Energy Strategy Call for Evidence

Response Template

How to Respond

This template replicates the questions asked in the Call for Evidence found at: https://www.economy-ni.gov.uk/energy-strategy-call-for-evidence

It is recommended that you should read the full consultation document before completing your response. Please note that the text boxes used throughout this template can be expanded to accommodate your response – there is no character limit.

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Early responses are encouraged but all responses should arrive no later than **5pm on 20 March 2020.**

Please send your response to:

energystrategy@economy-ni.gov.uk

Or alternatively by post to:

Energy Strategy
Department for the Economy
Netherleigh
Massey Avenue
Belfast
BT4 2JP

Quote the reference "**Energy Strategy Call for Evidence 2019**"

1. General Information

1. **Name (required)**

[redacted]

2. **Are you responding:**

   ☐ **as an individual (please complete 3 to 5 below)**

   ☒ **on behalf of an organisation / company (please complete 6 to 8 below)**

If you are responding as an individual:

3. **E-mail address**

4. **Address**

5. **If you are responding as an individual, please read the Privacy Notice and tick the statement below as applicable.**

   ☐ **All responses will be published on the Department for the Economy website following completion of the Call for Evidence process. Please tick if you are content for your name to be published alongside your response.**

If you are responding on behalf of an organisation / company:

6. **Organisation / Company**

Pinsent Masons LLP

7. **Position within Company / Organisation**

[redacted]

8. **Contact details**

   a. **E-mail address**

[redacted]

   b. **Address**

[redacted]

2. Energy in Northern Ireland

Q1. What lessons can we learn from elsewhere in addressing energy within an overarching climate action framework?

Q2. What are the key considerations for decarbonising Northern Ireland's energy sector given existing linkages to other jurisdictions?

Q3. To what extent should Northern Ireland implement the key energy-related recommendations from the CCC 'Reducing Emissions in Northern Ireland' report?

Q4. Do you agree with the 30-year timeframe? If not, please state your preferred approach and reasons.

Q1. Whilst Northern Ireland does not currently have any separate climate change legislation, greenhouse gas emissions from Northern Ireland contribute to the UK total under the Climate Change Act 2008 (as amended). As a region, Northern Ireland should make a fair and equitable contribution to meeting the UK's climate change commitments.

Northern Ireland requires proposed policy measures for addressing the threat of climate change on a holistic/all of system basis. The Climate Action Plan[1] is a useful framework to look to which sets out the measures by which Ireland can reduce its emissions on a cross-sectoral/economy-wide basis with "future fit" governance structures and regular monitoring to ensure effective implementation of policy. Unlike the other devolved administrations of the UK, Northern Ireland has devolved responsibility for energy policy (other than nuclear) so we can address energy within an overarching climate action framework, appropriate and tailored for Northern Ireland.

Q2. Northern Ireland has unique characteristics that bring different opportunities and challenges for decarbonisation compared to the remainder of the UK. Northern Ireland is a member of the all-island Integrated Single Electricity Market (I-SEM) shared with the Republic of Ireland. Maximising market efficiencies, avoiding market distortions and ensuring a level playing field across the island of Ireland are therefore key considerations with policy frameworks/design.

The gas network in Northern Ireland is not nearly as extensive as Great Britain, a significant portion of our housing stock in Northern Ireland is heated by oil, good progress has been made with renewable electricity, EV uptake has been minimal thus far and fuel poverty levels are high. These are all local market characteristics that mean the pathways to decarbonise need tailored to Northern Ireland's social and economic circumstances to ensure a cost effective and just energy transition for Northern Ireland. Cost management will be key. An appropriate mechanism/methodology will need to be determined as to what is "just" in a Northern Irish context having regard to social and economic factors in Northern Ireland such as average income, fuel poverty levels, etc.

Q3. The Committee on Climate Change (CCC) noted in its February 2019 report that the current policies are insufficient to achieve the required reduction for Northern Ireland to make a fair contribution to the UK's fifth carbon budget. The series of policy recommendations made in the report were useful.

[1] Climate Action Plan https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf

The work however needs refreshed as the report was prior to the UK, Ireland and most recently the EU committing to a net zero/climate neutrality target by 2050.

Q4. Yes. Both the UK and Ireland have now committed to achieving net zero economies by 2050. As per the CCC report, Northern Ireland must make its fair contribution if the UK is to achieve its target. Likewise if Northern Ireland fails to keep pace with Ireland's energy transition then the risk of a two-speed market developing is increased. Therefore Northern Ireland must keep apace with change across the UK and Ireland.

As energy is a devolved responsibility of the Northern Ireland Executive, it is a local responsibility to ensure that appropriate governance structures are put in place. Regular reviews will be key to monitoring progress and delivering upon our commitments. The Climate Action Plan[2] includes a robust governance framework whereby it is monitored quarterly and updated annually.

[2] Climate Action Plan, Section 5 (Governance Structure), page 26 https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf

3. The Energy Transition in Northern Ireland

Q5. What are the unique characteristics of Northern Ireland that need to be considered in a net zero carbon energy transition?

Q6. Is your organisation undertaking or planning to undertake projects to support the energy transition? If so, please provide further details.

Q5. The prevalence of oil heating in the domestic heat market, the high rates of fuel poverty, the need for increased penetration of the gas grid, the relatively low-levels of interconnectivity in gas and electricity both North/South and East/West, Northern Ireland's current lack of support / market stabilisation for renewables, Northern Ireland's lack of energy importation options beyond interconnectors, temperatures consistently low during winter periods / when heat demands are high, a plentiful wind resource and increasingly high levels of non-dispatchable renewable generation. All of these pose their own brand of challenges (and opportunities) to net zero in Northern Ireland by 2050. Any approach to decarbonisation strategy must take into account the particular economic, social and political circumstances in Northern Ireland.

Q6. At Pinsent Masons, we understand that every business impacts on its environment, which is why we take our responsibility to the world around us seriously. Our Sustainability (Environment and Energy) Policy confirms our commitment to minimise the environmental impact of our business operations. It covers all operational areas including the sourcing of materials, waste and recycling, energy consumption, business travel and the provision of information and training. The Policy is implemented through our key objectives and targets as set out below.

Energy

In 2015 we set a target to reduce absolute energy consumption across UK offices by 20% by 2020 when measured against a 2014 baseline. Consumption data for the period April 2018 to March 2019 shows that we have achieved a 26% reduction, exceeding our target a year ahead of schedule. The reduction is a result of the ongoing consolidation of office space (e.g. half of the UK offices have become agile) and the implementation of 'technical' energy efficiency measures.

Over the same period, annual consumption measured against our agreed metrics has reduced as follows:

- kWh per square foot occupied reduced by 9%
- kWh per full-time equivalent reduced by 34%, despite a 13% increase in staff numbers over the same period
- kWh per £1,000 of revenue reduced by 45%

Carbon emissions associated with energy consumption have reduced by 51% since 2014.

Waste

Our key goal is to push waste streams up the Waste hierarchy to:

- Divert all general waste from landfill
- Separate waste that is currently being incinerated for energy from waste so it can be subject to further recycling/reuse

- Reduce the volume of disposable items consumed by the business

Our progress includes:

- 93% of waste is being diverted from landfill across UK offices
- 25% less printing occurs across UK and Europe
- Removal of disposable cups and plastic water bottles from all UK offices
- Recycling of our confidential waste paper to make toilet rolls for use in our London HQ
- Replacement of plastic food containers with Vegware (plant based products) and the introduction of new bins (London only so far) to collect Vegware items and food waste for composting

Business Travel and Carbon Neutral

Carbon emissions associated with business travel reduced by 20% between 2015 and 2018. We have been certified Carbon Neutral for business travel since 2007. Most recently, we offset emissions by investment in an onshore wind farm located in Rudong County along the Huanghai Sea coastline of Jiangsu province, China. The project is validated and verified under the Clean Development Mechanism and is delivering 170,000 tonnes of CO2e emissions reductions each year, contributing to UN Sustainable Development Goal (SDG) 13 - Climate Action.

4. Consumers

Q7. How should we ensure that energy remains affordable for domestic consumers? What approach should be taken to eradicate fuel poverty?

Q8. What steps could be taken to improve the relative cost competitiveness of larger non-domestic consumers?

Q9. Is a strategic position of "enable and protect" the correct policy stance?

a) What policies or schemes are needed to enable active consumers?
b) What policies or schemes are needed to protect vulnerable consumers?

Q10. What types of advice and information are required by all consumers and what are the best mechanisms for facilitating this?

Q11. Are there examples of successful citizen energy projects in Northern Ireland and elsewhere that have delivered improved energy efficiency and/or clean energy to local communities?

Q12. What opportunities are there in both urban and rural areas for citizen energy communities in Northern Ireland? What role could government have in facilitating these?

Q13. What evidence can you provide that identifies the challenges and opportunities for NI energy consumers in decarbonising energy?

Q7. Given the high levels of fuel poverty in Northern Ireland, it is critical that energy remains affordable during the transition to a zero carbon economy and costs are allocated fairly and efficiently across the customer base as discussed earlier. We must take steps to ensure that consumers are not penalised for being early adopters of new technologies etc. The focus should be on moving up-front costs away from the consumer in terms of energy efficiency / low carbon developments in the home and reducing financing costs in respect of significant infrastructure works / network developments required. Encouraging the migration of transport from diesel / petrol to electricity and gas networks may also help with the socialisation of costs required in connection with such works / network developments.

Q8. As per the Ministerial Energy & Manufacturing Advisory Group Report (EMAG Report),[3] energy costs remain a significant challenge for local manufacturers and other non-domestic consumers. Electricity prices for large energy users and energy intensive manufacturers are consistently higher in Northern Ireland than in Ireland, despite being in the same all-island electricity market. Such large non-domestic consumers could be made more cost competitive through a reallocation of energy costs (i.e. network charges etc.) in line with the approach taken in Ireland and other European markets.

In conjunction with Invest Northern Ireland and the wider sector, effective policy tools should also be developed to harness the significant potential of Corporate PPAs to meet electricity demand of larger non-domestic customers from renewable sources. This should be based on input from an industry advisory group that should be established to look at the barriers and drivers for on-site and off-site

[3] Ministerial Energy & Manufacturing Advisory Group Report, https://www.economy-ni.gov.uk/sites/default/files/publications/deti/EMAG%20Report%20March%202016%20-%20submitted%20to%20DETI_0.pdf

Corporate PPA opportunities in Northern Ireland.

We have been involved in a number of Corporate PPAs in Northern Ireland for the procurement of electricity by industrial offtakers such as Dale Farm (through a private wire arrangement with Ireland's largest private wire solar park) and Brett Martin Limited (for its plastics manufacturing facility in Belfast). However, widespread uptake of Corporate PPAs is heavily dependent on the establishment of a positive policy and regulatory environment. We have been analysing some of the practical policy measures that could be introduced in a Northern Irish context to encourage growth in this area:

- **"Greenification" of Corporates** – important to secure a sufficient level of demand, pricing is key in this regard. Additionality (i.e. where a Corporate PPA has the direct effect of adding new renewable generation to the grid that would not otherwise have been created) should be incentivised through an attractive system of Guarantees of Origin (GoOs).
- **Financial Incentives** – Tax and non-tax incentives could be used to encourage generators and corporate buyers to put in place Corporate PPAs e.g. rates reductions on generator sites, capex or opex tax savings.
- **Supportive Policy Environment** – Possibility of preferential status for Corporate PPAs when obtaining planning consents / grid rights. Public Sector entities could be mandated to procure power through Corporate PPAs, providing a clear example to industry and playing a key role in establishing a market for Corporate PPAs in Northern Ireland.
- **Credit Risk** – In order for a developer to put in place the necessary financing, the credit rating of the buyer under a Corporate PPA must be satisfactory to lenders. This will prevent many SMEs from entering Corporate PPAs. A Power Purchase Guarantee Scheme (as adopted in Norway, whereby PPAs are backed by guarantees administered by the Norwegian Export Credit Guarantee Agency) would lower risk for generators and enable Northern Irish Corporates to enter into power purchase agreements.
- **Syndications / Consortia / Trading Platforms** – Selling electricity via a trading platform to a group of corporate buyers will help diversify credit risk and enable SMEs to share transaction costs.
- **Lack of Standardised Contracts** – Corporate PPAs require a high level of expertise and can be costly and time consuming to put in place. A balanced market standard Corporate PPA adopted for Northern Ireland would simplify and speed up the contracting process, reducing legal and commercial costs.

Policy and regulatory support for the mutualisation of core energy infrastructure assets in Northern Ireland has been a success and delivered significant cost savings for consumers.

5. Energy Efficiency

Q14. What, if any, energy efficiency target or targets should be set for Northern Ireland?

Q15. How should we define, measure and monitor energy efficiency to optimise its potential in our homes, business, economy and environment?

Q16. What are the most important policy levers for government to ensure zero carbon in:

a) New domestic and commercial buildings by 2050?;

b) Existing domestic and commercial buildings by 2050?

Q17. What should the future of energy efficiency support look like and who should be the key delivery bodies?

Q14. Energy efficiency will play an important role in managing the demand for electricity and gas in Northern Ireland and facilitating the increasing demand associated with the electrification of other sectors.

The updated Energy Efficiency Directive and Energy Performance of Buildings Directive, as amended in 2018 by the introduction of the Clean Energy Package set out some useful frameworks which could help inform the targets and measures put in place in Northern Ireland e.g. energy efficiency renovations to be made to at least 3% of government owned buildings annually, establishing long term energy efficiency targets / strategies and ensuring all new buildings are nearly zero-energy buildings (NZEB).

The Climate Action Plan also includes some useful strategies for improving energy efficiency by meeting higher energy performance standards and increasing retrofit activity, committing to 50,000 efficiency retrofits per annum by leveraging economies of scale and smart finance initiatives.

New buildings provide an excellent opportunity for a "quick win" in terms domestic energy efficiency measures. Policies should be implemented in respect of all new buildings as a matter of priority (given that every new building that it not of a sufficient energy efficiency standard is a missed opportunity). All new buildings should be capable of being carbon neutral with minimal retrofit i.e. high levels of insulation and installation of a boiler capable of running on hydrogen for all properties connected to the gas network.

6. Heat

Q18. What is the appropriate pathway and timeline for the decarbonisation of heat between now and 2030, and subsequently to 2050?

Q19. What are the appropriate ways to measure the progress of decarbonising heat?

Q20. What are the most cost-effective and sustainable steps that government might take to accelerate the reduction of the carbon intensity of heating fuels?

Q21. Is decarbonisation of the gas grid a viable option and what evidence can be provided on both the speed and affordability of decarbonising the gas grid?

Q22. What evidence can you provide on the opportunities for district heating schemes in Northern Ireland and where should responsibility lie for facilitating these?

Q23. Can you provide any evidence or information on the opportunities for geothermal heat supply?

Q18. The Heat sector in Northern Ireland is characterised by a high dependence on heating oil, with approximately 68% of homes reliant on oil fired boilers.[4] In terms of reducing carbon intensity, we are likely to see the move away for some domestic (and industrial) consumers from heating oil and solid fuels and increase the number of connections to our existing gas infrastructure where practicable. It is vital that we capitalise on our investment in the gas network as far as is possible. This should form the initial stage of our pathway from 2020 to 2030 and will lay the foundation for an eventual transition to a decarbonised gas network.

It is important to bear in mind however that 22% of the population in Northern Ireland are in fuel poverty, spending more than 10% of their household income on heating their homes.[5] It is not currently desirable (or politically palatable) to simply impose a penalty or disincentive on those using home heating oil.

While we are increasing the number of connections to the gas network, key stakeholders in the gas industry should also be incentivised to invest in the decarbonisation of the gas network, primarily through a transition to hydrogen (and possibly biomethane).[6] This can be undertaken simultaneously with the first stage of the pathway from 2020 to 2030. As set out at Q48, we believe an adoptive approach to regulation will be an important component underpinning such activity.

From 2030 to 2050 we would then hope to see the transition to a fully decarbonised gas network through the introduction of hydrogen and biomethane to the gas network. The eventual transition to a fully decarbonised gas network will play a massively significant role in establishing a net zero economy for Northern Ireland.

An important component to delivering on this pathway will be an appropriate policy framework that provides

[4] Consumer Council, Domestic Heating Oil and Fuel Poverty, http://www.niassembly.gov.uk/globalassets/documents/social-dev/fuel-poverty/heatingoil_fuel-poverty.pdf
[5] Ibid
[6] A recent study conducted by the Queen's University of Belfast indicates that as a result of Northern Ireland's large agriculture sector there is significant potential for the generation of biomethane in Northern Ireland. It may be possible for a combination of hydrogen and biomethane to be used in the gas network.
Queen's University Belfast, Quantification of Anaerobic Digestion Feedstocks for a Regional Bioeconomy, https://pureadmin.qub.ac.uk/ws/files/159416286/robin_curry.pdf

incentives to suppliers and gas providers to increase the amount of biogas and hydrogen on the system. The wholesale electricity market provides some useful frameworks as to how to incentivise such a transition (i.e. the NIRO Scheme).

Q20. As above, we envisage that the most cost-effective long term method to accelerate the reduction in the carbon intensity of heating fuels is to transition to a decarbonised gas network. It is likely to be impracticable, impractical and expensive to fully electrify heat in Northern Ireland. Therefore, decarbonising the gas network at source is likely to deliver efficiencies in a Northern Irish context.

Q21. Yes, decarbonised gas is already available via gas from anerobic digestion and hydrogen gas. Decarbonisation of the gas network can be achieved through a transition to hydrogen (combined with biomethane insofar as technically feasible). An assessment will have to be made of the existing gas infrastructure in Northern Ireland to confirm the extent of any retrofitting required along with some policy / legal changes to ensure the policy framework underpinning the gas sector in Northern Ireland adequately covers such new sources of decarbonised gas in the Northern Ireland system. In Great Britain, the Iron Mains Risk Reduction Programme has been underway since 2002 and is due to complete in 2032.[7] The programme replaces old iron pipelines with new plastic ones at a cost of circa £1 billion a year to consumers. As Northern Ireland's pipelines have been rolled out more recently, there are a number of plastic pipelines already in place that are more likely to be suitable for use with hydrogen, which should place Northern Ireland in an advantageous position.

The H21 Leeds City Gate project started in July 2016 with the aim of determining the feasibility, from both a technical and economic standpoint, of converting the existing natural gas network in Leeds to 100% hydrogen in a manner designed to minimise disruption for existing customers and deliver heat at the same cost as natural gas.[8] The feasibility report concluded that conversion of the UK gas network to 100% hydrogen was both technically possible and could be delivered at a realistic cost.

The total cost of conversion, including hydrogen production and storage, all associated infrastructure and appliance conversions as well as intraday and inter-seasonal storage facilities in salt caverns in the region, (similar to that proposed at Islandmagee) would be in the region of £2bn. The report proposes a regulatory finance model for the socialisation of costs and amortisation of return for the industry. A similar mechanism was recently used for the financing of the Gas to the West network and so this is a tried and tested approach for financing gas infrastructure in Northern Ireland.

A partnership with the H21 Leeds City Gate project could be a useful initial scoping exercise and an opportunity to extract the lessons learned for use on a wider scale in Northern Ireland.

[7] Health and Safety Executive, Iron Mains Risk Reduction https://www.hse.gov.uk/gas/supply/mainsreplacement/index.htm
[8] H21, Leeds City Gate Report, https://www.northerngasnetworks.co.uk/wp-content/uploads/2017/04/H21-Report-Interactive-PDF-July-2016.compressed.pdf

7. Power

Q24. What is the appropriate pathway for the decarbonisation of power from now to 2030, and subsequently to 2050?

Q25. What target for electricity consumption generated from renewable sources by 2030 is ambitious, achievable and affordable?

Q26. How can the new infrastructure necessary to meet a new renewable electricity target be delivered in a timely, affordable and acceptable way for consumers and society?

Q27. What innovations and solutions could contribute to meeting a new renewable electricity target?

Q28. What market incentives and support are necessary for investors to deliver the investment in renewable generation assets at a scale that will achieve a new renewable electricity target?

Q29. What steps need to be taken by Government to facilitate investment in offshore and marine renewables for NI?

Q24. There is potential to further decarbonise the power sector in Northern Ireland through broader support for intermittent renewables. An important preliminary consideration is that in order to plan a pathway to further decarbonise power, there needs to be an integrated plan for Heat and Transport in order to properly assess issues such as peak demand etc.

At present, Northern Ireland does not have a RES-E target for 2030. The Strategic Energy Framework of 2010 has been a successful mechanism for supporting the integration of renewable electricity, with Northern Ireland having met (and indeed exceeded) its 40% RES-E target by 2020. The new energy strategy for Northern Ireland needs to provide a clear road map for emissions reductions in the power sector out to 2050.

Onshore wind has proven to be the most common renewable generation technology deployed in Northern Ireland to date. However further deployment is likely to be limited given that many suitable sites have already been utilised. Further significant investment in onshore wind is likely dependant on either (i) changes to the consenting regime to facilitate large scale merchant projects and repowering opportunities; or (ii) a new support scheme.

There is over 200 MW of solar PV generation capacity connected in Northern Ireland. The costs of deploying solar PV have fallen dramatically in recent years and continue to fall. Northern Ireland is well placed to benefit from second mover advantage in this area.

There are currently no offshore wind projects planned for Northern Ireland. Northern Ireland has deep waters in the North Channel which has prevented the deployment of fixed turbines. However floating offshore turbine technology has advanced significantly in recent years. These turbines can be deployed at relatively low cost, being constructed at portside and then being towed into position. This technology could enable Northern Ireland to take advantage of a previously unsuitable body of water. Offshore wind is also suitable for deployment at scale, facilitating the step change increase in renewable generation necessary to decarbonise the Electricity sector as well as supporting Transport (e.g. electric vehicles) and Heat (e.g. heat pumps and hydrogen production through electrolysis).

Long term support for, and cost reduction in, low carbon technology is critical to the ongoing expansion of renewable generation technologies and ensuring developer certainty and a route to market for lowest cost renewable generation. However the increasing penetration of renewable technologies means that investment in the networks' resilience will be essential.

Northern Ireland could benefit from taking advantage of interconnection opportunities with Scotland and Ireland by expanding interconnector capacity. For example, generators in Scotland will be keen to avoid curtailment and will be able to offer comparatively low prices for electricity in Northern Ireland, building resilience into the Northern Irish grid. Equally Ireland is likely to see a large increase in renewable generation under the Climate Action Plan (RESS and CPPA target).

Northern Ireland's existing power stations could be converted to fast, flexible peaking gas turbines in order to meet demand when renewable generation is low. As the gas network converts to hydrogen these turbines could then effectively be decarbonised. Alternatively, conventional, steady-state power generation could be decarbonised through the introduction of carbon capture and storage systems (CCS). However CCS may be less appropriate for Northern Ireland, given (i) the costs of retrofitting existing generating plant; and (ii) the distance to any viable storage sites, most likely in Morecambe Bay or in Ireland, being prohibitive. Notably if storage sites are not in close proximity, this could place further pressure on the Transport sector. Further study / modelling on CCS in Northern Ireland is required.

Q25. On behalf of IWEA, Baringa has modelled two different scenarios for the energy sector on the island of Ireland in 2030. "Renewable Energy" is a scenario where the island of Ireland continues to be a world leader in renewable electricity and in wind and solar power in particular. Ireland achieves a renewable energy target of 70% by 2030 in this scenario. "Fossil Fuel" is a scenario where there is no further development of renewable generation after the 2020 target is met. In this scenario, Ireland still primarily relies on fossil fuels to generate electricity in 2030. This report looked at the costs and benefits for NI end consumers of the Renewable energy scenario v the Fossil Fuel scenario over the period 2020 -2030 and can be found here: https://www.iwea.com/images/files/70by30-report-final.pdf

There is also a useful report that has been published by Poyry (now AFRY) IN October 2019 showing how renewable energy can deliver low cost power to homes and businesses. It is entitled Cheaper and Greener and can be found here: https://www.iwea.com/images/files/iwea-cheaper-and-greener-final-report.pdf

The Department should establish the net consumer value of RES-E supported scenarios out to 2030 and beyond as a next step following this call for evidence.

Q27. We have presented at various industry events on innovations and solutions that could contribute to meeting a new renewable electricity target in Northern Ireland. Our presentations can be found here:

- **Delivering 15% of Electricity Demand from Renewable Sources under CPPAs** – Presentation on the existing policy context for corporate PPAs in Ireland, the main barriers to growth and potential policy instruments / design solutions to facilitate corporate PPAs as a potential route to market for renewable projects.

Renewable Energy Summit 2020.PPT

- **Route to Market for next Phase of renewables in Northern Ireland** – Presentation on need to avoid a two-speed market between both Northern Ireland and Ireland and Northern Ireland and the UK, through the adoption of a support scheme for renewable electricity.

NI Energy Forum 2019 (Oct_19).pptx

Q28. In recent years, renewables costs have fallen significantly as a result of efficiencies in the supply chain and technological improvements. These have driven down the levelised cost of electricity to levels within the historical range of wholesale electricity prices seen in the all-island electricity market. Contracts for Difference, and specifically 2-way CfDs, where the renewable generator pays back when the wholesale price is above the agreed strike price are increasingly popular revenue stabilisation mechanisms across Europe. Typically these take the form of government backed contracts as per the GB CfD contract with LCCC or the contractual arrangements with the Minister of DCCAE in the forthcoming RESS in Ireland. Long term predictable and stable pricing will be the key in attracting investors to bring forward the investment needed to deliver low cost renewables for Northern Ireland

Q29. The Department published its Offshore Renewable Energy Strategic Action Plan 2012-2020 in March 2012.[9] As a starting point the Government should issue a new action plan with appropriate governance mechanics to demonstrate its commitment to potential developers. The consenting, grid connection regime and route to market in Northern Ireland will need to be confirmed and developers should be consulted to determine what changes are required to bring forward the necessary investment. As we have experienced in Ireland, in order to establish a new industry for offshore and marine renewables it is critical that developers have confidence in the Government's long term ambition through coherent policy and regulatory frameworks.

We prepared a thought leadership paper in conjunction with other key stakeholders on the necessary changes to be made to the legislative and regulatory framework in Ireland in order for offshore wind to play a meaningful role in their energy transition. The recommendations of the report are also useful in the context of Northern Ireland: https://www.cornwall-insight.com/uploads/A%20Great%20Leap%20Forward%20Offshore%20Wind%20in%20Ireland.pdf

[9] Department of Enterprise, Trade and Investment, Offshore Renewable Energy Strategic Action Plan 2012-2020 https://www.economy-ni.gov.uk/sites/default/files/publications/deti/Offshore%20Renewable%20Energy%20Strategic%20Action%20Plan%20%28ORESAP%29%202012-2020.pdf

8. Transport

Q30. What would be an appropriate pathway to decarbonised energy for transport to 2050?

Q31. What role should active travel have in the decarbonisation of the transport sector and what should government do to support this?

Q32. What energy infrastructure is needed to facilitate the uptake of electric vehicles in line with UK Government's 'Road to Zero' targets?

Q33. How will transport integrate with other energy uses (e.g. homes with solar generation, battery storage, EV charging) and what can government do to optimise the opportunities represented by this integration?

Q34. To what extent can alternative low carbon transport fuels contribute to decarbonisation of the transport sector?

Q35. Do you have any data/research to help inform and reduce the carbon intensity of our transport energy in order to achieve net zero carbon by 2050?

Q30. The UK Government has committed to banning the sale of petrol and diesel cars by 2035. Likewise Ireland has committed at Head 16 of the draft scheme of the Climate Action (Amendment) Bill 2019[10] to ban the sale of new fossil fuel cars from 2030. Northern Ireland should be included in the UK legislation when introduced, however it may be preferable to request an earlier commencement date to maintain consistency across the island of Ireland.

Given the above proposals, the charging network for electric vehicles will need to be substantially developed by 2030. Hydrogen vehicles could also be a viable option depending on how the decarbonisation of the gas network progresses. Delivery of infrastructure to support the decarbonisation of transport and the economic incentives to enable it to happen will be key pillars for further consideration. Existing policy tools such as the Renewable Transport Fuel Obligation will need reviewed and adopted in order to deliver on such economic incentives.

Q31. Translink and the public sector generally have a key role to play in establishing a market for electric vehicles. All Government departments and public sector entities should transition to using electric vehicles over a period of a number of years (with appropriate percentage milestones being set annually). This would play a significant role in (i) normalising electric vehicles in the community; (ii) creating a growing demand for the necessary infrastructure; and (iii) creating a demand, encouraging competition and driving down prices for electric vehicles themselves.

We note that Translink has already made progress with regard to the decarbonisation of its fleet by procuring a number of hydrogen powered double decker buses and entering into a contract with Energia Group for the provision of hydrogen (sourced through electricity provided by a North Antrim onshore wind farm).[11] Translink should take a leading role through the decarbonisation of the remainder of its fleet of buses and trains through either electrification or the use of hydrogen.

[10] Department of Communications, Climate Action & Environment, General Scheme Climate Action Amendment Bill https://www.dccae.gov.ie/en-ie/climate-action/legislation/Documents/5/Heads_of_Climate_Amendment_Bill.pdf
[11] Translink, Hydrogen Bus Contract https://www.translink.co.uk/corporate/media/pressnews/hydrogenbuscontract

Q33. Electric vehicles could also play an important role in terms of grid resilience and arbitrage. Batteries for electric vehicles should be two-way, allowing for electricity to be sold back to the grid in times of peak demand.

Q34. Alternative low carbon transport fuels such as biogas/CNG will be required for HGVs and possibly buses or other heavy transport vehicles. Anaerobic digestion will play a key role in generating biogas.

9. Other Issues:

a. Security of Supply

Q36. What specific risks to security of energy supply are likely to emerge as a result of our changing energy mix, and what actions can be taken to mitigate these?

Q37. What measures or indicators could be adopted or developed to monitor energy security of supply?

Q36. Current and future trends suggest more integration of renewable generation is needed if decarbonisation targets are to be met. A major advantage of fossil fuel generation is that it produces a dependable supply of electricity. Fossil fuel plants are flexible and fully dispatchable; this type of generation can provide security of supply when wind and solar resources are not available. Consistent baseload power will continue to play an important role in Northern Ireland as shown by the SONI TES 2019 Report (under all possible pathways/scenarios). The timing of changes to the fossil fuel fleet varies depending on future pathways for Northern Ireland. Gas is often viewed as a transition fuel in the pathway to a low carbon economy. Gas power plants will continue to have a strong role in maintaining the demand and supply balance, operating to ensure security of supply in Northern Ireland following planned closures of major coal fired units. Flexible gas-fired / low carbon generation is expected to help manage the integration of high levels of intermittent renewables.

Interconnection can provide multiple benefits, including renewables integration, wholesale electricity price reduction, adequacy improvement as well as a source of reserve. Northern Ireland has existing interconnector ties to Ireland and Great Britain, which need to maintained and developed. The proposed second North-South Interconnector has near unanimous support. Its benefits are clear: security of supply, greater capacity for renewables, and substantially lower costs for consumers. The Moyle Interconnector has been placed under a substantial technical restriction by National Grid, leaving the only interconnector between GB and NI considerably underutilised.

Technically and commercially viable energy storage technologies are already available. They present an opportunity to revolutionise Northern Ireland's electricity system, increasing efficiency and enhancing security of supply. The current regulatory and policy framework represents a considerable barrier to entry for potential investors.

Capacity on the electricity network has become an inhibitor of economic growth in Northern Ireland. Costs and delays associated with connecting to the grid will limit the ability to decarbonise the sector.

Q37. There are a number of existing policy tools available to the Department for monitoring energy security of supply. We are not aware of the Department requiring any additional measures being required in order to monitor or develop security of supply, although the Department will be able to confirm/review current policy frameworks. As part of an island economy (with one part, EU member state and another part od the UK), energy security is a critical issue for Northern Ireland and system resilience is important in order to be able to effectively manage uncontrollable, external events that cause a security of supply event. Current energy policy tools available in an electricity context for example include, without limitation:

Electricity (NI) Order 1992

- **Article 11B, Provision of additional capacity –** where there is insufficient capacity planned or existing the Department may invite tenders for further generating capacity or energy efficiency / demand side

measures.

- **Article 32, Regulations relating to supply and safety –** the Department may issue such regulations as it deems necessary for the purpose of securing that electricity supplies are regular and efficient.
- **Article 37, Fuel stocks, etc., at generating stations –** the Department may issue directions to generating stations (of 10MW or greater) to (i) make arrangements for the level of fuel to be brought and maintained (ii) requiring the use of specified fuel stocks; or (iii) requiring such generating station to operate or not operate at specified times and levels of capacity, using specified fuels.
- **Article 38, Provisions supplementary to Article 37 –** the Department may issue a direction requiring the holder of a distribution or transmission licence to provide any information or advice reasonably required by the Department.
- **Article 58, Directions for preserving security of electricity supplies, etc. –** the Department may issue directions that appear to it to be requisite or expedient to preserve the security of buildings or installations used for the purposes connected with the generation, transmission, distribution or supply of electricity or mitigating the effects of any civil emergency that may occur.

Energy specific policy tools such as these could be reviewed on a cross sectoral basis to help establish whether any adoption/development is needed to current policy tools/frameworks.

b. The Role of Data

Q38. What is the most cost-effective method of capturing consumer energy usage data in electricity and natural gas (where meters are in place)? In heating oil (where there is no metering obligation)?

Q39. What concerns need to be addressed regarding data privacy, security and/or ownership?

Q40. What are your views on applying the key recommendations of the Energy Data Taskforce for NI?

Q41. What organisations or businesses do you see as having a key role in optimising the value of data? How will they do this?

Q39. A digitalisation strategy needs to be developed for the NI Energy system. Data sharing will be crucial to coordinate the wide range of actors undertaking roles across the sector. Cross-vector data is essential to ensure that optimal, whole systems solutions can be developed. The key concerns are around data visibility (understanding rights and obligations with the data that exists, the data that is missing) and how then to extract full value for the system from such data (highly restricted access, strict terms & conditions/compliance concerns with handling such data). A common data framework is therefore needed in NI to support maximum exploitation of system data.

Q40. We understand that the Energy Data Taskforce engaged with representatives from Northern Ireland. Many of the recommendations appear to be both relevant and transferable to the NI energy sector. The principles and recommendations would need to be endorsed locally through stating clear policy and regulatory intent (given energy is devolved to NI).

c. Carbon Capture and Storage

Q42. What steps, if any, should NI policy-makers consider with regard to the development or implementation of CCUS in NI?

Q42. As the cost of renewable technologies such as offshore wind continues to fall, it is becoming clear that they are likely to provide the majority of our low carbon electricity generation out to 2050. It is also likely that electricity demand will grow significantly as other sectors of the Northern Irish economy such as transport and heat are electrified. In those circumstances, it is likely therefore that there will be a role for low carbon firm/always available power in all scenarios – to meet net zero while maintaining security of supply and keeping costs low. The CCC has recommended that carbon capture technology is investigated as a potential method for decarbonising Northern Ireland's power sector. The technologies currently available in Northern Ireland to provide this large scale, firm power are gas with carbon capture, usage and storage (CCUS). While advances in technologies, system flexibility and energy storage are likely to eventually provide additional options, capacity of gas with CCUS, alongside renewables, are likely to be required.

It is in that context that the Department should review the feasibility and viability of CCUS options for Northern Ireland. The Department could consider setting up an advisory group to consider possible pathways for CCUS in Northern Ireland, understand the challenges that face CCUS and look at potential local solutions and suitable funding models for Northern Ireland. A 'Regulated Asset Base' (RAB) model for new nuclear projects is being considered in GB. By providing regulated returns to investors, a RAB model has the potential to reduce the cost of raising private finance for such projects, thereby reducing consumer bills and maximizing value for money for consumers and taxpayers. To ensure that sufficient gas fired generation is operated and new gas fired CCUS generation is built, Northern Ireland needs to develop a holistic vision on the future role of gas fired-generation, that incorporates market, regulatory and policy developments (in conjunction with Ireland to ensure consistency of approach across the island of Ireland).

d. Energy and the Economy

Q43. What specific economic opportunities will arise from the decarbonisation of energy?

Q44. What skills are needed to realise the potential economic benefits of energy in the future?

Q45. What are your views on the future of overall energy demand in NI and how can we ensure that any potential demand growth aligns with our net zero carbon target?

e. Delivery Framework for an Energy Strategy

Q46. Do the existing division of responsibilities and powers across government enable the most effective approach to the overall aim of decarbonising energy? If not, what are your suggestions for improvement?

Q47. What are the opportunities for local government to contribute to the delivery of the net zero carbon target?

Q48. What are your views on how statutory duties and accompanying legislation and regulatory frameworks would need to change to facilitate the transition to net zero carbon by 2050?

Q49. Is there a need for a dedicated organisation to champion, lead and deliver sustainable energy interventions? If so, what should this look like?

Q46. As has been set out in this response, actions are required across the Electricity, Heat and Transport sectors in order to facilitate a transition to a net-zero economy. Changes across such a broad spectrum necessarily lead to the division of responsibilities and powers across Government. However, a vital element for the Government to consider if it is to drive the energy transition forward is accountability. When responsibilities are disparate, it is more likely to give rise to interface issues and increase execution risk of policy objectives. The Climate Action Plan[12] proposes a comprehensive system of governance arrangements to ensure that the energy transition remains at the top of the agenda. Some key elements of the proposed framework are set out below:

- Establishment of a "Climate Action Delivery Board" with the Department of An Taoiseach which will hold each other Department and public body accountable for the actions assigned to it under the Climate Action Plan.
- Establishment of a "Climate Action Council" to monitor progress, recommend appropriate measures, five year Carbon Budgets and provide policy evaluation advice to the Government.
- Establishment of a Standing Committee of both Houses of the Oireachtas on Climate Action to hold Ministers and public bodies accountable for their actions.
- Establishment of a Climate Action Office, within the Oireachtas, similar to the Parliamentary Budget Office, to provide robust advice and evidence to the Standing Committee.
- Climate Action Plan to be monitored quarterly and updated annually.
- Setting of key climate targets and milestones in the periods 2021 to 2025 and 2026 to 2030.

In Ireland, the energy transition is one of the core functions of the Department of Communications, Climate Action and the Environment (DCCAE) and the Department of the Taoiseach (DOT). DCCAE is primarily responsible for driving the transition and DOT holds DCCAE accountable. Where necessary, DCCAE will engage with other departments, such as the Department for Housing, Planning and Local Governance (e.g. in respect of planning consents for offshore wind), however the primary function is assigned to one entity. We believe a similar model would be the

[12] Climate Action Plan, Section 5 (Governance Structure), page 26 https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf

most effective approach in Northern Ireland, whether that means the Department for the Economy (or another Department) takes full responsibility for the energy transition or a new Department is established specifically for this purpose.

Q47. The Northern Irish public sector has a key role by providing climate leadership through public procurement, ensuring its buildings are energy efficient (as set out at Q14.) and by managing its estate in a sustainable way. Northern Ireland can take action to reduce the emissions intensity of vehicles under public ownership, including the public sector fleet and bus network (as set out at Q31.). This could either be through purchasing more efficient hybrid vehicles or replacing the fleet with electric vehicles

Q48. The transition to a net zero economy may necessitate changes to the statutory duties and regulatory framework in Northern Ireland. The major actors in the sector are statutory bodies. Powers, duties and functions of such bodies needs to be aligned with long term strategic planning, policy design and adoptive regulation (that incorporates anticipatory spend and allows for innovation) to deliver on net zero.

While the policy and regulatory frameworks in Northern Ireland is broadly in line with that in Great Britain, there are some learning opportunities which could be implemented in Northern Ireland. The principal duties of both Ofgem and the Utility Regulator are to protect the interests of consumers. However the legislation in Great Britain explicitly sets out what the interests of consumers entail, specifically including "*their interests in the reduction of [gas / electricity]-supply emissions of targeted greenhouse gases*."[13] A similar addition to the statutory duties of the Utility Regulator would allow the Utility Regulator to factor in the environmental impact of its decisions and pursue options which may have a short term cost but significant long term environmental benefit.

Furthermore, in exercising its duties Ofgem is also required to have regard to "*certain statutory guidance on social and environmental matters issued by the Secretary of State*".[14] The Secretary of State has issued guidance prioritising the Government's environmental policy (as well as fuel poverty).[15] This statutory duty empowers Ofgem to implement the Government's energy policy by taking a longer term view to decision making and giving the necessary weight to environmental and social issues in discharging its duties/deploying regulatory tools.

The current statutory duties of the Utility Regulator are much more prescriptive (set out at Articles 12 to 13 of the Energy (NI) Order 2003). While there are references in the legislation which require the Utility Regulator to "*have regard...to the effect on the environment of activities connection with generation, transmission, distribution or supply of electricity*" and "*secure a diverse, viable and environmentally sustainable long term energy supply",* the prominence of emissions reductions/reducing carbon intensity is not expressly incorporated as it is in Great Britain. The legislation in Northern Ireland could therefore be amended to require the Utility Regulator to have regard to the published guidance of the Department for the Economy (or such other relevant entity).

As the energy regulator, the Utility Regulator has a pivotal role in paving the way for the energy sector to decarbonise. Approach to regulation in Northern Ireland needs to be more adoptive to keep pace with government policy developments and new innovations. The Utility Regulator's work stems from its statutory duties to act in the interests of current and future consumers. This needs to include their interests in greenhouse gas reductions.

[13] Section 3A Electricity Act 1989, Section 4AA Gas Act 1986
[14] Ofgem, Our Powers and Duties, Section 1.9 https://www.ofgem.gov.uk/publications-and-updates/our-powers-and-duties
[15] Secretary of State, Social and Environmental Guidance to the Gas and Electricity Markets Authority https://www.ofgem.gov.uk/ofgem-publications/74203/file37517-pdf
Section 3B Electricity Act 1989, Section 4AB Gas Act 1986

The network price controls need to be regulatory tools to facilitate the networks to drive change. Ofgem's price controls are set under its RIIO (Revenue= Incentives + Innovation +Outputs) regulatory framework and determine the revenue networks can recover as part of energy bills. Embedding flexibility and outputs based principles into regulatory tools and decision making will be a key enabler if we are to meet net zero at lowest cost in Northern Ireland. Price controls will need to have a suite of net zero investment and innovation mechanisms that can be put in place at any time during a price control period so that the networks/system can respond flexibly to changing technological and policy developments in the path to net zero (whilst maintaining investor confidence/certainty). For example, allowing the networks to consider changes to Northern Ireland gas standards if the composition of gas is likely to change significantly over the next period of time.

Q49. Yes, we believe that having one dedicated organisation to champion lead and deliver sustainable energy interventions would be beneficial. In Ireland, the Sustainable Energy Authority of Ireland plays a key role in providing advice and guidance across a range of Government, public bodies, market stakeholders and consumers and driving through a strategy for transitioning to clean energy.

In Northern Ireland, TourismNI has been very successful in its role of advocating for the development of tourism in Northern Ireland. TourismNI is responsible for ensuring the organisation achieves the aims and objectives as set by the Tourism Minister and the Department for the Economy. A similar model could be adopted for an "Energy Board" in Northern Ireland, formed of representatives from Government, the Utility Regulator, electricity and gas system operators, generators and consumers in order to implement the strategic policy direction of the Department and the relevant Minister.

10. Additional information

Q50. Is there anything else you would like to add in response to this Call for Evidence?

Q50. We have sought to keep our response commercially focused and limited to specific areas where we can add value to this Call for Evidence based on our long track record of working in the Northern Ireland energy sector (and elsewhere) across a range of projects and with a wide and varied client base active right across the energy value chain in Northern Ireland. We have therefore not responded to the other questions on the basis. We would like to thank the Department for the opportunity to participate in this Call for Evidence and would be very happy to meet up to discuss our submission should that be helpful to the Department in due course.