure that network charging works in the interests of both current and future consumers.'</i></p> <p>The residual charges top up the revenue recovered from cost reflective forward-looking charges to enable the GB DNOs to recover their allowed revenues. In GB these residual charges can account for up to 50% of their total DUoS charges. Distribution residual charges had previously been levied almost entirely on demand customers based on volumetric charges per unit of electricity used. The outcome of this project was a decision to apply residual charges as a fixed charge per demand customer (for business and domestic customers), rather than charging based on consumption. This change is being implemented into DUoS charges in GB from April 2022.</p>		

<sup>20</sup> Ofgem Targeted charging review: decision and impact assessment, 21 November 2019: [https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full\\_decision\\_doc\\_updated.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2019/12/full_decision_doc_updated.pdf)

<b>Topic:</b> Tariff reform options	<b>Question number:</b> 15	<b>Question:</b> To what extent do you think tariff structures should rely on new modern technology and data capabilities?
<b>Response:</b> Smart meters and data capture are widely accepted as enablers to provide more efficient network tariffs for domestic and small business customers. Smart meters would enable the effective application of cost reflective time-of-use price signals as they provide customers with detailed information on how and when they use the networks. These cost reflective signals can encourage customers to be flexible in their use of the network, increasing network efficiency while reducing their own electricity bills. As this behaviour is rolled out this should create benefits for all network users through efficient network use.		

### Approaches to managing the transition

**Topic:** Approaches to managing the transition

**Question number:** 16

**Question:** Would you expect tariff reforms to be introduced quickly over a short time period, or to be eased in gradually?

**Response:**

We note that a key driver for the UR's Call for Evidence (CfE) is the decarbonisation agenda. DfE's Energy Strategy consultation<sup>21</sup> and the CfE acknowledge that suitable tariffs are essential in driving behaviour to incentivise new technologies and enable consumer involvement. Therefore, arguably any changes would need to be implemented in as short a time frame as possible to realise the benefits in time to contribute towards achieving the 2030 environmental targets.

However, there are a number of factors which should be considered as part of the decision as to when tariff reforms should be implemented, for example:

- The proposed connection date for new technologies, which require the support of tariff reforms (e.g. battery storage)
- Dependency of proposed tariff reform on the approval and implementation of meter changes (e.g. smart meters)
- Interdependencies with other market developments, market rules and policies
- Ease of implementing tariff changes in supplier, SONI and SEMO's systems
- Impact on customers and stakeholders of introducing tariff changes quickly, compared to easing in gradually
- Impact on passive customers if tariff changes are not introduced quickly.

We have also noted in our response to question 11 that the market rules for battery storage customers are different from the rules for demand or generation customers. This issue has been recognised in RoI and interim distribution charging arrangements are being put in place for connections to the distribution network in ROI. We urge the UR to also consider this issue outside of this consultation process as charging arrangements need to be agreed prior to the connection of battery storage customers to the NI distribution network.

<sup>21</sup> DfE Energy Strategy for Northern Ireland – Consultation on Policy Options, March 2021: <https://www.economy-ni.gov.uk/sites/default/files/consultations/economy/energy-strategy-for-ni-consultation-on-policy-options.pdf>

<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 17	<b>Question:</b> Would you expect tariff reforms to be applied to all consumers, or only certain subgroups or a certain proportion?
<p><b>Response:</b></p> <p>The decision on who the changes should apply to is highly dependent on what the changes are and the option chosen to deliver those changes. For example, changes relating to the allocation of costs into tariffs would be applied to all customers, whereas new tariffs designed for battery storage or electric vehicle (EV) customers would only be applied to these types of customers, however there could be minor impacts on other customer groups as new charges are introduced or costs reallocated.</p> <p>Distribution Use of System (DUoS) tariffs could also be used to provide government incentives to customers, for example, if the government wanted to provide incentives to encourage the uptake of EVs, then a DUoS EV tariff could be designed with reduced prices funded through the government incentive.</p> <p>Therefore, this will need to be considered further when the tariff changes are being designed with impact assessments carried out to consider the impact on customers and other stakeholders.</p>		



<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 18	<b>Question:</b> Do you have views on whether new tariff structures should be opt-in, opt-out, or mandatory?
<p><b>Response:</b></p> <p>From an overall principle level, it would not seem appropriate to allow customers an opportunity to opt-in and out of Distribution Use of System (DUoS) tariffs changes. We have provided some reasons below:</p> <ul style="list-style-type: none"> <li>• Allowing customers to opt-in / out of tariff changes could limit the impact of any changes and therefore reduce the potential benefits from tariff reform.</li> <li>• Allowing customers to opt-in /out of tariffs will make forecasting more difficult for NIE Networks as there will be uncertainty around the tariffs that customers will be on. This could ultimately lead to volatility in prices.</li> <li>• The DUoS tariff accounts for only a small element of the total retail bill that customers face and the customer relationship is between the customer and supplier (not the customer and NIE Networks), so most customers, especially smaller businesses and domestic customers, are unlikely to have the knowledge or the desire to make decisions about opting in and out of DUoS tariffs.</li> <li>• Providing customers with an opportunity to opt-in / out of DUoS tariffs may have no benefit to the customer, unless there is a requirement on electricity suppliers to pass through the DUoS charges to each customer. We note that in paragraph 4.26 of the Call for Evidence, the Utility Regulator (UR) recognises that the extent to which opt-in / out tariffs could be used in Northern Ireland (NI) is limited by the fact that electricity suppliers are not required to pass through distribution tariffs to customers.</li> </ul> <p>In NI, there are currently 46 DUoS tariffs for customers connected to the LV and HV networks. This is substantially more than ESB Networks in RoI where there are only 11 DUoS tariffs and GB where there are around 32<sup>22</sup> DUoS tariffs for equivalent customers. Increasing the number of tariffs could give greater potential for volatility in tariff prices and works against the principle of simplicity. We should therefore consider carefully before introducing any new tariffs, and the existing tariffs should be rationalised.</p> <p>Our understanding is that providing customer choice in relation to allowing customers to opt in and out of tariffs may be more commonly associated with Supplier tariffs, rather than DUoS tariffs. We would welcome further information from the UR on how this could work, and any examples of other DNOs who have adopted an opt-in / out approach to DUoS tariffs.</p>		

<sup>22</sup> Based on Northern Powergrid (Northeast) Plc Use of System Charging Statement Effective from 1 April 2022

<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 19	<b>Question:</b> In addition to (i) opt-in / opt-out, (ii) offering a choice from a range, or (iii) gradually phasing in a new system, are there other methods of offering new tariffs to customers that should be considered?
<p><b>Response:</b></p> <p>A mandatory approach to tariff changes should be considered in the first instance, i.e. tariff reform would apply to all customers and exceptions should only be made where there are strongly justified reasons. A mandatory approach does not appear to be considered within the Call for Evidence (CfE) so we would ask the UR to consider this.</p> <p>Distribution Use of System (DUoS) tariff reforms could be implemented as a one-off change through a 'big bang' approach, or introduced gradually through a transitional approach, for example in line with the introduction of new technology such as smart meters which would facilitate tariff structures. The most appropriate approach to managing the transition can only be determined at the time when the options for tariff change are being considered and designed. All tariff changes should be assessed with detailed consideration being given to the impacts on customers and stakeholders.</p> <p>There may be other options for managing the transition which are not clear at the moment and which the UR has not mentioned in their CfE and these should not be ruled at this stage.</p>		

<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 20	<b>Question:</b> Do you think consumers would respond positively, if offered a range of options, or should one type of tariff be used for everyone?
<p><b>Response:</b></p> <p>As mentioned in response to question 18, under the current Distribution Use of System (DUoS) tariffs, domestic customers and business customers with usage under 70kVA do have options in relation to their DUoS tariff, for example they have options between single rate and multi-rate DUoS tariffs, and domestic customers also have options between credit meter tariffs and keypad tariffs. These options are restricted by the meter on site, and if a customer wishes to change tariff, they have to request a meter change. Therefore, customers cannot easily or quickly change between tariffs. Tariff reform to facilitate energy transition should review existing tariffs with a view to rationalising existing tariffs. New tariffs could be introduced based on strong justification to support energy transition.</p> <p>There is very little benefit in offering customers a range of options in relation to DUoS tariffs. Electricity customers have a tariff relationship with their electricity supplier, rather than NIE Networks, therefore most customers will be unaware of the DUoS tariff structure or potential choices of DUoS tariffs.</p> <p>Customers currently liaise with their electricity supplier to choose their retail tariff. Asking a customer to also choose a DUoS tariff seems overly complex and we would not expect customers to actively engage in that process or respond positively as there may be no benefit to the customer in doing so since the electricity supplier is not obliged to pass through the DUoS tariff to the customer. We have provided a summary of some of the issues that could arise by offering customers a choice of DUoS tariff:</p> <ul style="list-style-type: none"> <li>• Allowing customer choice, and the option for customers to change tariff could lead to price volatility due to the nature of forecasting for each tariff being more difficult.</li> <li>• Providing choice could result in some more engaged customers cherry picking tariffs for their own benefit, rather than being placed on a tariff which could help to incentivise a change in customer behaviour.</li> <li>• Providing choices of DUoS tariffs to customers could become overly complex and result in the unintended consequence of customers just staying on the same tariff as they don't have the knowledge or understanding to know which DUoS tariff to choose. Too much choice can become a barrier, especially for more vulnerable and less engaged or passive customers.</li> <li>• Providing customers with a choice of DUoS tariff may have no benefit to the customer, unless there is a requirement on electricity suppliers to pass through the DUoS charges to each customer.</li> </ul> <p>We note that in paragraph 4.29 of the Call for Evidence (CfE) the UR has identified that the extent to which offering customers a choice of DUoS tariff is currently feasible in NI is limited due to the way in which NIE Networks charge electricity suppliers and then electricity suppliers charge the customers.</p> <p>UR has stated that a mid-ground may be achievable if suppliers themselves were offered the choice from a variety of tariffs. We are unclear how this would work as the issue would still exist where the supplier has no obligation to pass through the DUoS tariff to the customer and therefore customers may not receive the price signals which are designed to incentivise a change in customer behaviour.</p>		

We would welcome further explanation from the UR on this if they wish to proceed with this as an option.

In addition, the UR suggests in paragraph 4.29 that different tariffs could be applied for different customer segments or locations, but careful consideration would be needed to ensure customers are treated fairly, and that suppliers are not disincentivised to participate in the market, and licence arrangements would be required between the Utility Regulatory and NIE Networks to make this strategy viable. We have listed some comments and concerns in relation to this statement in the CfE;

- We expect that different DUoS tariffs will apply to different customer segments, as is the case currently (e.g. different DUoS tariffs for domestic, small business, larger business etc).
- NIE Networks currently has a licence condition which places restrictions on the ability to apply locational tariffs, therefore this licence condition would need to be reviewed if the UR intends to consider locational tariffs as part of tariff reform.
- We are unclear how tariffs for different customer segments or locations could disincentivise suppliers from participating in the market and would appreciate further clarification from the UR on this. We are also keen to understand from the UR what licence arrangements they believe would be required between UR and NIE Networks for this to work.

<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 21	<b>Question:</b> Do you have views on whether consumers could modify their behaviour, if the incentive to do so was right? Or are usage patterns largely fixed by factors outside of their control?
<p><b>Response:</b></p> <p>Some elements of electricity use will be dictated by lifestyle and working patterns or business operations and therefore difficult for a customer to modify behaviour to change their patterns of use. However, there is opportunity for other elements of electricity consumption to be changed where there is an incentive for the customer to do so and where information is available through meters to allow the customer to monitor consumption. At a domestic level, some customers opt for Economy 7 meters with multiple registers so that they can avail of lower rates at night and weekends, and from a business customer perspective, in recent years some businesses have changed their behaviour by installing on-site generation to off-set consumption during the most expensive times of the day.</p> <p>Looking towards the future, with greater penetration of low carbon technologies (e.g. electric vehicles (EVs), heat pumps, solar panels, battery storage etc) there will be much greater opportunity to adjust electricity usage patterns through changing behaviours. As EVs and heat pumps become more widely used, customers are likely to notice substantial increases in their overall electricity usage and therefore costs. For example, charging one EV at home could increase electricity consumption by between 2,360kWh to 3,998kWh per annum<sup>23</sup> (based on 9,000 miles per year). This could double a household’s electricity consumption and this would increase further for households with multiple EVs.</p> <p>As a result, customers are likely to become more willing to change their behaviours in order to reduce their overall electricity costs. This applies to all customers, e.g. from domestic customers charging EVs at home, to larger business charging fleet vehicles. The opportunities for changing behaviour will increase as new technologies become more widely used. For example, customers could install solar panels along with battery storage so that they can generate their own electricity and store it to then be used later.</p> <p>We do however believe that customers will require financial incentives to create a reason to modify their behaviour. The Consumer Council’s recent research into consumers views on energy transition<sup>24</sup> stated;</p> <p><i>‘It was emphasised again by consumers that price is a major factor to them changing their energy behaviours and buying patterns.’</i></p> <p>The UR’s Energy Strategy Consumer Research<sup>25</sup> also supports this belief that consumers need financial incentives to change their behaviour as it states;</p> <p><i>‘The evidence from this research shows that financial incentives are likely to motivate consumers to make spending decisions which will have a positive impact on reducing carbon emissions. To further motivate positive consumer behaviour change,</i></p>		

<sup>23</sup> Which? – How much does it cost to charge an electric car?, 11 August 2021: <https://www.which.co.uk/reviews/new-and-used-cars/article/electric-car-charging-guide/how-much-does-it-cost-to-charge-an-electric-car-a8f4g1o7JzXj>

<sup>24</sup> The Consumer Council – Northern Ireland consumers views on energy transition, 1 July 2021: [https://www.consumercouncil.org.uk/sites/default/files/2021-07/Northern\\_Ireland\\_consumers\\_views\\_on\\_energy\\_transition\\_consumer\\_friendly\\_version.pdf](https://www.consumercouncil.org.uk/sites/default/files/2021-07/Northern_Ireland_consumers_views_on_energy_transition_consumer_friendly_version.pdf)

<sup>25</sup> Utility Regulator – Energy Strategy Consumer Research, 22 April 2021: [https://www.uregni.gov.uk/files/uregni/media-files/Consumer%20research%20on%20climate%20change%20and%20energy%20transition\\_0.pdf](https://www.uregni.gov.uk/files/uregni/media-files/Consumer%20research%20on%20climate%20change%20and%20energy%20transition_0.pdf)

*financial incentives could be tied to key trigger points such as when old heating systems reach end of life.'*

The financial incentives can be facilitated through tariff pricing signals to encourage customers to avoid charging at peak times of the day. A roll out of smart meters would be required to enable this through time-of-use pricing. This would allow customers to reduce their total electricity bill, not just the DUoS element of their bill.

The reflection of DUoS tariff structures within electricity supplier retail tariffs is vital to ensure customers are incentivised through pricing signals. Currently there is no requirement for suppliers to pass the DUoS tariffs through to customers. For DUoS tariff price signals to be effective, the supplier will need to provide the price signals to customers in their retail tariffs using the same time bands as the DUoS tariff. In Ireland, the Commission for Regulation of Utilities (CRU) recognised this issue and placed an obligation on electricity suppliers through a standard smart tariff. In CRU's Standard Smart Tariff publication<sup>26</sup>, they make the following statements;

- *'Time-of-use will incentivise customers to shift consumption to times of the day when electricity is cheaper which will reduce the requirement to increase investment in more generation capacity.'*
- *'...the CRU has introduced obligations on electricity suppliers to take primary responsibility for engaging with electricity customers as customers transition to time-of-use.'*
- *'An important element in the customer journey to time-of-use is the Standard Smart Tariff (SST). The SST is a simple form of time-of-use tariff, similar to day / night tariffs currently available in the market but with the inclusion of one additional time band, which suppliers are obligated to make available to electricity customers.'*
- *'The rationale for requiring electricity suppliers to make the SST available to their electricity customers is to ensure electricity customers have a simple form of time-of-use tariff to compare and contrast across electricity suppliers. Moreover, by obligating electricity suppliers to make the SST available, this guarantees electricity customers a minimum level of choice of time-of-use tariff at a relatively early stage in the smart meter upgrade.'*

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<sup>26</sup> CRU – Smart Meter Upgrade Standard Smart Tariff, 10 August 2018: <https://mk0cruieqdtk6utoah.kinstacdn.com/wp-content/uploads/2018/08/CRU1818164-Smart-Meter-Upgrade-Standard-Smart-Tariff-Decision-Paper-.pdf>

<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 22	<b>Question:</b> There are a range of options for monitoring the impact of reforms, such as surveys, analysis of complaints, billing questions, and usage monitoring analysis. Which do you think would be most effective?
<p><b>Response:</b></p> <p>NIE Networks recognises that monitoring impact of reforms will be important, however we do not consider that any one of the particular options proposed in the Call for Evidence would be most effective.</p> <p>In relation to using ‘analysis of complaints’ and ‘billing questions’ as methods to monitor reforms, we assume this would require active engagement from electricity suppliers as it is the suppliers who issue bills to customers and deal with billing questions from customers. How this might work in practice will require further consideration and impact from electricity suppliers.</p>		
<b>Topic:</b> Approaches to managing the transition	<b>Question number:</b> 23	<b>Question:</b> Should consumers be protected from large bill increases caused by the reforms even if this needs to be funded by a cost elsewhere? If so, how long should the protections be in place for?
<p><b>Response:</b></p> <p>As mentioned in previous responses we consider that all tariff reforms should be subject to impact assessments and where a proposed change will result in large bill increases for some or all customers, then options for implementation could be considered at that stage, for example phasing the implementation of reforms could reduce or spread the impact for customers.</p> <p>We note that in paragraph 4.8 of the Call for Evidence, the Utility Regulator (UR) proposes that fixed price caps and floors on distribution network tariffs could be used to provide protection to customers against vast bill increases. We are unclear how this would work in practice, given that the distribution network tariffs are a small element of a customer’s overall bill so placing a cap on this small element is unlikely to provide the protection that the UR is intending. In addition, Distribution Use of System (DUoS) tariffs are set to recover an annual distribution allowance, so placing a cap on tariffs will ultimately mean that other customers will have to pay more to cover the capped element.</p> <p>We understand that tariff caps do exist in Great Britain on supplier tariffs to protect customers who do not actively change supplier and it may be more appropriate for the UR to consider a similar arrangement for supplier tariffs in Northern Ireland.</p> <p>However, if the UR does intend to consider caps on DUoS tariffs, or some other form of protection against vast DUoS bill increases then we would request further information on how this could work in practice.</p>		

Customer engagement and market understanding		
<b>Topic:</b> Customer engagement	<b>Question number:</b> 24	<b>Question:</b> How engaged do you think consumers currently are on their energy usage and tariffs? For example, are they more, less, or adequately engaged relative to what would be expected?
<p><b>Response:</b></p> <p>The current level of consumer engagement in energy usage and tariffs is dependent on the type of customer. For domestic and small business customers, engagement is probably quite low. The Utility Regulator (UR) recently published findings from research<sup>27</sup> they carried out with 500 business customers. The UR found that only 37% of those surveyed have switched electricity supplier in the last five years despite savings being available. The UR and Consumer Council are encouraging business consumers to check their bills and review their energy spend. While some customers may be interested in the overall cost of electricity, they may be less concerned or knowledgeable about the detail behind the total cost, including their energy usage and tariffs, and specifically the various elements that make up the final retail tariff (including Distribution Use of System (DUoS) charges).</p> <p>Larger business customers are more likely to be aware of the various elements that make up the final tariff and are also likely to be more engaged in managing their electricity usage and tariffs. We found evidence of this through our MIC Charging project which resulted in changes to capacity charging for medium and large business customers. To date, NIE Networks has written to EHV and HV connected customers to explain how the changes will impact their bills and we have received a good level of response and engagement from these customers as they are keen to understand the changes and what steps they can take to reduce the impact on their business.</p> <p>In relation to DUoS tariffs, we assume that domestic and small business customers are likely to have very little, if any, knowledge of the DUoS tariffs. Since the customer billing relationship is with their electricity supplier, it means that customers will use the supplier tariffs as the basis for their financial decisions, rather than the DUoS tariffs.</p> <p>However, for tariff reform we must look to the future, and we would expect that as customers become more reliant on electricity with increased use of electricity for EVs, heat pumps etc, then customers at all levels will become more engaged in both their electricity usage and also the tariffs. In Ireland, the Commission for Regulation of Utilities (CRU) introduced obligations on electricity suppliers to take primary responsibility for engaging with electricity customers as customers transition to time-of-use tariffs<sup>28</sup>. We would welcome similar obligations in Northern Ireland in order to keep the process simple for customers.</p>		

<sup>27</sup> UR – Business consumers encouraged to review their energy spend, 1 July 2021: <https://www.uregni.gov.uk/news-centre/business-consumers-encouraged-review-their-energy-spend>

<sup>28</sup> CRU – Smart Meter Upgrade Standard Smart Tariff, 10 August 2018: <https://mk0cruieqdjtk6utoah.kinstacdn.com/wp-content/uploads/2018/08/CRU1818164-Smart-Meter-Upgrade-Standard-Smart-Tariff-Decision-Paper-.pdf>



<b>Topic:</b> Customer engagement	<b>Question number:</b> 25	<b>Question:</b> Would you identify particular demographics as having lower engagement? If so, why is this the case? Is it more due their own unwillingness to engage, or that the market is not very accessible?
<p><b>Response:</b></p> <p>As covered in our response to question 24, we consider that domestic, (and vulnerable customers in particular) and small businesses have lower engagement levels compared to larger business customers. At present all domestic and c. 90% of small business customers have quarterly read meters which do not provide the customer with detail on how and when the customer uses electricity. In contrast the meters installed at large energy user premises capture their average consumption each half hour allowing customers to respond to the cost reflective price signals within their tariff and so reduce their electricity bill.</p>		
<b>Topic:</b> Customer engagement	<b>Question number:</b> 26	<b>Question:</b> Do you have views on best method to engage customers more?
<p><b>Response:</b></p> <p>The key factor for customer engagement is information. Customers need information on their electricity usage and usage at different times of the day in order to understand how and when they are using electricity. This can be facilitated through a smart meter roll out which would then provide customers with the information they need to work towards changing behaviours in relation to usage to ultimately reduce their bills and potentially reduce carbon emissions.</p> <p>The provision of clear and accessible energy information for customers is also required to help customers to understand how to manage their electricity usage, including information on new technologies, to reduce their bills. Customers will, in most instances, require access to fair, impartial and comprehensive advice and information to allow informed decision making. The formation of an independent body to furnish this advice to customers will be important – such as the one stop shop proposed in the DfE Energy Strategy consultation<sup>29</sup>.</p> <p>In relation to tariffs, we do not think it is reasonable to expect domestic or business customers to be informed about, or engaged in the Distribution Use of System (DUoS) element of tariffs. DUoS charges account for less than a quarter of the retail tariffs charged by suppliers to domestic and small business customers. To create customer engagement, the process and tariffs need to be simple. Therefore, we would welcome the Utility Regulator considering obligations on suppliers to structure their retail tariffs in the same format as the DUoS tariffs (e.g. where a DUoS tariff has time-of-use unit charges, then the supplier tariff should also include the same unit charge structure). This approach has been adopted in Ireland where the Commission for Regulation of Utilities (CRU) introduced obligations on electricity suppliers to take primary responsibility for engaging with electricity customers as customers transition to time-of-use tariffs, and suppliers are obligated to make a Standard Smart Tariff (a simple form of time-of-use tariff) available to electricity customers<sup>30</sup>.</p>		

<sup>29</sup> DfE - Energy Strategy for Northern Ireland Consultation on Policy Options, March 2021: <https://www.economy-ni.gov.uk/sites/default/files/consultations/economy/energy-strategy-for-ni-consultation-on-policy-options.pdf>

<sup>30</sup> CRU – Smart Meter Upgrade Standard Smart Tariff, 10 August 2018: <https://mk0cruieqjtk6utoah.kinstacdn.com/wp-content/uploads/2018/08/CRU1818164-Smart-Meter-Upgrade-Standard-Smart-Tariff-Decision-Paper-.pdf>

<b>Topic:</b> Customer engagement	<b>Question number:</b> 27	<b>Question:</b> Should unengaged customers be encouraged to increase their understanding of the market, or can they be trusted to opt-in?
<p><b>Response:</b></p> <p>Our understanding from the Call for Evidence (CfE) is that customer engagement is being linked to customers opting into tariffs or choosing tariffs. As noted in our responses to earlier questions, we do not believe that Distribution Use of System (DUoS) tariffs should be available for customers to opt in and out of.</p> <p>NIE Networks considers that customer engagement should not be about customers picking a DUoS tariff. Instead, customer engagement should be about customers getting involved in energy transition, changing behaviours to reduce carbon emissions and reduce costs. There should be a focus on educating customers so that they can become engaged in energy transition. We understand that the DfE Energy Strategy consultation<sup>31</sup> also highlighted the importance of consumer education as it proposed that a ‘one stop shop’ should be developed to provide information to energy consumers in the future. While we accept that consumer choice in relation to supplier tariffs would be part of consumer engagement, we believe that this is out of the scope of this CfE on distribution tariffs.</p>		
<b>Topic:</b> Customer engagement	<b>Question number:</b> 28	<b>Question:</b> At what stage in the reform process would it be optimal to engage consumers and (how) should this vary over time?
<p><b>Response:</b></p> <p>The Utility Regulator should be engaging with customers (both consumers and exporters) throughout the tariff reform consultation process. This can include engaging with customer representative bodies (representing all levels of customers from domestic, to small/medium businesses and large business customers) as well as any individual customers who engage in the consultation process.</p> <p>In GB, Ofgem published papers at various stages of their Targeted Charging Review. These included working papers explaining the process and principles upon which tariff reform options would be considered, minded to consultations and draft impact assessments and draft decision papers in advance of the final decision. These papers served to provide customers and stakeholders with updates and next steps, and a process for customers to have their views considered. Furthermore, the tariff reform process was supported by workshops and webinars to discuss tariff reform delivery options as well as updates on project progress and consultation supplementary analysis.</p>		

<sup>31</sup> DfE Energy Strategy for Northern Ireland – Consultation on Policy Options, March 2021: <https://www.economy-ni.gov.uk/sites/default/files/consultations/economy/energy-strategy-for-ni-consultation-on-policy-options.pdf>

## Other challenges and risks

**Topic:** Other challenges and risks

**Question number:** 29

**Question:** Are there any unique features of the Northern Ireland electricity distribution market that are particularly important to account for in the transition?

**Response:**

We have listed several points below which are unique to Northern Ireland (NI) and therefore need to be considered for Distribution Use of System (DUoS) tariff reform:

- Connection charging policy - Distribution connection costs borne by a connecting customer in NI are significantly higher when compared to connecting customers in Great Britain (GB) and the Republic of Ireland (RoI). In NI, the distribution connection charging policy requires the full connection charge, including network reinforcement (up to one voltage level up), to be levied directly on the connecting customer. By contrast, in GB customers pay upfront for new distribution network connecting assets but only a share of any necessary reinforcement of the upstream network. The remainder of reinforcement costs is socialised and recovered within GB network charges or through subsequent connections. Furthermore, Ofgem is currently considering reducing, or removing entirely, any network reinforcement costs included in charges applied to customers connecting LCTs. In RoI, customers only pay a proportion of the cost of connection and the remainder of reinforcement costs is socialised.

NIE Networks have separately provided substantial evidence to UR on the need for a change in distribution connection charging in NI to facilitate the uptake of low carbon technologies (LCTs) and electric vehicles (EVs) and encourage demand growth.

- Smart metering – the absence of smart metering makes NI unique compared to other jurisdictions. Smart meters have already been rolled out across Europe, with Italy, Sweden, Finland, Spain and Norway having reached close to 100% penetration. In January 2019, the first phase of a £1.1 billion national electricity meter replacement programme to introduce smart meters to homes and businesses was announced in RoI. This follows positive trials in RoI demonstrating a 2.5% reduction in overall demand and an eight per cent reduction in energy in peak-time demand. These results are broadly in line with experiences in other European countries, where total energy savings were in the region of two to three per cent. RoI has currently reached approximately 15% of homes with smart meters in its rollout programme and smart tariffs are being offered by most major suppliers. Despite initial teething problems experienced in GB, the Department for Business, Energy and Industrial Strategy (BEIS) is supportive of a continued roll-out, citing potential savings of £40 billion between now and 2050.
- The Integrated Single Electricity Market (ISEM) – NI is included within the wholesale electricity market for the island of Ireland and must operate under the Trading and Settlement Code (TSC) which provides the rules and procedures concerning the sale and purchase of wholesale electricity in the market by which market participants must operate.

<p><b>Topic:</b> Other challenges and risks</p>	<p><b>Question number:</b> 30</p>	<p><b>Question:</b> There are a number of examples of tariff reform that have taken place in other countries. Are there specific examples that can be closely compared to the market in Northern Ireland? How important is it that the adopted reform approach is one that has been tried and tested elsewhere?</p>
<p><b>Response:</b></p> <p>In general, there are advantages to Northern Ireland (NI) being a ‘fast follower’ of other jurisdictions in relation to tariff reform. NI could take advantage of vast research, analysis and learnings that other countries have already completed on tariff reform to facilitate energy transition.</p> <p>In Great Britain (GB), Ofgem, supported by Distribution Network Operators (DNOs) initiated tariff reform projects several years ago. They have carried out significant work to date and we consider it critical for the Utility Regulator (UR) to provide a more detailed assessment of the factors that GB have already taken into consideration and the decisions they have made on tariff reforms. Substantial information is available on Ofgem’s website for the Targeted Charging Review and the Access and Forward-looking Charges Significant Code Review in addition to their dedicated webpage ‘Charging Futures’<sup>32</sup>.</p> <p>We note the Call for Evidence (CfE) paper includes reference to the GB tariff reform projects in paragraph 4.43. While we have provided some references to, and information on the Ofgem tariff reform projects earlier in our response, we consider that more detail needs to be provided by the UR on these projects as NI can use the learnings from these projects to assist with the options and decisions on tariff reform for NI.</p> <p>In relation to examples of tariff reform from other countries, we note that the CfE provides several examples of tariff options that have been introduced in other countries with varying degrees of success. It is not clear whether these tariffs were introduced to deal with energy transition or for other reasons, however we assume that they are not tariffs designed to facilitate the energy transition since most of the tariffs reform examples provided are not recent (e.g. examples provided from 1970’s, 1997, 2009 and 2012).</p>		

<sup>32</sup> Charing Futures webpage: <http://www.chargingfutures.com/>

## Any other comments

### Please provide any other comments:

We have provided some comments below in addition to our responses to the CfE questions.

- Tariff Reform Project

NIE Networks welcomes the initiation of the Utility Regulator's (UR) tariff reform project through this Call for Evidence (CfE) and we would welcome further information being provided on the overall tariff reform project plan and the key steps.

- Tariffs for New Technologies – Battery Storage

The introduction of new technologies will require consideration and decisions on applicable Distribution Use of System (DUoS) tariffs. Specifically, decisions will be required for DUoS tariffs to be applied to battery storage customers as we understand that different market rules apply for battery storage customers which impacts how these customers can be charged. We urge the UR to consider this issue outside of this consultation process as charging arrangements need to be agreed prior to the connection of battery storage customers to the distribution network.

- Network Costs to Customers

The UR's CfE is limited to a review of distribution network tariffs; whereas we note that in GB, Ofgem took a holistic approach to their review by including all network costs levied on customers (i.e. transmission and distribution tariffs as well as connection costs). Limiting the review to distribution tariffs carries risk that new customers could make decisions about whether to connect to the transmission or distribution network based on distortionate price signals due to different policies applied to connection charging as well as differences in transmission and distribution network tariffs. There could be an unintended consequence of this that customers connect to the transmission network where it would be more beneficial from network management perspective for the customer to be connected to the distribution network, or vice versa.

- Tariff Reform for Energy Transition in Other Jurisdictions

While the CfE does provide some examples of tariff structures in other countries (some of which were implemented a number of years ago), it would however be extremely useful to stakeholders if the UR provided information on recent tariff reforms being considered by other countries to support energy transition. For example, in our response to the CfE questions we have referred to Ofgem's projects on network tariff reforms; the Targeted Charging Review and the Network Access and Forward-Looking Charges projects.

- Further discussion with UR

Chapter three of the CfE paper sets out some information and highlights some concerns in relation to each of the five key 'drivers for change' (i.e. distributed energy resources; increasing popularity of electric vehicles; development of battery technology; the emerging market for energy aggregators; and increasing digitisation and data usage). We would welcome further discussion with the UR on these issues to provide clarity on the drivers and issues from the Distribution System Operator perspective.

