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.

For further information on how we handle your personal data please read our Privacy Notice

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)**

Elaine Waterson

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**

Energy Saving Trust

7. **Position within Company / Organisation**

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2. Energy in Northern Ireland

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

Energy Saving Trust was established by UK government in 1992 as a grant funded agency to support householders to improve the energy efficiency of their homes. We are the UK's leading impartial organisation helping people to save energy and reduce their carbon emissions. We do this by providing expert insight and knowledge on energy saving and supporting people to take action. With a focus on the citizen, issues around energy use in residential buildings are central to our work, but we also work on energy using products, personal transport and community energy. We act as a bridge between government, consumers, trade, businesses, local authorities and the energy market.

Energy Saving Trust has significant experience of designing, delivering and managing sustainable energy related programmes working with all relevant stakeholders providing advice, support, technical consultancy and financial support. This includes, for example, the delivery of the Scottish Government's Home Energy Scotland advice service which provides free and impartial advice on energy saving, renewable energy and sustainable transport to more than 90,000 households each year. We manage major contracts and grant funded projects for UK Governments, private sector and have considerable experience of working on a portfolio of pan-European and international energy projects. We deliver government programmes both on a fully commercial basis, tendering for the work, and on a grant funded basis, as an organisation named in the UK 1990 Environmental Protection Act S153.

We have had an office in Northern Ireland since 1996 and since that time we have run a number of NI specific programmes including, but not limited to, the Northern Ireland Projects Fund, the Green Rates Rebate scheme, and the Northern Ireland Sustainable Energy Programme (NISEP) on behalf of the Utility Regulator, which we continue to run.

All of our responses to the questions set out in the consultation document follow from the greatly increased urgent need for effective climate change policy, to meet net zero carbon emissions at UK level and with a view that Northern Ireland should not be left behind in the transition to a zero carbon economy. Our general position, in which all our answers are framed, is that the Northern Ireland Executive needs to press forward as fast as possible if these new targets are to be met.

As noted above our work focusses on specific parts of energy use within an overarching climate action framework – primarily energy used in homes, communities and personal transport - and therefore not energy use as a whole. Specific lessons from our experience of delivering emissions reductions programmes on behalf of the Scottish Government and the other governments in the UK are detailed in our responses to many of the questions below.

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

No response

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

A number of the CCC's recommendations detailed in their '*Reducing Emissions in Northern Ireland*' report relate to areas where Energy Saving Trust has significant expertise, namely the need for:

- Support to incentivise consumers to install low-carbon heating in homes off the gas grid.
- Policy options to deliver an attractive package for able-to-pay householders aligned to trigger points (such as when a home is sold or renovated).
- More rapid deployment of electric vehicles, tighter conventional vehicles standards, and transport behaviour change.

We believe that there is a need for urgent action in each of these areas if Northern Ireland is to play its full role in meeting the UK's extremely challenging climate change targets and as such believe that there is a need for each recommendation to be implemented.

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

Yes, Energy Saving Trust agrees with the 30-year timeframe. We agree with the consultation document's conclusion that '*the strategy must consider an overall 2020 to 2050 timeframe, given the UK government's legislative commitment to 'net zero carbon' by 2050*'.

We are aware that across the UK some cities have plans to meet net zero earlier than 2050 and that some campaigning organisations have argued that the UK's national 2050 target date for reaching net zero is not ambitious enough. Our view is that based on the current rate of progress in reducing emissions, state of technology, and the substantial social and economic barriers that need to be overcome, it is right to focus on 2050 as the UK's target date for net zero.

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?**

We focus our answer on homes:

- The emerging gas grid and plans for its continued expansion. Natural gas is not a low carbon or renewable fuel and as such does not have a role to play in the provision of heat in the medium-long term. The potential to use hydrogen in the gas grid remains uncertain and is ultimately dependent on a decision by the UK government – which is not due until c. 2025. There is also growing concern amongst a number of stakeholders that the timescales associated with hydrogen are not consistent with the need to substantially reduce emissions over the next ten years. It is also worthwhile noting here that other governments in the UK are considering the extent to which the expansion of the gas network in their jurisdictions is a sensible way forward – the Scottish Government for example in their 2019 consultation on the future of low carbon heat for off gas buildings asked for views '*on the continued extension of gas networks before low carbon alternatives to natural gas (e.g. hydrogen) are proven.*'

- The high reliance of oil as a heating fuel. Again, oil is not a low carbon or renewable fuel and it has no place in a net zero carbon energy economy. However, given the very widespread use of oil heating in Northern Ireland, there will need to be a managed transition away from oil towards renewable heating.

- Relatively high levels of fuel poverty and the volatility of fuel poverty. There is conflict between the need to reduce fuel poverty in Northern Ireland and the need to reduce carbon emissions – renewable heating systems cost considerably more to buy and sometimes to run than higher carbon heating systems. When government resources are limited it can make decisions to fund renewables systems hard to make. This is particularly true in Northern Ireland where, for a range reasons (not least, but not only, the RHI), there is less enthusiasm for renewable heating systems than in other parts of the UK.

- Relatively low levels of disposable income in comparison to the rest of the UK. For the owner occupier sector – which makes up the majority (63%) of Northern Ireland's housing stock – it will therefore be important to ensure that appropriate support is in place to enable people to improve the energy performance of their homes.

- Slightly better levels of home energy efficiency than other parts of the UK. It is therefore in a good place to be able to build on this and drive forward energy efficiency improvements to Northern Ireland's housing stock.

- Lower levels of spend on energy efficiency than some other parts of the UK. The thinktank E3G estimated at the end of 2017 that government spending on energy efficiency support, per person, was four times higher in Scotland than in England, with Wales and Northern Ireland spending twice and three times as much as England, respectively. It's worthwhile noting that even in Scotland where spending is per person on energy efficiency support is greater than in other parts of the UK there is growing recognition that existing budgets are not sufficient to deliver change at the pace and scale required to meet targets (see for example:

http://existinghomesalliancescotland.co.uk/news/call-to-double-funding-for-warm-homes-in-scottish-budget-2020-21/)

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

Yes, Energy Saving Trust is undertaking a significant number of projects across the UK to support the energy transition in buildings, communities and transport. Energy Saving Trust is also involved in a number of European projects working together with a range of other European energy agencies.

In Northern Ireland Energy Saving Trust administers the Northern Ireland Sustainable Energy Programme (NISEP) on behalf of the Utility Regulator. This programme provides around £8 million per year for energy efficiency programmes (80% ring fenced for priority customers in the domestic sector and 20% allocated to the non-priority domestic and commercial sector). From the most recent annual report 17/18 NISEP delivered the following savings:

NISEP 17/18

Table 1 - Summary Outturn Savings

Total lifetime energy savings (GWh)	602.122
Total lifetime carbon saved (tC)	107,459
Gross lifetime customer benefits (£)	78,507,635

In Scotland, the Scottish Government provides funding to Energy Saving Trust to deliver an extensive range of home energy programmes, which are detailed in our report '*Home Energy Programmes Delivered by Energy Saving Trust on behalf of the Scottish Government*'.

Energy Saving Trust also manages a range of other programmes on behalf of Scottish Government in Community energy, district heating and sustainable transport.

The Energy Saving Trust is involved in delivering all of Wales's national energy efficiency programmes:

- The NEST fuel poverty programme – working with British Gas (who deliver installations), Energy Saving Trust provides a national advice service, and the customer engagement/management for fuel poor customers who quality for support.
- The Arbed national Area Based fuel poverty scheme is delivered by Energy Saving Trust working with partners.
- The Welsh Government Energy Service providing advice and support for community and public sector low carbon energy in Wales is delivered by EST working with partners

Energy Saving Trust also plays a significant part in supporting the UK's transition to a clean transport system promoting ultra-low emission vehicles (ULEVs) and active travel. We work with the Scottish Government, Transport Scotland, UK Government Department for Transport, the Office of Low Emission Vehicles (OLEV) and the UK department for the environment, Defra, principally delivering

work as a grant funded partner. Within extensive work programmes for these funders some examples of our work are:

- Administration of the On-Street Residential Chargepoint Scheme (ORCS) which provides funds to local authorities across the UK to install chargepoints;
- Support for business fleets in the transition to ULEVS;
- Delivering grant funding for businesses and citizens to purchase EV cars and e-bikes.
- Capacity building support and advice to local authorities in managing the transition to EVs in their area.

At a GB level we also manage the delivery of Ofgem's Redress programme. This is a large scale funding programme to support registered charities to deliver energy saving projects particularly with vulnerable/fuel poor households.

Europe

We have a long history of European collaboration -some examples of our current work in this area are as follows:

- **EU HEROES – Eu Routes to higher penetration of Solar PV into local networks.** Through this project Energy Saving Trust is working with EU partners in the Netherlands, Greece, Germany, Spain, Lithuania and Poland to address the challenges faced by community energy projects around grid constraints and the reduction of and / or end to solar PV subsidies.
- **ENSMOV - Enhancing the Implementation and Monitoring and Verification practices of Energy Saving Policies under Article 7 of the Energy Efficiency Directive (EED)).** ENSMOV will support public authorities and key stakeholders in 14 Member States represented by its consortium (Austria, Belgium, Bulgaria, Croatia, France, Germany, Greece, Hungary, Italy, Lithuania, Netherlands, Poland, Romania and the UK- and beyond addressing all 28 MS and accession countries) to monitor, revise, improve and complement the design and implementation of their national energy efficiency policies by developing resources on practical and strategic issues arising from the Article 7 EED.
- **LABEL2020** which will support the transition to a new EU label for energy efficient products.
- **HACKS – Heating and Cooling Knowhow and Solutions which will involve work to support** market transformation for heating and cooling (HAC) equipment through consumer involvement.
- **X-TENDO - Extending the energy performance assessment and certification schemes via a modular approach.** The project aims to improve compliance, reliability and usability of EPCs, while supporting the evolution towards a next-generation, future proof, converging EPC-framework across the EU.
- **We also have significant involvement with CA EED & CA RES - Concerted Action for the Energy Efficiency Directive (CA EED) and the Concerted Action for the Renewables Directive (CA RES).** To assist EU Member States to transpose and implement EU legislation cost effectively the European Commission funds initiatives known as 'Concerted Actions'.

Concerted Actions are joint initiatives between EU Member States and the European Commission. They provide a confidential, trusted forum for exchange of knowledge and collaboration between national governments and their implementing agencies, helping countries to learn from each other, avoid pitfalls and build on successful approaches. There are currently three Concerted Actions dedicated to the **Energy Efficiency Directive (CA EED),** the **Renewables Directive (CA RES)** and the **Energy Performance of Buildings Directive (CA EPBD).**

We would be happy to provide additional information about any of the programmes we manage if this would be useful.

4. Consumers

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

One of the most important things that can be done to ensure that energy remains affordable for domestic consumers is to encourage energy efficiency. The less energy a home needs to use the more that home can be insulated against fuel price rises. Lower fuel prices are of little use when homes are losing heat at considerably greater rates than necessary. Indeed recent evidence suggests that UK homes are losing heat at up to 3 times faster than our European neighbours.

Energy efficiency has a vital role to play in any just transition to a decarbonised Northern Ireland. Without it, additional power generation capacity will be unnecessarily required together with larger and consequently more expensive heating systems which will result in consumers paying unnecessarily high energy bills. Without improved energy efficiency, fuel poverty will continue to persist and require significant amounts of public spending to treat.

In terms of the approach that Northern Ireland should take to eradicate fuel poverty we believe that there is significant scope to learn from the approach taken in Scotland. In this context we believe that there are 5 core areas that need to be built on in the drive to eradicate fuel poverty in Northern Ireland:

1. **Reviewing the Definition of Fuel Poverty in Northern Ireland**

Fuel poverty can be broadly understood as the problem of households being unable to afford necessary home energy services, particularly – in the Northern European context - heat[1]. Quantified, operational definitions of the problem for policy making and monitoring purposes, however, vary across the UK and internationally. Northern Ireland currently uses the '10% definition', which means that any household needing to spend over 10% of their income on fuel bills is classed as fuel poor.

This definition has been criticised on a number of grounds; for example, it includes wealthier households who choose to live in very large draughty homes. Scotland also used the 10% definition until recently, but following a legal change, it now defines fuel poverty as a household where residents are on low incomes (based on minimum income requirements for different types of household) and they need to spend a high proportion of that income on fuel. In England, UK Government currently defines fuel poverty as households who spend an above average amount on energy and are below the poverty line (60% of median income), after housing costs and necessary energy spend. A recent UK Government consultation has proposed revising this definition to households living in properties with lower energy efficiency and who are below the poverty line (60% of median income), after housing costs and necessary energy spend. (Wales, like Northern Ireland still uses the 10% definition, but this may change with a new Fuel Poverty Strategy planned for this year).

Each of these metrics has advantages and disadvantages

[1] This broad definition based on Bouzarovski and Petrova, 2015 "A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary": https://www.sciencedirect.com/science/article/pii/S221462961500078X

We believe it is important that the Northern Ireland Executive reviews the definition of fuel poverty in Northern Ireland to better identify and support householders in need in Northern Ireland. An assessment of the definition used in Scotland and England's current and proposed metrics, could be helpful as part of any process to determine the most appropriate definition of fuel poverty for Northern Ireland.

2. Reaching vulnerable households through in-home engagement and advice

People living with health problems, or who are older and frail, may find it difficult to engage with the referral processes for fuel poverty programmes. This may be due to isolation, as well as the difficulty, for people living with long-term health problems, of finding the time and energy to fill in forms or talk to advisors. And while the self referral element of Affordable Warmth Programme can be made over the phone, some older people's lack of digital skills also removes an easy route to information about the programmes.

For the next phase in Northern Ireland's fuel poverty support programmes, we suggest the establishment of an advice service which has a partnership and outreach element and multiple channels of access, including an in-home advice service, where home visits are offered to very vulnerable households who would otherwise find it difficult to engage with a fuel poverty support programme. Customers might include people with chronic physical or mental health problems or the very elderly.

Scottish Government's innovative Home Energy Scotland Homecare programme is managed by Energy Saving Trust. This programme offers intensive in-home support for vulnerable households, with a team of "energycarers" who work closely with people who lack the capacity, knowledge or ability to access fuel poverty support- or indeed wider help with their home and finances. Support may include helping people who struggle with application forms, online portals and referral processes. Importantly it includes a partnership-building element to build referral relationships with agencies working with the most vulnerable households, including in health and social care. This service is built on the foundation of the Home Energy Scotland advice network which provides advice to all households in Scotland, and is integrated into this service, so there is no stigma associated with contacting Home Energy Scotland for advice and support and vulnerable households are identified and the right level of support provided based on need.

The support provided through this programme helps to ensure that no one misses out on energy efficiency measures because of vulnerability (which can make it hard to engage with fuel poverty support) or because their home is difficult to improve. Our experience from Scotland is that these two issues often go together. There is a significant population of vulnerable people living in homes with disrepair problems that households struggle to improve without support.

3. Introducing Area Based Schemes focussing on areas with high levels of fuel poverty

We believe that the Northern Ireland Executive should consider the introduction of area based schemes in Northern Ireland, that are able to focus on areas with high levels of fuel poverty, and that would sit alongside the national Affordable Warmth programme.

For households on a low income in Scotland - and at risk of fuel poverty – Warmer Homes Scotland is Scotland's national fuel poverty programme. Opened to applications in September 2015, Warmer Homes Scotland will spend at least £16 million plus VAT per year for up to seven years. Warmer Homes

Scotland is available to vulnerable households in the private sector (tenants or owner-occupiers) and the programme offers fabric measures, such as insulation, as well as heating measures. Alongside this national programme sits an area based programme under which the Scottish Government funds local authorities to develop and deliver energy efficiency programmes (mainly solid wall insulation) in areas with high levels of fuel poverty. This funding is combined with ECO funding, owners' contributions[2] and funding from registered social landlords who may choose to insulate their homes at the same time. The schemes are designed and delivered by councils with local authority delivery partners. They target fuel poor areas to provide energy efficiency measures to a large number of Scottish homes while delivering emission savings and helping reduce fuel poverty.

4. **Providing a top-up fund for the hardest to improve homes**

Some homes are costly to improve with energy efficiency measures. They may need non-standard insulation, or a wholly new heating system fitted. And sometimes structural or damp problems need to be treated before energy efficiency works can even begin. Such costly-to-improve homes are a challenge: to ensure that the available funding benefits the largest number of people, there is inevitably a limit on what Affordable Warmth and NISEP can spend on measures for any single property.

Having sufficient funding to enable measures to be fitted in these harder-to-treat homes, to bring the home to a decent standard of energy performance can be vital. Sometimes, homeowners can contribute their own funds to the costs of works. However, we also suggest a flexible top-up fund could be established by the Northern Ireland Executive, offering further assistance for households most in need. This fund would ensure that any additional retrofitting or improvement work, that is vital to building performance and wellbeing, can be completed for those unable to fund this work themselves.

5. **Establishing a new EPC target for fuel poor homes by 2030**.

The Northern Ireland Executive should consider a new Energy Performance Certificate (EPC) target for fuel poor homes. England has an ambition of getting all fuel poor homes to an EPC band C by 2030, and Scotland has consulted on setting an energy efficiency target for households in fuel poverty – specifically that all homes where the household is in fuel poverty should reach EPC band C by 2030 and EPC band B by 2040. As we discuss in our response to question 18 below we believe there could be merit in Northern Ireland setting more challenging energy efficiency targets to those that have been set elsewhere in the UK.

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

No response.

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?

[2] Note: Interest free loans are available to help with these contributions.

Yes, Energy Saving Trust agrees that a strategic position of 'enable and protect' is the correct policy stance.

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

We believe that the provision of independent and impartial advice has a key role to play in enabling active consumers and agree with the conclusion outlined on page 30 of the consultation document that '*it is important that everyone has access to fair, impartial and comprehensive advice and information to allow informed decision making*'. This view is also one held by the Scottish Government who have stressed the '*foundation of the [Energy Efficient Scotland] programme offer*' is that '*all households will be able to access good quality, independent advice and information on improving the energy efficiency of their property and reducing their fuel bills*' and that '*independent advice will be the bedrock*' of the Energy Efficient Scotland programme[3]. Indeed, there is much to be learned from Scotland's approach to advice provision.

A key, distinctive element of the policy landscape for home energy in Scotland is the focus given to impartial advice to support people to take action on energy efficiency. In Scotland householders (owner occupiers, tenants) and smaller private landlords are able to access free, independent, personalised and impartial advice from the Home Energy Scotland service, provided on behalf of the Scottish Government by Energy Saving Trust. Broadly, three types of advice are provided under Home Energy Scotland: 1. Personalised advice delivered over the phone by trained advisors working from regional advice centres across Scotland. 2. Free, in-home expert advice for households identified as needing in-depth advice and support: very vulnerable households, people installing more complex home energy measures and some private landlords. 3. Online advice consisting of both static webpages and online tools, managed and provided centrally by Energy Saving Trust on behalf of the Scottish Government.

A "Green Homes Network" of exemplar low energy/carbon homes reinforces these three advice channels. Home Energy Scotland provides customers with "one-stop shop" access to the financial (and other) support for home energy efficiency offered by the Scottish Government. Further information is available in our report '*Home Energy Programmes Delivered by Energy Saving Trust on behalf of the Scottish Government*'.

We recommend NI adopts a similar centralised, integrated approach such as a 'One Stop Shop'. As partners in the delivery of the Warmer Homes Scotland Programme for Scottish Government we have seen the benefits of increased coordination, improved workflow for the supply chain and joined up 'ones stop shop' delivery of services for householders across Scotland. We believe a similar approach in Northern Ireland could be extremely valuable. We have also seen first-hand how the removal of complexity and therefore confusion is an extremely valuable element of improving the levels of engagement and uptake of energy efficiency schemes.

A 'one stop shop' would improve the customer journey and ease of use for the general public. It would also mean customers would fairly get access to the grants they are entitled too. It would ensure consistency across Northern Ireland. Ideally a dedicated helpline would field calls and deal with queries throughout the referral process of all energy Efficiency grants in Northern Ireland If all programmes were filtered through this approach it should result in better outcomes for households

[3] For further information see: https://www.gov.scot/publications/energy-efficient-scotland-route-map/

referred to the most appropriate measures. A more joined up approach is needed, to facilitate a better end-to-end journey for the householder, right from the initial contact to final completion.

Independent and impartial advice is provided to non-domestic customers through Resource Efficient Scotland's advice and support service. This service provides bespoke advice which helps to ensure businesses take informed decisions based on their particular circumstances.

Smart meters also have key role to play in enabling active consumers. This is for a number of reasons. Firstly, because smart meter data can help consumers better understand their energy use and modify their behaviour as a result. In Scotland smart meter data can now be integrated to the advice delivered by Home Energy Scotland (where a customer has provided consent for the Energy Saving Trust to access their data). This allows Home Energy Scotland advisors to discuss actual energy consumption levels and patterns for a customer as well as provide more tailored savings estimates. Secondly, because smart meters are a prerequisite for time of use tariffs – which use different prices to encourage consumers to use electricity at times when more is available cheaply allowing them to benefit from lower prices if they can shift the timings of their electricity use.

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

In terms of protecting vulnerable consumers we would like to highlight the following:

The importance of partnership working: In Scotland, to ensure that the people most in need of help from Home Energy Scotland access the support, referral pathways for vulnerable householders are built with trusted intermediary organisations, including health and social care organisations. While the majority of householders contact Home Energy Scotland through the well-publicised freephone number or through outreach activity, a not insignificant number are referred to Home Energy Scotland from other organisations who have access to and are trusted by vulnerable householders. These organisations are able to make seamless referrals to Home Energy Scotland using an online portal which works in real time to put the householder's details directly into Home Energy Scotland's database for advisors to follow up.

The importance of reaching the very hard to reach: As noted earlier in our response no one should miss out on energy efficiency measures because of their vulnerability (which can make it hard to engage with fuel poverty support). In Scotland the Scottish Government's innovative Energy Carers programme delivered by Energy Saving Trust offers intensive in-home support for vulnerable households, with a team of "energycarers" who work closely with people who lack the capacity, knowledge or ability to access fuel poverty support- or indeed wider help with their home and finances. Support may include helping people who struggle with lengthy application forms, online portals and complex referral processes.

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

We believe that consumers need to access advice on everything impacting on emissions and fuel poverty. It is worthwhile noting that while there is no such a comprehensive advice anywhere in the UK at the moment it is something that the Scottish Government is working towards – and will build on its existing wide-ranging support offering.

In terms of the best mechanisms for facilitating this - it is vitally important to ensure that people can access advice in a way that suits them and that they are comfortable with. This will vary from person to person – but phone-based, face-to-face and digital advice will all have an important role to play.

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?**

Many of the projects supported by the Scottish Government's Community and Renewably Energy Scheme (CARES) are good examples of successful citizen energy projects that have delivered improved energy efficiency and/or clean energy to local communities. For further information please see: https://www.localenergy.scot/projects-and-case-studies/case-studies/

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?**

We believe that the Northern Ireland Executive has a vital role to play in facilitating citizen energy communities in Northern Ireland primarily through setting out appropriate policy frameworks which should clearly outline aspirations for activity in this area, and through the provision of appropriate funding for the development and delivery of support programmes.

We believe that there is much to be learnt from the approach taken by the Scottish Government's CARES programme. For further information please see: https://www.localenergy.scot/

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

No response.

5. Energy Efficiency

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

Existing build and energy efficiency targets

For existing homes our recommendations to government's in other parts of the UK have been that they should introduce a target of EPC C by 2030. However, for Northern Ireland we believe a more challenging energy efficiency target may be more appropriate. This is largely because of Northern Ireland's reliance on oil as a heating fuel (for further details please see our response to relevant questions below).

It is also worthwhile noting here that in Scotland, as well as EPC targets for each tenure of the housing sector there are also overarching energy efficiency targets set out in Scotland's Climate Change Plan (note a revised version of this plan is due to be laid before the Scottish Parliament at the end of April this year – to reflect Scotland's recently revised climate change targets). The approach taken could help inform considerations in Northern Ireland. Relevant targets are detailed below:

- Where technically feasible by 2020, 60% of walls will be insulated and 70% of lofts will have at least 200mm of insulation in the residential sector. This aim was also included in the draft plan and has remained unchanged.
- By 2032, improvements to the building fabric of domestic buildings will result in a 15% reduction in domestic heat demand.

The Plan also introduced energy and emissions intensity as policy outcomes. These are as follows:

- Policy outcome 1: By 2032, the energy intensity of Scotland's residential buildings will fall by 30% on 2015 levels.
- Policy outcome 2: By 2032, the emissions intensity of residential buildings will fall by at least 30% on 2015 levels.

The plan also introduced output indicators for these outcomes as follows:

Year	2020	2025	2032
Change in energy intensity from 2015	-10%	-17%	-30%

Year	2020	2025	2032
Change in emissions intensity from 2015	-5%	-13%	-30%

Notes: **Energy intensity in the residential sector** is the amount of energy required per household. It is calculated by dividing total energy consumption by the number of households. While **emissions intensity** measures emissions per unit of output. In the residential sector the number of households is taken as the measure of output.

New build and energy efficiency targets

For new build homes we believe that these must be built to the most efficient fabric standards. Energy efficiency is the most effective long-term guarantee of a housing stock that uses less energy and emits less carbon. Improving the energy efficiency of new homes will also contribute to the delivery of the Industrial Strategy's Grand Challenge to '*at least halve the energy use of new buildings by 2030*'. As noted above the UK Government expect that an average home in England built to their proposed Future Homes Standard, which they have committed to introduce in 2025, '*will have 75-80% less carbon emissions than one built to current energy efficiency requirements'* and that this will be achieved '*through **very high fabric standards** and a low carbon heating system*'. The Welsh Government expect the same levels of carbon savings from homes built in Wales to their proposed 2025 standard noting that meeting this standard will require '***very high fabric standards** that limit heat loss and reduce the demand for heat*' together with a low carbon heating system.

Strong fabric first standards 'lock in' energy saving and make dwellings much cheaper to heat (because less heat is needed) and more comfortable to live in. They also reduce system costs as there is less demand (than would otherwise be the case) on the grid. The fabric of a property, unlike a property's heating system, is very unlikely to be revisited over a property's lifetime and as such getting the fabric right when a property is built is a one-off opportunity. It makes no sense to build a home now that will need to have disruptive fabric improvements made at a later date at additional cost to the homeowner.

The Committee on Climate Change, in their report '*UK housing: Fit for the future?*' recommend that '*new homes should deliver ultra-high levels of energy efficiency as soon as possible and by 2025 at the latest, consistent with a space heat demand of **15-20 kWh/m2/yr***'. The widely used Passivhaus Standard energy performance requirement for space heat demand is ≤15 KWh/m2/yr.

The CCC found that ultra-high levels of energy efficiency (consistent with a space heat demand of 15 kWh/m^2/yr were generally more cost-effective than less ambitious energy efficiency standards (20-30 kWh/m2/yr of space heat demand). That's because highly insulated homes need a much smaller heating system. The CCC identified an up to c.£3,300 saving in the capital cost of the radiators and heating distribution system for the most energy efficient fabric specifications.

Strong fabric standards have been criticised on aesthetic grounds because they can restrict the design of buildings – leading to a homogenous look of thick walls and narrow widows. However, recent UK examples, for example Norwich City Council's award-winning Goldsmith Street development of 100 homes built to Passivhaus standard show that this does not have to be the case.

Fabric Energy Efficiency Standards (i.e. standards limiting the space heating and cooling energy demand of a new home expressed in kWh/m2/yr) are already part of building regulations for England but are not part of building regulations in other parts of the UK. However, BEIS' current consultation on the Future Homes Standard for England recommends that the Fabric Energy Efficiency Standard is removed and to '*encourage good fabric*' they propose to retain and improve the minimum standards for individual fabric elements (walls, roofs, floors, windows etc.). The Welsh Government's proposals for improvements to fabric standards also relate to individual fabric elements.

Recent modelling work undertaken on behalf of the West of England Local Authorities considered the potential impact of the proposal to remove the Fabric Energy Efficiency Standard in England. This

modelling work found that '*the 2020 standard could allow for worse fabric than is currently allowed under Part L 2013*'. More specifically, when the minimum fabric standards proposed for the 2020 standard were modelled the results showed that the modelled dwellings failed '*the Part L 2013 Fees target by 46% (semi-detached house) and 51% (mid-floor flat), while meeting the proposed Part L 2020 requirements, through the use of heat pumps'*.

The potential for homes to be built to lower fabric standards under the proposed 2020 standards for England than required by existing standards are also highlighted by others including LETI (the London Energy Transformation Initiative)[4].

It is vitally important that new standards for Northern Ireland result in homes being built to significantly higher fabric standards than those currently required. Under no circumstances must they allow for homes to be built to lower than current fabric standards.

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

We would like to use our response to this question to emphasise the importance of monitoring and enforcement of energy efficiency installations. Historically there has been a considerable focus on the front end of quality (e.g. a company has a specific certification). However, there has not been as much focus on the back end of quality (i.e. checking that installers have done what they are meant to have done). Of particular relevance here is PAS 2035 which is the new specification for the energy retrofit of domestic buildings and details best practice guidance for domestic retrofit projects. The use of PAS 2035 should, in theory, ensure that each installation is a high quality one. Under GB's Energy Company Obligation (ECO) PAS 2035 will be required from 2021 – it is important that the Northern Ireland Executive makes a decision about whether PAS 2035 will be a requirement for its energy efficiency programmes.

There are plans to introduce the following:

- an extended transition period for certification and compliance with the updated PAS standards, ending 30th June 2021
- transition period by installers certified to and compliant with the PAS2030:2019 standards; and
- TrustMark also plans to amend its updated Framework to require guarantees in place for all ECO measures, with a minimum length of two years. The transition period for the implementation of TrustMark has been extended from 31st January 2021 until 30th June 2021 (6-month extension). From this date, all installers must install in accordance with PAS2030:2019 and PAS2035:2019
- And from 1st January 2020, all measures must be installed by a Trustmark registered business.

[4] See for example: https://www.theguardian.com/artanddesign/2020/jan/24/changes-building-regulations-less-energy-efficient

- From 1 July 2020, a requirement for underfloor and room-in-roof insulation measures to be accompanied by a guarantee of 25 years or longer that meets the "appropriate guarantee" criteria
- All other ECO measures must have a guarantee of at least 2 years. This change includes loft insultation which has not previously required a guarantee.
- Changes to certain First Time Central Heating (FTCH) measures will be increased, which will result in higher savings scores and might consequently result in increased funding.
- FTCH will be allowed to be installed in PRS EPC Band F&G rated properties (this is not allowed at present).
- Homes receiving FTCH will have to have their cavity walls and lofts/roofs insulated where such insulation is possible.
- FTCH will not be allowed to be installed as in-fill under local authority flexible eligibility (this had been proposed in the consultation).
- At the latest date of June 2021 (once the pilot is completed), TrustMark will replace Ofgem in taking full responsibility of technical monitoring for measures delivered within the TrustMark framework.
- There will be an £8 plus VAT lodgement fee for TrustMark (lower than the £10 plus VAT originally proposed).

We recommend that NI Government review the current changes as described above for ECO3 to decide if any should be replicated for the current and future energy efficiency schemes in Northern Ireland. The Northern Ireland Executive will need to take into consideration whether or not there are other accreditation bodies, other than TrustMark to refer to, given that what PAS35 is really trying to achieve is the Quality Assurance of multiple measure installations.

As noted above, this is an area where Energy Saving Trust has considerable expertise and we would be happy to lead a discussion with the Northern Ireland Executive to explore these issues if this would be helpful.

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

a) New domestic and commercial buildings by 2050?;

<u>New domestic buildings</u>

We have recently developed a set of principles that we should underpin the development of building regulations across all four nations of the UK. These are listed below and we recommend they are used to inform the development of any changes to Part F of the building regulations for Northern Ireland:

1. New homes should be built to the most efficient fabric standards
2. New homes built from 2024/25 should only be heated by low/zero carbon heating systems and homes built from 2020 should be future proofed in readiness for low carbon heating systems in the future.

3. New build homes should generate as much low carbon power as realistically possible.
4. Local planning authorities should be allowed to go beyond national standards, but within a national trajectory of standards.
5. Builders must not be able to build to out of date energy standards.
6. Reducing water use in new homes is inseparable from energy saving. A mandatory government-led water efficiency label for the UK should be introduced and used a basis for fixture-based energy standards in building regulations.
7. Compliance and enforcement measures for building regulations must be strengthened and in-use energy monitoring incorporated.
8. The Northern Ireland Executive should set out a timetable for introducing requirements for cutting the carbon used in the construction of new homes, and targets for reductions.
9. Further delays are not acceptable. Zero carbon homes are affordable to build, deliver wide benefits for occupiers, and are vital to tackle the climate emergency. The Northern Ireland Executive must require that new homes meet an operational zero carbon standard by 2025 at the latest.

We note that every country in the UK except for Northern Ireland has consulted or has committed to consult on improved energy standards for new build homes and to moving away from fossil fuel heating systems by 2025. It is important that the Northern Ireland Executive rapidly develops its new build policy to ensure zero carbon new homes by 2025.

b) Existing domestic and commercial buildings by 2050?

<u>Existing domestic buildings</u>

We believe that the most important policies for government to ensure zero carbon in the household sector are:

- A range of regulation (including regulation of energy efficiency standards across all tenures of the housing stock) and planning requirements to improve the energy performance of existing homes and new homes.
- A range of financial incentives to encourage investment in energy efficiency and microgeneration in homes – ensuring that all homes are able to benefit from the financial support they need to (for example, grants for the fuel poor, loans for self-funding householders, equity release schemes for those with equity in their property and for whom loans are not an appropriate option).
- The introduction of a Northern-Ireland wide area-based schemes to deliver retrofit of existing homes street by street along side the national demand led fuel poverty programme Affordable Warmth and NISEP.
- The development of a comprehensive advice programme.
- Review of electricity tariffs to ensure suitable tariffs for new forms of electric heat.

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

We believe that the future of energy efficiency support should be along the lines of that currently provided in Scotland with a wide range of financial support available (grants for the fuel poor, loans for self-funding householders and equity release schemes for those with equity in their property and for whom loans are not an appropriate option). We also believe there would be considerable benefit in introducing a Northern-Ireland wide area-based scheme to deliver retrofit of existing homes street by street alongside the national demand led fuel poverty programme. At the heart of any support programme(s) for energy efficiency must be the provision of advice and we believe that there is considerable scope to build on existing advice provision in Northern Ireland, including the development of an energy carers type approach that is able to offer intensive in-home support for vulnerable households.

It's worthwhile noting such support will require increased levels of investment in Northern Ireland. Even in Scotland where spending is per person on energy efficiency support is greater than in other parts of the UK (and where budgets for energy efficiency are increasing – the budget for energy efficiency and fuel poverty for 2020/21 in Scotland now stands at £162 millions) there is growing recognition that existing budgets are not sufficient to deliver change at the pace and scale required to meet targets (see for example: http://existinghomesalliancescotland.co.uk/news/call-to-double-funding-for-warm-homes-in-scottish-budget-2020-21/)

As Energy Saving Trust has been and continues to be explicitly involved in the delivery of energy efficiency programmes in Northern Ireland we do not feel it is appropriate to comment on who the key delivery bodies should be.

6. Heat

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

We note that a number of pathways/route maps have been proposed by governments and stakeholders for the decarbonisation of heat in other parts of the UK. However, these are unlikely to be appropriate for Northern Ireland given its reliance on oil as a heating fuel.

In other countries of the UK we would urge governments to support off-gas-grid homes to switch to heat pumps and biomass heating systems, alongside necessary energy efficiency. Given:

- The number of Northern Ireland's homes that need to switch away from oil heating,
- The current fragile and limited status of the supply chain for heat pumps
- The damage to trust and credibility caused by the RHI
- Potential negative electricity grid impacts of a large scale switch to electric heating.

We consider that intermediate steps need to be taken to make Northern Irish homes "renewable heat ready" with a large scale roll-out planned from the mid to late 2020s.

One potential pathway that we believe would merit further analysis would involve deeper energy efficiency retrofit than that planned in the rest of the UK. Energy efficiency is no regrets option for renewable heat and in particular will ensure that homes are suitable for heat pumps in the future. In the near term such an approach may allow for the option of replacing existing oil boilers with smaller oil boilers (due to reduced heating loads associated with very energy efficient properties and correct sizing) or replacing existing oil boilers with hybrid oil heat pumps or a combination of both. (One important step would be tighter regulations to ensure oil boilers are not oversized and are fitted with weather and load compensators and variable flow TRVs).

Approximately 200,000 homes, mostly oil heated now have an available gas connection, but have not yet taken advantage of it. This is a major challenge for the renewable heat transition. Is continuing to connect these homes consistent with a net zero target? Should all of these 200,000 homes continue to be connected to the gas grid or be supported to move straight to renewable heating? Our view is that there is unlikely to be a single, simple answer to this question. Instead a detailed review of the housing stock needs to be undertaken to determine the best way forward for these homes beyond the immediate term – ensuring decisions are consistent with the need to deliver against a net zero target. This should take place alongside a wider review of Northern Ireland's gas grid expansion plans in the context of the need for Northern Ireland to reach net zero emissions. There is little point investing in the expansion of the gas networks when direct low carbon alternatives to natural gas (particularly hydrogen) are not yet fully demonstrated, and if developed are likely to be needed first in other sectors of the economy (industry, freight etc).

High quality, low carbon alternatives to fossil fuel heating already exist, and are proven, in the form of heat pumps and biomass boilers. If the housing sector is to fully decarbonise the Northern Ireland Executive must take steps to build confidence amongst customers, supply chains and wider stakeholders, in renewable heating systems. This should include the development of, as recommended by the CCC, support packages to incentivise consumers to install low-carbon heating in

homes off the gas grid. We would recommend the roll-out of pilot programmes to demonstrate how heat pumps can work well in different types of Northern Irish homes and to test newer heat pump technologies (high temperature heat pumps, hybrid systems) in the Northern Irish context. There is also a need for the Northern Ireland Executive to work with industry and the regulator to develop better tariffs to support greater use of electricity for heat.

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

In terms of measuring progress with heat decarbonisation the Northern Ireland Executive might find it useful to draw on Scotland's experience of measuring progress towards meeting its target of 11% of non-electrical heat demand from renewable sources by 2020.

In order to help measure progress towards this target Energy Saving Trust maintains a database of renewable heat installations (referred to as the Renewable Heat Database or dataset throughout this report) on behalf of the Scottish Government. The database records installations known to be operating and those currently in various stages of development. It contains data on the capacity and yearly heat output of those installations and is updated annually. The database also includes information on district or 'communal' heating schemes throughout Scotland. Further information about the methodology used can be found here: https://energysavingtrust.org.uk/sites/default/files/Renewable%20Heat%20in%20Scotland%2C%202018%20Report.pdf

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?**

No response.

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?**

No response.

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

We do not have any evidence that we can provide on the opportunities for district heating schemes in Northern Ireland. We believe that responsibility for facilitating district heating schemes in Northern Ireland should lie with Government.

In Scotland we manage the Scottish Government funded District Heating Loan which is designed to help address the financial and technical barriers to district heating project. In addition, the Scottish Government also funds, via Energy Saving Trust, Home Analytics and PEAT (the portfolio energy analysis tool) for local authorities and RSLs. Home Analytics is being used in Scotland to help identify domestic heat loads and local domestic demand for district heating. Home Analytics can be used to model the current local energy demand and PEAT can be used to model possible demand reduction strategies that could be applied to meet available or planned future heat loads from identified sources. We would be happy to provide additional information about the work we undertaken on behalf of the Scottish Government to facilitate the development of district heating in Scotland.

Local authorities could also have an important role to play in this space. In Scotland, for example local the Scottish Government has funded local authorities to pilot the development of Local Heat and Energy Efficiency Strategies (LHEES) with the aim of establishing area-based plans and priorities for systematically improving the energy efficiency of buildings and decarbonising heat. Other recent research, for example that undertaken by the Energy Systems Catapult highlights the need for local area energy planning.

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

No, we do not have any evidence or information on the opportunities for geothermal heat supply in Northern Ireland.

7. Power

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

No response.

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

No response.

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?**

No response.

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

Increasing household energy efficiency can help to meet any new renewable electricity targets – assuming that targets continue to be set as a percentage of total electricity consumption as per the existing target. As such a reduction in the total consumption of electricity in Northern Ireland would result in a consequent reduction in the absolute amount of renewable electricity that would need to be generated to meet renewable electricity targets. And investing in energy efficiency is considerably cheaper than investing in renewable energy. Energy efficiency can therefore also help to deliver renewable electricity targets at minimum cost and therefore reduce impacts on household fuel bills with subsequent positive impacts on fuel poverty.

There is also the potential for household scale electricity generation to make a greater contribution to any overall renewable electricity target. There is a need for the Northern Ireland Executive to put in place mechanisms to optimise the contribution that household scale electricity generation can make to overall targets.

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?**

Our relevant expertise in this area is limited to community investment in renewable generation. At a UK level we have highlighted the need to reinstate Social Investment Tax Relief (SITR) which is the UK government's tax relief for social investment for trading social enterprises. Historically community energy projects have been excluded from this relief because they benefitted from other subsidies. However, there are currently no other subsidies in place and we therefore believe community renewable energy projects should be an eligible activity for SITR tax relief and believe this will encourage more investors to get involved with energy schemes.

We also believe there is scope to replicate some of the support provided to community energy schemes in Scotland via the CARES programme. Again, we would be happy to discuss this with you in more detail if you would find it useful.

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

No response.

8. Transport

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

Energy Saving Trust plays a significant part in supporting the UK's transition to a zero emission transport system. We promote ultra-low emission vehicles (ULEVs) and the development of charging infrastructure, fuel efficiency and active travel by working with businesses, local authorities, national government fleets, private drivers and supply chains. Funded by the UK's Department for Transport and Office of Low Emission Vehicles (OLEV), Energy Saving Trust delivers the UK Government's Road to Zero strategy, and delivers a wide-range of services under an innovative programme for Transport Scotland.

Any pathway to decarbonised transport should be based on the sustainable transport hierarchy and must ensure that walking, cycling and wheeling are seen as preferred options for shorter journeys. For longer journeys, where public or shared transport is not viable, electric vehicles (EVs) should be the preferred alternative to petrol and diesel vehicles.

Investing in public transport, including electric buses, and other forms of low-carbon, shared mobility, should be a priority particularly in rural areas where there could be less incentive for private investment.

An appropriate pathway will seek to incentivise uptake, build confidence in the technology among Northern Ireland's communities and will need to consider the specific challenges for different sectors and user groups. Encouraging public and private sector fleets to buy or lease electric cars and electric vans could be a highly effective initial step for Northern Ireland. Adopting these vehicles is often cost-effective for the organisation and normalises the use of EVs among staff.

Additionally, encouraging the uptake new EVs by fleets is essential to generate the lower cost, used vehicles for those in the community who cannot afford new electric vehicles. Government action is recommended to accelerate the creation of a strong EV supply chain, including used EV market and aftersales support, within Northern Ireland as this impacts purchase decisions and affordability.

While some training will be delivered through manufacturers for franchised retail sites, government support is particularly valuable for independent businesses and to ensure accurate advice is delivered as the market is established. Energy Saving Trust is working with the used vehicle supply chain in England and Scotland, including used car and van dealers and motor auctions, to train their sales and administration staff so that they can confidently buy and sell electric vehicles, thereby allowing customers to take advantage of the lower running costs with the initial purchase or lease premium. Energy Saving Trust also supports the development and delivery of the popular Electric Vehicle Approved scheme for retail sites, led by the National Franchised Dealers Association. Mechanics also require additional training to safely service and repair EVs.

Developing a reliable, convenient and smart charging network across Northern Ireland is essential to enable the transition to EVs at scale. Ensuring a fair and equitable transition to decarbonisation across

Northern Ireland is important to make sure that low-income, or more rural areas are not disadvantaged. Additional financial incentives, like grants, or low interest loans can improve the affordability of EVS, and can positively influence purchasing decisions for businesses and individual drivers. Energy Saving Trust would be pleased to share the success of the EV Loan and related programmes that are delivered by Energy Saving Trust in Scotland, funded by Transport Scotland.

It's worth noting that air quality improvement, rather than decarbonisation, has been the major policy driver for many cities across the UK to date, leading to investment in sustainable transport initiatives and implementation of Clean Air Zones. The Northern Ireland Executive may wish to consider targeting initiatives which tackle local pollution hotspots or specific businesses such as taxi / private hire and delivery fleets.

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

Active travel has a key role to play in the decarbonisation of the transport sector, if Northern Ireland is to become net zero by 2050. As noted above, we believe that walking, cycling and wheeling should be the preferred options for shorter journeys. In this context, the Northern Ireland Executive might find the Scottish Government's active travel framework of interest. For longer journeys, where public or shared transport is not viable, promotion of EVs should be the preferred alternative.

There are a range of interventions that the Northern Ireland Executive could make to support the uptake of active travel in Northern Ireland. Firstly, there is a need for the Northern Ireland Executive to accelerate the creation of active travel routes. Secondly, there is a need for incentives for NI citizens to engage in active travel. eBikes are growing in popularity due to their ease and inclusivity.

Energy Saving Trust propose that the Northern Ireland Executive offers grants and loans to support the purchase of e-bikes and eCargo bikes. Currently, businesses, non-profits and local authorities in England can apply to the eCargo Bike Grant Fund (up to 31 March 2020), and in Scotland, individuals, businesses, public sector and communities can access grants or interest-free loans for ebikes. In Scotland ebikes are also offered on a free of cost trial basis to individuals, businesses and community groups. These have proved incredibly popular since launching in 2018 and provide a key route to uptake via loan and grant funding support. We also propose that the government offers its own national 'cycle to work' scheme, offering support and discounts to organisations that allow employees to opt-in to a salary sacrifice scheme that provides savings on bike purchases. Rather than saving 42% on the price of a bike and accessories (as under the current UK-wide Cycle to Work Scheme), the government could offer an enhanced 50% saving for those living and working in Northern Ireland.

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

The timely delivery of a reliable, affordable and convenient public charging infrastructure network across Northern Ireland, supported by home and workplace chargepoints for those with off-street parking, is necessary to facilitate the EV transition. Across the UK, some perceived barriers to widespread EV adoption remain but well-designed, scalable, interoperable and cross-border public charging networks can help support driver confidence in EVs, as a viable option for regular and longer journeys alike.

As far as Energy Saving Trust is aware, there is only one commercial chargepoint operator in Northern Ireland which is in part attributable to the impact of the Maximum Resale Price of electricity preventing profit being made on the electricity tariff at chargepoints, discouraging private investment. This was the subject of consultation in November 2019. Whichever option is adopted, a high priority should be to publish the outcomes and take the necessary legislative steps as this could be a major step towards unlocking investment in public charging infrastructure.

Additionally, Energy Saving Trust does not recommend that the charging network remains free to use, especially where one operator dominates. Whilst attractive to EV drivers, this situation is unlikely to be financially sustainable in the longer term as EVs become mainstream, is a disincentive for private investment at scale and can discourage ongoing maintenance and upgrades. In most situations, the running costs of EV are already much cheaper than those of petrol and diesel vehicles. Energy Saving Trust can share our experience of the introduction of tariffs on the ChargePlace Scotland network and by local authorities across England on previously free networks.

Electricity Grid investment

Before considering what infrastructure is needed in Northern Ireland in terms of numbers and locations of chargepoints, it is important to address the implications for the energy system, and some of the unique challenges presented by transport.

The low carbon economy will lead to an increase in electricity demand from electrified heat and vehicles. The electrification of road transport based on the RTZ targets could increase today's electricity consumption by 30% by 2050 (EV Energy Taskforce, p8). Unless intelligently controlled, an increase in peak demand will be problematic, however EVs and chargepoints also present benefits for the electricity system by providing enhanced, flexible and distributed energy storage capacity.

The Electric Vehicle Energy Taskforce: Energising Our Electric Vehicle Transition summarises the recommendations generated by a wide coalition of stakeholders, many of which will be highly relevant to Northern Ireland. It is vital that the transition to EVs is developed in a policy environment which places a strong emphasis on the three priorities identified: interoperability and data sharing, effective local and national planning, and smart charging and connectivity, whilst keeping consumer needs at the heart of the transition. The taskforce also highlighted the importance of impartial advice for drivers and households through impartial organisations, such as Energy Saving Trust.

Technologies such as local renewable energy generation, storage and alternative transmission models such as vehicle to grid (V2G) also will have an important role to play in mitigating the risks to the grid.

Charging infrastructure

Charging infrastructure requirements

Different driver groups each have their own operational needs and charging networks need to be designed with a range of power specifications to make charging convenient. For on-street, workplace or destination charging, where drivers leave vehicles for extended periods, slower rates of charge, such as 7kW might be adequate, but for en-route charging, rapid rates of charge (50kW and above) will be required. There are other aspects to consider, such as dimensions of charging bays for electric goods vehicles and disabled access and the distance to facilities for drivers. A balanced charging

infrastructure that considers different driver needs will help ensure that the best network is delivered, with the most efficient use of investment.

Through the Switched on Towns and Cities programme, funded by Transport Scotland, Energy Saving Trust has provided Scottish local authorities with technical analysis, helping develop an evidence base for infrastructure plans.

This support has included:

- insights demonstrating chargepoint use on a half hourly basis
- local engagement surveys
- modelling and forecasting of EV local uptake
- chargepoint site identification and mapping
- evaluation of grid connectivity and capacity (where available)
- modelling of operational cost models.

Charging infrastructure targeted support

As a starting point to help ensure a fair transition, government investment in charging infrastructure should be focused on ensuring access to overnight charging in residential areas without off-street parking (i.e. by encouraging or match funding ORCS applications) and in rural areas. Investing in strategic locations on the road network would also improve the drivers' confidence to undertake longer journeys. The Northern Ireland Executive may wish to consider targeted funding pots for different types of chargepoints to accelerate the growth of the network.

In Scotland, Energy Saving Trust has delivered a varied chargepoint funding programme including top-up grants for EV drivers with off-street parking to install a home chargepoint, for workplaces looking to install infrastructure for their pool cars, staff and clients, and a strategic scheme to enable 'hosts' such as cafes to install public charging infrastructure.

Additionally, funded by the Department for Transport, Energy Saving Trust has a dedicated Local Government Support team offering independent consultancy support to councils in England, initially to support air quality improvements. The programme was developed in response for the need for greater coordination between authorities and central government and highly varied levels of officer expertise in charging infrastructure and related initiatives and has been highly successful. A similar impartial team or resource would enable local authorities (and/or business fleets) to fully understand their choices and take advantage of the opportunities presented by EVs and charging infrastructure.

Approaches to funding charging infrastructure

It's worth noting at the outset that charging infrastructure in England and Scotland has developed in different ways as a result of differing approaches taken by the respective governments. The UK Government, through the Office for Low Emission Vehicles, sees an important role for private sector investment to enable the delivery and operation of a "self-sustaining public network", as outlined in the Road to Zero. A range of commercial and regional network operators are established with different offerings for businesses, local authorities and drivers. To date, UK Government support tends to target

specific areas of market failure, such as streets without off-street parking or particular user groups, such as taxis. The 2020 Budget also announced £500m for rapid charging hubs.

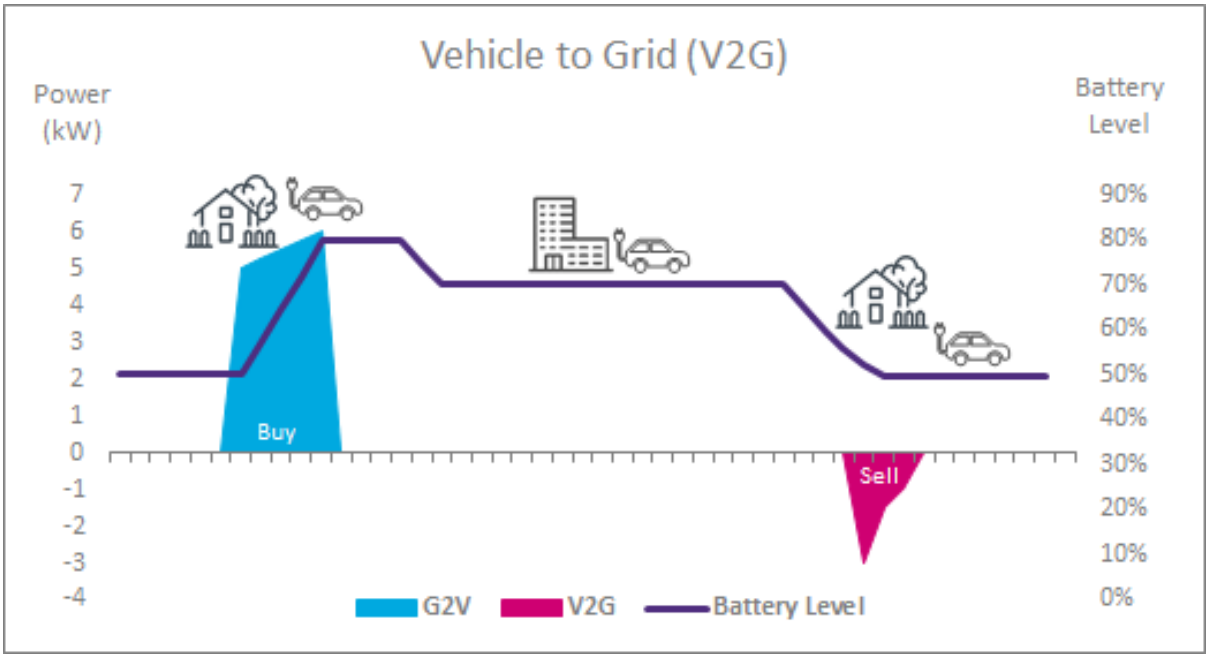
Meanwhile, the Scottish Government has invested heavily ahead of demand and the Chargeplace Scotland network now has over 1000 chargepoints, providing excellent coverage throughout key areas of Scotland including the highlands and islands and other remote areas. The distributed and rural nature of Scotland's geography means that, on aggregate, the existing network could be presented as under-utilised and over-supplied. However, analysis of chargepoint distribution highlights that the least used chargepoints are often providing critical network resilience for the more rural areas, supporting connectivity and green tourism, and ensuring a just transition across all communities in Scotland, regardless of location.

Energy Saving Trust would be happy to discuss delivering charging infrastructure in more detail, drawing on our experience of supporting the infrastructure programmes of both governments.

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?**

As EVs are in essence mobile batteries, the transition presents a huge range of opportunities for households and businesses, which are at various stages of market readiness. The Northern Ireland Executive should review the proposals of the EV Energy Taskforce as they are highly relevant to developing this new market and ensuring it works in the interest of the consumer.

Vehicle-to-grid (V2G) technologies are advanced forms of smart charging and enable drivers of compatible vehicles, with V2G enabled chargepoints to export electricity back to the grid at times of undersupply, or when there is a price incentive to do so. Conversely, these vehicles can charge at times of grid oversupply, or where there is a price incentive to do so, see diagram created by Energy Saving Trust.



Source: Energy Saving Trust

As electricity generated by renewable sources increasingly becomes the cheapest source of electricity, V2G charging algorithms will harmonise with fluctuations in renewable availability, lowering the carbon intensity of EV charging.

V2G and other smart charging technologies are highly compatible with solar PV, domestic home battery storage solutions and specialist EV energy tariffs, maximising the opportunities to self-consume on-site renewable generation. For those who are able to afford harmonising these technologies, there can be a significant cost incentive where on-site, renewably generated electricity is used to displace petrol or diesel mileage. Powerloop, one of the first domestic trials of V2G technology offers a leased EV, chargepoint and tariff bundle and £30 cashback a month, depending on how frequently the vehicle is plugged in.

On-site renewables and battery storage also present opportunities for commercial fleets where expensive grid upgrades would be required to adopt EVs, either due to the nature of the site, the number of EVs (i.e. SEUL project involving UPS)or where sites are leased (to avoid sunk costs).

The Northern Ireland Executive could offer a funding competition or additional top-up grants for households, businesses or local authorities using cutting-edge smart charging devices and developing integrated projects.

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

It is likely that alternative fuels will have a role to play in decarbonising heavier vehicles, such as HGVs. As this is not Energy Saving Trust's areas of expertise, we recommend speaking with the Low Carbon Vehicle Partnership.

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?**

Energy Saving Trust has a range of data and learnings stemming from the various transport grants, engagement and analytical programmes we manage on behalf of governments across Great Britain to support individuals, fleets and local authorities. We would be happy to discuss the data that we are able to share publicly with the Northern Ireland Executive if this would be useful.

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?**

In terms of actions that can be taken to mitigate security of supply risks – it is worthwhile emphasising the role that energy efficiency can play here – by reducing overall energy demand, energy efficiency can reduce reliance on imports of energy from outside of Northern Ireland.

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

No response.

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)?**

While we can't comment on the cost-effectiveness of different methods of capturing consumer energy usage in electricity and natural gas we note that BEIS' updated cost benefit analysis for the GB smart meter roll out emphasises that '*the programme will continue to deliver significant benefits for households and small businesses in Great Britain, with a total Net Present Value (NPV) of £6bn over the appraisal period*'[5].

We would also like to highlight that Energy Saving Trust, on behalf of Scottish Government, has been involved, for a number of years in capturing consumer energy usage in electricity and natural gas. This has been through our Scottish Government funded smart meter advice programme which integrates smart meter data into the advice delivered by Home Energy Scotland (where a customer has provided consent for Energy Saving Trust to access their data). This allows Home Energy Scotland advisors to discuss actual energy consumption levels and patterns for a customer as well as provide more tailored savings estimates. This builds on a significant amount of pilot work undertaken between 2012 and 2014 and funded by the EU's Northern Periphery Programme and the Scottish Government.

The original piloting work upon which this work built also involved the provision of a metering solution that allowed pilot participants whose homes were heated with oil to access their oil use data via a web tool which Home Energy Scotland advisors could also access in order to enhance the energy saving advice they were able to provide. We would be happy to provide additional information about this part of the pilot and the type of equipment used if it would be of interest.

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

The key point we would make in response to this question is that we believe it is important to ensure that data privacy does not to stand in the way of people being able to easily engage with their energy consumption.

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

No response

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

We see governments and their delivery agents as having a key role to play in optimising the value of data. As mentioned in our response to question 38 above Energy Saving Trust, on behalf of Scottish Government, is playing a key role in optimising the value of smart meter data in Scotland by using it (with the customers consent) to enhance the energy saving advice it provides. We believe there are

[5] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831716/smart-meter-roll-out-cost-benefit-analysis-2019.pdf

further ways of optimising the value of smart meter data – for example it could also have a key role to play in the evaluation of energy efficiency programmes – allowing energy use data from before an installation and after an installation to be compared. Where data suggests a discrepancy between expected and actual savings after the installation of energy efficiency measures this could act as a trigger for the provision of additional householder support.

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

No response.

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

Most of the analysis of economic opportunities we are aware of relate to decarbonisation of the household sector at either a UK level or a Scottish level.

Frontier Economics, on behalf of the Energy Efficiency Infrastructure Group (a coalition representing industry groups, NGOs, charities and businesses asking for rapid improvement) has modelled the economic benefits of retrofitting homes in the UK (to energy performance certificate 'C') See: https://www.theeeig.co.uk/media/1063/eeig_net-zero_1019.pdf

The benefits at a macro level include the following:

- Economic returns: In total, bringing all homes up to at least EPC Band C and so cutting energy demand in homes by 25% represents an energy saving equivalent to the annual output of six power stations the size of Hinkley Point C. Appraisal based on HM Treasury's methodology for energy and climate policy finds that the net present value of this saving would be £7.5 billion. Appraised as an infrastructure investment, the net present value – to the economy, reduced power system investment needs and from improved health – amounts to an additional £47 billion[6]

- It would reduce the need for costlier upgrades to the electricity grid and new power supply, with a present value of avoided electricity network investment of £4.3 billion[7]

- Without energy efficiency, the costs of decarbonising heat to 2050 – ultimately borne by consumers – could be £6.2 billion higher per year[8]

- It would enhance energy security, by reducing the need for gas imports, improving the balance of trade and boosting GDP in the process. As a result of greater energy efficiency investment, GDP could be 0.6% higher in 2030 – £13.9 billion – driven mainly by a 26% reduction in imports of natural gas by 20309. In the long term the public investment pays for itself. The economic activity that would be driven by an energy efficiency infrastructure programme delivers tax revenue, cumulatively £51.1 billion by 2030. In present value terms, a return of £1.27 per £1 invested would be achieved over this time[9].

[6] Rosenow et al. (2018) The remaining potential for energy savings in UK households
[7] Ibid
[8] Imperial College London (2018) Analysis of Alternative UK Heat Decarbonisation Pathways
[9] 9Cambridge Econometrics & Verco (2014) Building the Future: the economic and fiscal impacts of making homes energy efficient

In Scotland it has been estimated that:

- If all households are included in an energy efficiency initiative, GDP is projected to expand by about 0.15%.[10] The potential savings made through spending less money on energy also increases the spending power of households, allowing them to spend their money in other ways, however this is also dependent on market drivers such as fuel prices

- A national energy efficiency programme will require the creation of new skilled job opportunities, and recent research estimates that 6,000 long term jobs will be created, with an additional 9,000 to cope with the peak of retrofitting activity.[11] These jobs are aligned with the Just Transition Commission's guiding principle of planning, investing and implementing a transition to environmentally and socially sustainable jobs.

- Scottish Government's Energy Efficiency Scotland route map notes that '*every £100 million spent on energy efficiency improvements in 2018 (is) estimated to support approximately 1,200 full-time equivalent jobs across the Scottish economy*'.

- Living in poor housing, including in cold, damp and mouldy conditions is strongly linked to poor health and excess winter deaths.[12] It is estimated that poor health made worse by bad housing conditions costs the NHS in Scotland between £48m and £80m per year.[13] This is evidenced in evaluations of energy efficiency programmes in Scotland[14] which showed that improving the energy efficiency of homes contributes to better living conditions, improvements in cold-related health conditions and savings for the NHS in Scotland.

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

Our response to this question is based on our experience with the domestic energy efficiency and renewable heat supply chains in Scotland. However, we believe that much of it will be applicable to Northern Ireland and as such the skills we believe will be required are as follows:

- Energy efficiency:
    - EWI/IWI/room in roof/underfloor insulation skills in particular.
    - Smart heating control skills
    - Energy storage – batteries (inc. EV considerations) as well as thermal stores
    - Passivhaus skill for new build and other high EE standards
    - Building control officers skills in understanding EE (and heat)
- Heat:

[10] Turner, Karen and Figus, Gioele and Riddoch, Fiona (2017) So Which Households Can Benefit from Energy Efficiency and is there an Argument to Fund from the Public Purse? Research Briefing 04.
[11] Centre for Energy Policy, University of Strathclyde (2018); Potential wider economic impacts of the Energy Efficient Scotland programme
[12] National Records for Scotland (2019); Winter Mortality in Scotland 2018/19
[13] Citizens Advice Scotland (2014) Economic impact of improving the energy efficiency of fuel poor households in Scotland
[14] http://www.healthscotland.scot/media/2218/4_elaine-caldow_cassandra-dove.pdf

- Heat network skills. Please note that we ran a workshop in November 2019 to identify skills gaps in relation to the development of heat networks and would be happy to share the results of this work with you if you would find it useful.
- Heat pump installation and quality assurance

Please note earlier discussion (see our response to question 15 above) of the PAS2035 framework which we think is key to driving a quality assured framework delivered by appropriately qualified installers.

Other points to consider are:

- Grid constraints and possible skill requirements relating to this particularly given electrification of heat and EV use
- If like Scotland then NI will have an ageing workforce so real issue about future skills supply so need to consider young people at school etc.
- Other softer skills may also be required e.g. customer service, working with vulnerable people and procurement.

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?**

No response.

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?**

The regulatory framework for decarbonising Northern Ireland

We note that Northern Ireland is the only devolved country in the UK without its own specific carbon emissions reductions targets. Without a clear idea of what emissions reductions need to take place by when and in what sectors it will not be possible to ensure that the most appropriate approaches are taken to the decarbonisation of energy in Northern Ireland. We would urge discussions with the CCC about the appropriate planning and governance framework and a review of the system in Wales where the Environment Act 2016 set in place devolved carbon budgets

It is increasingly recognised that a key part of planning for decarbonisation is focusing on energy justice – ensuring that the decarbonisation of the energy system do not hit the poorest hardest and that communities previously dependent on fossil fuel related industries are not left economically crippled. We urge the adoption in Northern Ireland of a Just Transition Commission following the Scottish model and with powers to influence policy parallel to CCC advice provided within any new carbon budget system (see paragraph above).

Governance of the transition process

Decarbonising energy in Northern Ireland will require the investment of many billions of pounds, work to deliver decarbonisation will extend over the lifetime of at least 7 Northern Ireland Executives, and will touch on every household and business in Northern Ireland. It will therefore be important that

there is an independent system of oversight and governance to ensure concentrated expertise, drive and leadership over the period between 2020 and 2050. An independent system of oversight and governance should also help ensure that there is ongoing continuity and that plans are not subject to uncertainty resulting from changes of administration.

Similar questions have been raised in Scotland in relation to decarbonising Scotland's buildings (both domestic and non-domestic) through the Energy Efficient Scotland programme. Below we provide a brief summary of relevant work undertaken and decisions taken in Scotland and signpost to further information where relevant.

Energy efficiency has been designated as an infrastructure priority in Scotland and the Scottish Government have stated that this will be delivered through Scotland's Energy Efficient Scotland programme. The programme is expected to last between 15 and 20 years and it has been estimated that it will require investment of around £10-£12 billion. The 2017 Scottish Government consultation on Scotland's Energy Efficient Scotland Programme (now known as Energy Efficient Scotland) asked '*What would a good governance structure to oversee any framework of responsibilities between national and local government look like?*' in response many stakeholders agreed that there is a need for '*an independent national body with responsibility for strategic oversight and delivery*'[15]. As a result, in June 2018, the Scottish Government commissioned a Strategic Outline Case which the tender notice noted was an '*options appraisal on the various potential governance structures for a SEEP National Delivery Mechanism*'. KPMG undertook this work and their report was published by the Scottish Government on 19th April 2019 and can be found here file:///C:/Users/Elaine.Waterson/Downloads/energy-efficient-scotland-strategic-outline-case-proposed-development-national-delivery-mechanism%20(1).pdf. Based on the analysis undertaken two leading options were identified, these were a) A new EES Directorate and b) A Non Departmental Public Body.

The Scottish Government however decided not to pursue an Outline Business Case (OBC) to explore an NDPB option alongside the directorate option given the pace of change required with the climate emergency and instead decided to proceed with an internal delivery structure for EES, combined with a strategic governance arrangement that they are currently discussing with COSLA and SOLACE[16].

Also of relevance here is a policy briefing produced by the Existing Homes Alliance Scotland[17] which provides a framework for assessing options for oversight arrangements for energy efficiency governance in Scotland. The briefing is based on a full scoping study commissioned by the Existing Homes Alliance and funded by the European Climate Foundation. The research consisted of a literature review covering global, European, UK and Scottish sources, supplemented by a review of responses to relevant consultations, and discussions with a small number of stakeholders. The study considers options for oversight within the context of a wider framework of energy efficiency governance. The policy briefing can be found here: http://existinghomesalliancescotland.co.uk/wp-content/uploads/2018/11/OversightBody_EXHAsummary_FINAL_Nov18.pdf

[15] See: Page 5 of SEEP consultation analysis of responses here: https://www.gov.scot/publications/analysis-responses-consultation-scotlands-energy/

[16] See: https://www.parliament.scot/S5_EconomyJobsFairWork/General%20Documents/20191217-MinECI-EES-Routemap.pdf

[17] The Existing Homes Alliance is a is a coalition of housing, environmental, fuel poverty and industry organisations calling for urgent action to transform Scotland's existing housing stock and make it fit for the 21st century. For further information see: http://existinghomesalliancescotland.co.uk/

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

We believe there are considerable opportunities for local government in Northern Ireland to contribute to the delivery of the net zero carbon target – particularly in relation to their roles in planning and building control. It will be important to ensure that local authorities are appropriately resourced to allow them to contribute effectively.

Beyond planning and building control there are wider opportunities for local authorities in Northern Ireland to contribute to emissions reductions. The UK Government's £33.5 million Place-based Climate Action Network (P-CAN) project has been set up to enable cities and towns to build local action on climate change by building their capacities for action, developing investable projects and accessing finance. The project will create a network of new and extended city climate commissions in 3 UK cities – one of which is Belfast, see: http://www.lse.ac.uk/GranthamInstitute/news/new-3-5m-research-network-to-support-uk-transition-to-a-low-carbon-economy/

Belfast City Council is working with a range of stakeholders including Queen University of Belfast. A Belfast Energy Transition and Climate Commission has been established in 2019 with a focus on how to develop a 'Just Transition' plan for Belfast to decarbonise, enhance climate resilience, reduce energy poverty and car dependence etc. in ways that do not unfairly impact on the already vulnerable or without mitigating measures for jobs and sectors negatively impacted by the shift away from carbon energy.

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?**

As noted in our response to question 46 above we believe there is an independent system of oversight and governance to ensure concentrated expertise, drive and leadership over the period between 2020 and 2050. We also believe there is a need for Northern Ireland to develop its own specific carbon emissions reduction targets and a carbon budget system and a Just Transition Commission.

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

See response to Q46 above.

10. Additional information

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

There is nothing else we would like to add in response to this Call for Evidence.