Consultation on Northern Ireland's 2030 and 2040 Emissions Reduction Targets and First Three Carbon Budgets

&

Seeking Views on CCC Advice Report: The path to a Net Zero Northern Ireland

Response Template

June 2023

You can access the consultation document and online survey here https://www.daera-ni.gov.uk/consultations/carbonbudget.

We would encourage participation from all interested parties. The primary method for responses is online via **Citizen Space**. The survey is quick and simple to complete. Please supplement your response with any relevant supporting information, evidence and/or analysis.

If you are unable to complete the survey online, you can respond to this consultation by email or post. Please forward the completed Response Temple to DAERA using the email or postal address below:

Email: GreenGrowthFeedback@daera-ni.gov.uk

Post:

Carbon Budget Consultation Response
Climate Change and Green Growth Policy Division
2nd Floor, Klondyke Building
1 Cromac Avenue
Gasworks Business Park
Belfast BT7 2JA

Responses to this consultation are invited until 11.59pm on Wednesday 11 Oct 2023. Following consideration of all responses, a full analysis report will be published on DAERA's website.

If you require any further information, please contact a member of the consultation team on **028 9056 9708**.

Thank you for taking part in this consultation.

First, please tell us 'About You', to help us analyse the responses

A. What is your name?

Dr Francesca Di Palo

B. What is your email address?

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C. What is your organisation

Sustainable Northern Ireland

Questions 1 - 7

You can contribute to this consultation by providing observations and comments in respect of the following questions. Please supplement your response with any relevant supporting information, evidence and/or analysis.

DAERA would welcome your responses to Questions 1-7.

Question 1. The 2030 Target:

Do you agree that DAERA should follow the current advice provided by the CCC and keep the current 2030 emissions reduction target in the Act of at least a 48% reduction in emissions compared to the baseline?

x Yes

❑ No - please provide your reasons and any suggested alternative (Noting that if the target is to be changed, that the Act only allows it to be changed to a higher percentage).

A note to the 48% emission reduction target and SNI's support to this recommendation.

According to the global emission reduction identified in the Intergovernmental Panel on Climate Change (IPCC) Working Group III Report, 'Climate Change 2022: Mitigation of Climate Change', a 1.5 degrees pathway requires CO2 emissions to be reduced by 48% by 2030. It also confirmed that under the current situation, with countries not acting promptly, the world is on a path to global warming of 3.2 degrees, leading to irreversible climate risks. The CCC analysis presents several scenarios, where the reduction by 2030 without engineered removals allocated to NI is 47%, and with technical and timing changes increases to 48%. It is important, though, to remember that the IPCC Special Report on 1.5 degrees Celsius identifies the importance of non-CO2 climate gases (methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), sulphur dioxide (SO2) and black carbon) in influencing the rate of climate change. Hence, we would like to endorse the Tyndall Centre at Manchester University and their report 'Setting Climate Commitments for Northern Ireland', where a key point is raised: 'a cumulative emission budget approach is not appropriate for all non-CO2 greenhouse gases, as the physical and chemical properties of each lead to differing atmospheric lifetimes and warming effects. There are also substantial relative uncertainties in the scale, timing and location of their effects' (J. Kuriakose, C. Jones, K. Anderson, J. Broderick, C. McLachlan).

Question 2. The 2040 Target:

Do you agree that DAERA should follow the current advice provided by the CCC and set a 2040 emissions reduction target of at least a 77% reduction in emissions compared to the baseline?

x Yes

❑ No - please provide your reasons and any suggested alternative.

A note to SNI's support for the 77% reduction in emissions recommended by the CCC.

Although we support this target, which, as stated in the CCC Advice Report, can be reached by adopting speculative options, such as Direct air capture with CCS (DACCS) and Agriculture sector adjusted to Tailwinds (Table 3.1), it is essential to highlight that the CCC is not 'necessarily recommending them without further consideration of achievability, cost and social implications'; and that DACCS 'would be more expensive to do in NI than elsewhere in the UK because any captured CO2 would need to be shipped to a storage facility away from Northern Ireland rather than being stored locally'. We highly recommend claiming, at both NI and UK levels, financial and resource investment to promote and encourage major behavioural shifts to happen across Northern Ireland and the UK, for instance, promoting a shift to a more plant-based diet combined with potential investments in cultured meat. Although it is an early stage to identify the total environmental impact of producing lab-grown meat, it is already appearing to be much more eco-friendly. Compared to conventional beef, lab-grown beef requires 45% less energy use, 99% less land use, and produces 96% fewer greenhouse gas emissions. This could represent an opportunity for the economic transition of Northern Ireland since most of the meat and dairy produced in NI is sold within the UK.

Question 3. First Carbon Budget (2023-2027):

Do you agree that DAERA should follow the current advice provided by the CCC and set the first carbon budget at a level that has a 33% average annual reduction in emissions compared to the baseline?

x Yes

❑ No - please provide your reasons and any suggested alternative.

In June 2023, the Data for Northern Ireland's emissions in 2021 were published.

The longer-term trend showed a decrease of 23.2% compared with emissions in 1990. Between 2020 and 2021 all sectors, except waste management and public, showed an increase in emissions. The most significant increases in terms of tonnes of carbon dioxide equivalent were in the Transport (0.4 MtCo2e), Agriculture (0.3 MtCO2e) and Energy Supply (0.2 MtCO2e) sectors.

In the All-Ireland Fuel Mix Disclosure and CO2 Emissions 2021, it is stated that the drivers were an increase in reliance on coal-based generation and a reduced renewable generation due to lower wind speeds in 2021. The increase in fossil fuel generation observed from 2020 to 2021 does not follow the longer-term plan, which shows a decrease in coal use and a reduction in the carbon intensity of electricity generation. We are aware that EPUKI is phasing out the use of coal at the Kilroot Power Plant, planned for September. Still, it is evident the need for a major commitment of the NI Executive and the UK Government to support this transition.

In 2021, Northern Ireland contributed 5.3% of all UK greenhouse gas emissions, which stood at 426.5 MtCO2e. In the UK there has been a 47.7% reduction in emissions between 1990 and 2021. During the same period, the reduction in emissions in Northern Ireland was 23.2%, compared to 50.2% in England, 49.3% in Scotland and 35.0% in Wales.

SNI support this target of reduction for the First Carbon Budget (2023-2027), aware of the fact that, as stated in the CCC Advice Report, a review of a slightly less ambitious First Carbon Budget could be appropriate to account for a slower start in the first two years, although not meaning that the decarbonisation rates towards the end will slow down.

Question 4. Second Carbon Budget (2028-2032):

Do you agree that DAERA should follow the current advice provided by the CCC and set the second carbon budget at a level that has a 48% average annual reduction in emissions compared to the baseline?

x Yes

❑ No - please provide your reasons and any suggested alternative.

Question 5. Third Carbon Budget (2033-2037):

Do you agree that DAERA should follow the current advice provided by the CCC and set the third carbon budget at a level that has a 62% average annual reduction in emissions compared to the baseline?

x Yes

❑ No - please provide your reasons and any suggested alternative.

Question 6. CCC advice:

Do you agree that DAERA should follow any updated advice and recommendations from the CCC (as a result of the publication of the Northern Ireland 2021 GHG Inventory) when setting the first three carbon budgets?

x Yes

❑ No - please provide your reasons.

As mentioned in the note to question 3 regarding the First Carbon Budget, we would like to reiterate the same point about the potential reduction of that target for the first two years to facilitate the transition. Although it is also important to restate that the speeds of decarbonisation rates must stay at the same level towards the end to meet the 2030 target and the 2050 Net Zero target.

If we want to move towards the electrification of heat and transport (SNI is strongly supporting the implementation of public transport and other sustainable way of transport like cycling and walking), we must start acting to reduce the climate impact of those sectors. The Climate Act set the target of 80% renewable electricity generation by 2030. This will reduce electricity emissions by 75% from where they are today; therefore, there is an opportunity to meet these targets that should not be missed.

Question 7. Impact Assessments

Can you provide any information (relating to the potential financial, economic, social, rural and equality impacts) which will help inform the completion of the relevant impact assessments on the proposed carbon budgets?

At the UK level, data analysis suggests that if, by 2035, cars only account for a third of all journeys, and all houses currently graded below EPC band C have been upgraded, then about 26% of the total cuts needed to be in line with a net zero trajectory can be achieved.
SNI would like to note that local authorities and public bodies in NI have a very limited level of control over some sectors, such as housing (with the exception of the NIHE) and transport, that could greatly contribute to staying within the carbon budgets and achieving those targets recommended by the CCC. The same abovementioned analysis confirms that local authorities and public bodies have the potential to disproportionately help the UK meet its emissions target; hence this is replicable in NI.
The retrofit challenge, for instance, would help create construction jobs in places that need it most and that have been most impacted by the economic shock and cost of living crisis.

There are important implications for policy when moving away from a reliance on fossil fuels and carbon-intensive industries. Appropriate interventions are necessary, and substantial investment in skills is pivotal to help absorb the economic shock. This includes targeted job support from the government; and in the short to medium term, reskilling and upskilling workers, with a focus on workers whose skills are not immediately transferable, to provide them with the necessary tools to find employment in a greener economy. This will guarantee a just transition.
Local authorities and public bodies can help drive this transition as they have greater potential for doing so, knowing and managing the needs of their areas of control. There is the opportunity for some areas to be carbon negative, offsetting the emissions that cannot be cut elsewhere. For instance, for coastal towns and cities, restoring wetlands and/or offshore areas can remove carbon from the air, all while protecting the area (from extreme weather events and sea level rise) and providing outdoor recreation areas. This has important implications in terms of policy.

Alongside national government intervention, local policymakers have the power to bring about change directly to their local area, through their approach to planning and discouraging car usage, for example. But the lack of powers and resources impedes this intervention. The national government should support them by developing plans and delivering the necessary tools and funding to meet that objective – support local authorities and public bodies to work and take action.

We would like to share information on the potential impacts of key actions that would help stay within the carbon budgets and the milestones associated with them.

1. More powers must be devolved at the local level, and better spatial planning will support achieving greater benefits by integrating transport and housing plans in local decision-making. This links to the following point.
2. Changes to governance structures should be taken into consideration to meet the Net Zero target and the 2030 and 2040 targets.
   This government fragmentation and the current state of devolution of powers mean that local authorities and public bodies often have too few levers to pull. They often lack statutory powers to act. On transport, for instance, they have very low levels of control over the infrastructure, services, and funding for public transport. We would like to also recommend a reform of the planning system since currently it prevents efficient land use outcomes by making it harder, riskier and therefore costlier for developers to identify opportunities in existing built-up areas and on brownfield land. Densifying existing built-up areas, often on land that has not been allocated for development in the local plan, is a lengthy and costly process that requires developers to purchase and assemble small plots of land with no guarantee of planning permission. The result is that in many areas, most new residential development occurs where land is cheaper and land ownership is simpler, creating and exacerbating isolation in rural areas – often 'leapfrogging' green areas into car-dependent estates.
3. Moving away from car dependency and incentivising the take-up of low-carbon solutions is an important step when considering the impacts of actions to reach net zero. SNI strongly believe that nationally driven interventions to phase out petrol and diesel car sales by 2030 will help in this process and should be acted on immediately. This is because there is the risk that most of the remaining carbon budget that can be allocated to car emissions will be used before the ban is in place. We welcome funding for EV charging infrastructure, but more must be allocated to help people become less dependent on cars. Costs should be calculated considering actions like (a) adopting schemes like Clean Air Zones; (b) investing in active travel alternatives; (c) encouraging people to use more public transport by intensifying services; (d) investing in public transport infrastructure to expand the network, and the recent All-Ireland railway strategy is an example and only the beginning of this huge potential.

Questions on CCC Advice Report: The path to a Net Zero Northern Ireland

You can contribute to the dialogue on climate change by providing responses and comments in respect of the following questions. Please supplement your response with any relevant supporting information, evidence and/or analysis.

Northern Ireland Executive Departments would welcome your responses to Questions 8 – 17.

Stretch Ambition

The options proposed under the 'Stretch Ambition' would mean increases in the amount of carbon sequestered in land and engineered greenhouse gas removals. The Stretch Ambition scenario would achieve a 93% reduction against the baseline by 2050.

Question 8. Stretch Ambition Scenario to reach 93% reduction by 2050:

Do you agree that the Northern Ireland Executive should follow the advice provided by the CCC and choose the Stretch Ambition Scenario?

x Yes (please see comments in the box)

x No - please provide your reasons and any suggested alternative.

SNI totally support and agree with the 'shifting the land use sector actions from Balanced Pathway to Tailwinds' scenario.

SNI partially agrees with the Stretch Ambition Scenario since carbon capture and storage (CCS) processes are not the silver bullet to reduce emissions. We strongly believe that it is pivotal to consider the collaborative and collective approach to meet these ambitious targets among national and local governments, along with businesses and communities. The common aim must be increasing some of these targets – for instance, for the transport sector, the second larger emitter in NI, there could be an even more ambitious fall than the 43% recommended by the CCC. Besides the major investment to expand the electric vehicle charging infrastructure advised by the CCC, there is a need to invest in more and better infrastructure for ways of transport alternative to cars and to drastically reduce car dependency in Northern Ireland.

Very important will also be strengthening the electricity networks and implementing renewable sources of energy like wind, solar and geothermal to increase the percentage of emission fall currently advised at 33% from 2020 to 2030 for buildings and 51% for Energy. As highlighted previously, the requirement of the NI Climate Change Act for energy emission reduction is that 80% of electricity must come from renewables by 2030. The commitment to meet this target can reduce electricity emissions by 75% from where they are today; therefore, there is an opportunity to meet these targets without being rushed into expensive technologies for carbon capture that still have not been proven successful and that could cause uncontrolled consequences. For instance, biomethane from the anaerobic digestion of wastes will still produce carbon emissions and might lead to a need for 'uncontrolled waste production' to feed the supply chain. A A study by the Imperial College London, published in One Earth journal in 2022, found that supply chains for biomethane and biogas release up to twice as much methane as the International Energy Agency (IEA)'s previous highest estimation.

Also, BECCS seems like the hope to bury emissions from burning biomass underground. The emissions would only be negative if the plant growth is additional to existing or foreseen plant growth, as the plants would have removed the carbon dioxide anyway. It is important to remember that the BECCS processing chain is energy-intensive and leaks CO2, including indirect and supply chain emissions related to foregone sequestration, biomass production, harvest, transport, refining, capturing and storing (which will happen elsewhere in the UK due to the geology on Northern Ireland).

Speculative Options

Even with the radical actions under the stretch ambition pathway, there is still an emissions gap to Net Zero. The CCC considered some speculative options, including the deployment of direct air capture of CO2 and a further decrease in livestock numbers. Whilst it is up to the Northern Ireland Executive to decide which speculative options to pursue, the CCC's advice on the 2030 and 2040 emissions reduction targets and the first three carbon budgets is based on the Speculative DACCS.

Question 9 (a). The Speculative DACCS Option to reach Net Zero by 2050:

Do you think that the Northern Ireland Executive should choose the Speculative Direct Air Capture with CCS (DACCS) option to reach Net Zero?

❑ Yes

x No - please provide your reasons and any suggested alternative.

This technology is still very controversial and the costs of moving the carbon captured to be stored outside NI should be diverted towards more feasible investments such as infrastructure, transport and renewables.

Carbon capture and storage (CCS) is a 50-year-old technology with variable results in capturing and storing carbon dioxide. The global push for new carbon capture projects as an emissions-reduction solution seems more like a greenwash process and a way to extend the life of fossil fuel assets. A recent study summarised by the Institute for Energy Economics and Financial Analysis showed that seven underperformed of the 13 large-scale CCS projects, one was questionable. Only two projects in the gas processing sector in Norway demonstrated what could be called a success, which was mostly due to the country's unique regulatory environment for oil and gas companies. There is no quick fix without a huge government investment and regulatory frameworks being established, and even then, fossil fuels will still release more emissions than are being captured.

Several considerations must be made before starting to invest in this technology, and Governments must look at interim considerations for CCS projects in the extreme case that no alternative solutions to emissions reduction found.

- Safe storage locations must be identified, and a long-term monitoring plan and compensation mechanism in case of failure must be developed.
- The CCS project must not promote enhanced fossil fuels recovery.
- To avoid project liability being handed over to taxpayers. Large oil and gas companies mainly benefiting from CCS at their gas developments must be liable for any failure/leakage and monitoring costs of CCS projects, specifically if they get subsidies, grants and tax credits for capturing the carbon.
- It must not be used by governments to greenlight or extend the life of any type of fossil fuel asset as a climate solution.

The headline news from a paper published in the energy journal Joule about a DAC project in Canada, stated that the cost of capturing a tonne of CO2 — estimated at around $600 in 2011 — has fallen to between $94 and $232. We want to emphasise that almost any source of renewable energy can prevent a tonne of carbon for cheaper than that.

Direct Air Capture requires large amounts of energy – questionably where this is coming from – and land; indeed, we should not forget that more than 30% of emissions come from land use change. It is expensive and would also cost more to NI since the storage will happen elsewhere. There are risks connected to the transport and injection into geological formations to be stored, and the amount of water used is huge (liquid sorbent uses between 1 and 7 metrics tonnes of water per metric tonne of CO2 captured, and solid sorbent 1.6 metric tonnes of water per metric tonne of CO2 captured).

Question 9 (b). The Speculative Agriculture Option:

Do you think that the Northern Ireland Executive should choose the Speculative Agriculture option?

x Yes

x No - please provide your reasons and any suggested alternative.

The United Nations Environment Programme (UNEP) estimates that achieving a 45% reduction in global methane emissions by 2045 could reduce global warming by 0.3°C. This would help us stay within the target of 1.5°C of warming by 2050.

SNI agree with the speculative agriculture option when the dietary changes with meat and dairy consumptions falling by 47% are considered; when a shift to plant-based diets combined with cultured meat is taken seriously as a huge contributor to reducing emissions; when the investment for a just transition to more sustainable and regenerative agriculture measures are guaranteed; when investments to increase awareness to encourage and facilitate major behavioural shifts in diet across the UK, and not only NI, are provided and applied.

We disagree with the introduction of 'technological and efficiency improvements' as they are called in the advice report, such as the widespread use of feed additives, some to reduce methane emissions and others to promote growth. It is actually the opposite of growth promoters that could facilitate emission reductions, as the Sustainable Food Trust reported. There are potentially better alternatives for reducing methane emissions from ruminants which are not feed additives. 1. Selective breeding for low methane production (Scotland's Rural College's research) could reduce emissions by 17% per generation. 2. Reduction in cow size by 10% could reduce emissions by 8%. 3. Improvement in herd health could reduce total GHG emissions by 10% because of better productivity. 4. Evidence of tannin-containing legumes, such as the birdsfoot trefoil, and some herbs, especially plantain, can drive methane emission reductions. This last point is critical and should not be underestimated since, like in humans, improving animals' diets by adopting controlled and appropriate feeding strategies and not by introducing feed additives to mitigate enteric methane emissions should be considered one of the first mitigation interventions.

Question 9 (c). Other Speculative Options:

Do you think that the Northern Ireland Executive should consider other speculative options such as (1) enhanced rock weathering and (2) addition of biochar to agricultural land?

x Yes

x No - please provide your reasons and any suggested alternative.

SNI agree with the application of enhanced rock weathering and biochar but carefully consider all the risks connected and invite the Department and the Environmental Agency to put in place a strategy of rigorous controls and scientific applications to avoid severe impacts.

We agree with the possibility of using enhanced rock weathering (ERW), but it really depends on the crushed materials applied and on the type of soil where they are applied. This requires severe controls and investments. There are environmental risks often overlooked. For instance, toxic elements in slags from industrial wastes often used for ERW can contaminate soil and food, and the type of soil receiving the ERW can reduce its ability to sequester carbon when nitrogen fertilisers are applied.
So far, there have been applications of ERW, but the majority are for purposes other than capturing CO2, and we cannot ignore that other challenges are involved which, on a large scale, will have negative environmental and ecological impacts (mining, grinding and spreading the rocks). For instance, to powder down the rocks into grains, the energy demand could be 10-30% of the amount of CO2 sequestered unless renewable energy sources are used. (https://www.carbonbrief.org/guest-post-how-enhanced-weathering-could-slow-climate-change-and-boost-crop-yields/)

Biochar could be a good solution since there have been studies showing that it can improve soil porosity, which means better soil aeration, nutrient retention, and water movement within the soil. Many studies have also shown that biochar application can increase soil carbon content, but it is important to consider the feedstock material used, the pyrolysis conditions and application rates and the types of soil where biochar is applied.
Although many positive impacts have been shown, including carbon sequestration, there are still some limitations that must be considered. For example, aged biochar in the soil has harmful effects on the growth of earthworms, which are essential for soil health and its formation, breakdown of organic matter and nutrient cycling in agroecosystems. It can also reduce root and shoot biomass in some plant species. Important to remember that the high sorption capacity of most biochar types can determine the increasing uptake of pesticides and herbicides. The potential beneficial effects of biochar are soil type-dependent and do not apply to all types of soils; therefore, it must be carefully applied to avoid any risk, like the encouragement of pollutants such as polycyclic, aromatic hydrocarbon, dioxins, xylenols, acrolein, formaldehyde, cresols, and other toxic carbonyls, which can affect the bacterial and fungal abundances in the soil, and health hazards during biochar production, transportation and application. (https://www.mdpi.com/2073-4395/11/5/993#:~:text=Biochar%20addition%20to%20the%20soil,and%20activity%20have%20been%20reported.)

Question 10. Agriculture Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should diverge from the CCC sector advice to deliver the required outcomes for the first carbon budget period and that these can be achieved through the actions outlined in the Agriculture sector summary?

❑ Yes

x No - please provide your reasons.

Agriculture is the largest GHG emitter in Northern Ireland, and in order to reach Net Zero, it is essential to think about ways to reduce also the number of residual emissions that will persist in the next few decades, which in NI will most likely come from this sector. SNI is supporting the CCC statement that 'closing the gap to Net Zero in Northern Ireland must therefore fall primarily to some combination of a reduction in agriculture emissions'.

As previously highlighted in question 9, we strongly support the opportunity to encourage the reduction of meat use in favour of a more plant-based diet and recommend investments in increasing awareness of that. We also support research initiatives that see the involvement of DAERA regarding the Ruminant Genetics Programme, along with other more sustainable alternatives previously listed: 1. Selective breeding for low methane production (Scotland's Rural College's research) could reduce emissions by 17% per generation. 2. Reduction in cow size by 10% could reduce emissions by 8%. 3. Improvement in herd health could reduce total GHG emissions by 10% because of better productivity. 4. Evidence of tannin-containing legumes, such as the birdsfoot trefoil, and some herbs, especially plantain, can drive methane emission reductions.

We do not agree with feeding practices suggested by the CCC, such as feed additives to reduce methane emissions, since for an additive to be effective, it needs to be consumed at the same time as the normal diet and for grazing ruminant livestock (the majority in NI) the options are limited. Currently, there are no additives licensed and available for use in the UK, although some farms are trialling them. Also, this will involve an intensification of feedlot farming and grain-based diet for cattle which is unsustainable. The entire production system, and not just the direct emissions from the animal itself, must be taken into consideration to develop an adequate mitigation strategy in this sector, and clearly more intense farming is not the solution.

Question 11: LULUCF Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should follow the LULUCF sector advice provided by the CCC?

x Yes

❑ No - please provide your reasons

We would like to point out that SNI agrees with most of the guidance provided by the CCC. In particular, we strongly support the landscape regeneration of woodlands and peatlands in Northern Ireland in the following years to guarantee adequate carbon sequestration to reach the target of 22% emission reduction by 2030. However, we recommend investing carefully in afforestation plans due to the importance of appropriate analysis of soil and tree species to avoid soil depletion and biodiversity loss. Reforestation should be considered before afforestation. Planting trees in areas that have never been forested, known as afforestation, can release carbon, resulting in a net loss of carbon from the ecosystem. Furthermore, soil is the largest carbon sink and, therefore, the correct management of land and its use to restore and prevent soil degradation should be a priority. Some studies have shown that in the Scottish moorlands, experimental areas planted with native trees actually stored less carbon after several decades than untouched plots covered in heather. There is more carbon below ground than above ground, which means more carbon is stored in soil than in plant biomass, hence restoring peatlands must be the priority. For instance, diverse pastures properly managed with varied plant species would be more effective at storing carbon than new tree plantations. The risk of afforestation is also linked to the disturbance of well-established soil where carbon has been stored for long; planting trees can cause the release of this carbon from the soil, counteracting the net carbon target. Proper land use management should be developed along with livestock management and strategies, where grassfed cattle can actually mitigate (or counter) their higher methane emissions by helping to capture atmospheric carbon dioxide (CO2) through a natural process called carbon sequestration. Pastureland, traditional pastures, no monocultures of rye and areas that are not totally reliant on imported fertilisers and pesticides could have a vital role to play in cutting GHG emissions through capturing and storing atmospheric carbon.

Question 12 (a). Buildings Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should consider the CCC advice on residential buildings, and develop a plan to improve energy efficiency and reduce reliance on fossil fuels, taking account of the capacity and capability of the low-carbon heating sector in Northern Ireland?

x Yes

❑ No - please provide your reasons.

There is a note to one of the recommendations: *"The public sector should lead by example. The advice for the UK as a whole is that by 2025, the installation of high-carbon fossil boilers and by 2030 gas boilers to be phased out in public buildings"*. NI public sector, local authorities and public bodies in particular, must be adequately supported to embrace this journey; therefore, funding currently available for English and Welsh councils and public bodies, for example, should be available across all UK bodies to facilitate this process and guarantee a just transition to Net Zero. The NI Executive should work in partnership with public bodies to manage and provide these opportunities for a greener and more inclusive economy in our region.

Question 12 (b): Buildings Sector Contribution to Net Zero

Do you think that the Northern Ireland Civil Service (NICS) should lead by example in the government estate and phase out the use of fossil fuel boilers as per the CCC advice?

x Yes

❑ No – if not, please provide reasons.

Question 13. Energy Sector Contribution to Net Zero:

Do you think that additional measures (over and above those in the Energy Strategy) should be taken to ensure alignment with the CCC's advice?

x No

❑ Yes – please provide examples of additional measures.

Question 14. Transport Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should follow the transport sector advice provided by the CCC?

x Yes

❑ No - please provide your reasons and any suggested alternative.

We do not fully support a point: "This implies substantial investment to expand the electric vehicle charging infrastructure in Northern Ireland, and major scale-up of plug-in vehicles' share of new car sales from the current 10% to 100% within a decade".

By 2032 all new vehicles sold must be electric. This does not mean that old petrol or diesel cars will not be able to circulate. It would be important to introduce measures to limit the use of these vehicles only for necessary journeys (like the limited emissions areas active in Scotland), encouraging people to ditch their cars and use other more sustainable ways of transport (bus, train, cycle, walk, etc.). To achieve that, the NI Executive must commit to investing in more and better infrastructure and services that can reduce car dependency to almost zero. We would prefer to see fewer cars on the road than more e-charging points, and the "substantial investment" mentioned in the CCC's report should be redirected to more functional infrastructure that could also improve the health and wellbeing of NI people, from better and more secure cycle lanes to more bus and train services.

Question 15. Business and Industrial Processes Sector Contribution to Net Zero:

Do you think that the NI Executive should follow the Business and Industrial Processes sector advice provided by the CCC?

x Yes

❑ No - please provide your reasons and any suggested alternative.

The CCC advice for Business and industrial is set on 3 MtCO2e emitted in 2020 (down 7% since 2010); emissions will need to fall 46% from 2020 to 2030. The industry sector will need to reduce fossil fuel use by 45% by 2030. To achieve this, businesses must accelerate efforts to use energy and resources more efficiently and switch to low-carbon energy, with a focus on the electrification of heat.

In the report is possible to read that the fall in emissions since 1990 comes largely from a fall in buildings emissions in the early 1990s, steady decreases in the energy, business and industrial sectors since 2000, and a decrease in waste management emissions in the last decade. These are slightly offset by an increase in agriculture emissions, which is currently the highest-emitting sector. It is evident that the Business and Industry sector is committed to reducing emissions and that the targets set are achievable. The rate of this reduction must change, suggested at three times the current one by the CCC. Monitoring energy use; reducing energy usage; reducing water usage; rewarding the green commute; reviewing logistics; switching to green energy; reducing and recycling are among some of the key mitigation steps that should be accelerated in the next few years to stay within the first carbon budget.

Question 16. Waste Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should follow the Waste sector advice provided by the CCC?

x Yes

❑ No - please provide your reasons and any suggested alternative.

SNI does not support the advice of investing in Energy from Waste, which will include Carbon Capture and Storage (CCS) technologies, simply because the risk is a rush to produce more waste to feed the process of methane capture from landfill. The energy from waste could be seen as a good opportunity for the transition to low-carbon energy production, but it will still produce carbon emissions.

Landfills are not like a factory that produce nearly all emissions through individual smokestacks. Landfills can span hundreds of acres and leak at various rates from open areas or sections that have temporarily been covered or permanently closed and capped.

Operators have up to five years to start capturing methane from new landfill sections, called cells. But methane pollution begins much sooner than that, based on a study by Professor Morton Barlaz, Head of the Department of Civil, Construction and Environmental Engineering at North Carolina State University. The capacity to collect methane at landfills often depends on gas capture wells and how efficiently the collection system is operating. Landfill operators are required to cover waste disposal areas every night with a thin layer of soil or an alternative such as mulch or even plastic. Some of those materials are more porous than others, resulting in more methane releases. Weather can also play a role. Rain can help produce more methane and flood gas collection systems, making them less effective.
Safely and effectively capturing landfill gas requires money and technical know-how, which means NI must be equipped with the technical and financial resources to begin landfill gas capture projects. The risk of embarking on this type of project is the lack of adequate funding for ongoing maintenance or operations, which could leave landfill gas capture operations defunct or in disrepair and produce even more methane due to the accumulation of waste.

Another point we want to highlight is that the recycling rate should increase, but we strongly support investing in an effective campaign for waste reduction to divert waste from landfill. Emissions from landfill are directly proportional to the amount of waste produced and reaching it.

We agree with the recent U.N. methane assessment, also recommended by the CCC and well-received by DAERA, that calls for ending the practice of sending organic waste, such as food scraps, to landfills. Such waste should instead go to compost facilities or specially designed digesters that reduce or capture methane emissions better.

Question 17. Fisheries Sector Contribution to Net Zero:

Do you think that the Northern Ireland Executive should follow the Fisheries sector advice provided by the CCC?

x Yes

❑ No - please provide your reasons and any suggested alternative.

Data Protection

Information provided by respondents will be held and used for the purposes of the administration of this current exercise and subsequently disposed of in accordance with the provisions of the Data Protection Act 2018 and General Data Protection Regulation.