

## Consultation on:

---

Northern Ireland's 2030 & 2040  
Emissions Reduction Targets &  
First Three Carbon Budgets

&

Seeking views on Climate Change  
Committee (CCC) Advice Report:  
The path to a Net Zero  
Northern Ireland



Northern Ireland  
Executive



---

This document is also available on the DAERA website at:  
<http://www.daera-ni.gov.uk/consultations/carbonbudget>

On request, we can arrange to provide other formats of the documents above, such as:

- **Paper Copy**
- **Large Print**
- **Braille**
- **Other Languages**

To request an alternative format, please contact us:

**Email:** GreenGrowthFeedback@daera-ni.gov.uk

**Telephone:** 028 9056 9708 and talk to one of the Consultation Team.

If you have a hearing difficulty, you can contact the Department via **Text Relay**.

**Dial:** 18001 028 9052 4528

**Post:** Climate Change and Green Growth Policy Division  
2nd Floor, Klondyke Building  
1 Cromac Avenue  
Gasworks Business Park  
Belfast BT7 2JA

Guidance is provided on the 'Confidentiality' of responses under the Freedom of Information Act 2000, in Annex 2 for your reference. Also, **if you require any further information, please contact a member of the consultation team on 028 9056 9708.**

---

---

# Contents

|   |    |
|---|----|
| <b>Executive Summary</b> .....  | 2  |
| <b>1. Introduction &amp; Background</b> .....   | 4  |
| 1.1 Introduction.....   | 5  |
| 1.2 The Climate Change Act (Northern Ireland) 2022 .....  | 6  |
| 1.3 Requirement to Set and Consult on 2030 and 2040 Emissions<br>Reduction Targets & Carbon Budgets .....               | 7  |
| 1.4 Seeking Views on CCC Advice Report: The path to a Net Zero<br>Northern Ireland.....                                 | 8  |
| 1.5 How to Respond.....   | 8  |
| 1.6 Structure of the Document.....  | 9  |
| <b>2. Northern Ireland’s 2030 and 2040 Emissions Reduction<br/>Targets and First Three Carbon Budgets</b> .....         | 10 |
| 2.1 Introduction.....   | 11 |
| 2.2 2030 and 2040 Emissions Reduction Targets and First Three<br>Carbon Budgets.....                                    | 11 |
| 2.3 Your View: Consultation Questions on Proposed 2030 and<br>2040 Emissions Reduction Targets and Carbon Budgets ..... | 19 |
| <b>3. Summary of CCC Advice Report: The Path to a Net Zero<br/>Northern Ireland</b> .....                               | 23 |
| 3.1 Context.....  | 24 |
| 3.2 CCC Recommended Path to a Net Zero Northern Ireland .....   | 25 |
| 3.3 Sector Implications .....   | 28 |
| - Agriculture .....   | 31 |
| - Land Use and Land Use Change, including Forestry (LULUCF) .....   | 34 |
| - Transport .....   | 37 |
| - Buildings.....  | 41 |
| - Energy .....  | 44 |
| - Business & Industrial.....  | 46 |
| - Waste .....   | 49 |
| - Fisheries.....  | 51 |
| 3.4 Your View: Questions on CCC Advice Report: The path to a<br>Net Zero Northern Ireland.....                          | 53 |
| <b>4. Next Steps</b> .....  | 58 |
| <b>Annex 1 Glossary of Terms</b> .....  | 60 |
| <b>Annex 2 Publication of Responses</b> .....   | 64 |

---

## Executive Summary

In March 2022, the Northern Ireland Assembly passed the Climate Change Act (NI) 2022 (the Act), committing the region to an ambitious target of Net Zero emissions by 2050. With Northern Ireland's climate ambition now set in law, the next step is to determine the path to Net Zero including the pace of our actions and associated milestones.

This means setting 2030 and 2040 emissions reduction targets and five yearly 'carbon budgets'. These carbon budgets are legally-binding limits on the total amount of greenhouse gases that can be emitted in Northern Ireland for a five-year period and provide a useful way to benchmark Northern Ireland's progress in meeting climate goals. The Act places duties on Department of Agriculture, Environment and Rural Affairs (DAERA) and all other Departments. DAERA must prepare and publish a Climate Action Plan to meet a carbon budget and set out how the 2030, 2040 and 2050 emissions reduction targets will be met. Individual departments are required to provide DAERA with policies and proposals within their area of responsibility for inclusion in the Climate Action Plan.

The intention was to consult on the carbon budgets and the first draft Climate Action Plan (2023-2027) together. However, developing the Climate Action Plan is complex and involves detailed modelling, analysis and policy development across government departments. Coupled with an extremely difficult budgetary position and the challenges associated with developing, in the absence of ministers, the new policies and programmes that will be required to meet the carbon reduction targets, it will be later this year before the draft Climate Action Plan is completed.

This is a consultation, therefore, on the carbon budgets and targets.

As the Climate Change Committee<sup>1</sup> (CCC) published its Advice Report: The Path to a Net Zero Northern Ireland, we are in a position to carry out a 16 week consultation exercise on the 2030 and 2040 targets and the first three carbon budgets, thus fulfilling the statutory obligation in the Act.

**We want to seek your views on the proposed 2030 and 2040 emissions reduction targets for Northern Ireland; and the proposed carbon budgets for the periods 2023-2027, 2028-2032 and 2033-2037.**

---

<sup>1</sup> The Climate Change Committee is the UK's independent adviser on climate change, and it is responsible for providing expertise and guidance to the UK and devolved governments on emissions targets.

---

This consultation also presents an opportunity to seek views from the public on the CCC Advice report, and considerations of the CCC sector advice by the departments leading on the sectors. The findings from this exercise will allow officials across departments to use the feedback to inform advice to ministers on what would need to be in a credible Climate Action Plan. It is recognised that the success of new policies and proposals to reduce emissions across sectors will be dependent on significant new capital and resource funding, as well as appropriate staff resources, wide-spread behavioural change and political acceptance.

**We wish to use this opportunity to encourage dialogue and facilitate an early and informed discussion on climate action, informed by the CCC advice.**

Working with colleagues across all other departments, DAERA will undertake stakeholder engagement to meet with, receive feedback and hear the opinions of a wide range of stakeholders. This will involve an online survey and facilitating a series of workshops and engagement sessions. These will take place both virtually and in person across Northern Ireland.

We encourage you to participate in this important consultation providing feedback on carbon budgets, targets and the CCC advice to inform Northern Ireland's first Climate Action Plan.

SECTION 1

---

# Introduction & Background

# 1

## 1.1 Introduction

Climate change is a complicated but hugely important issue. It is recognised as one of the most important crises that the world is facing today and, as such, is a priority for many world leaders. The United Nations (UN) defines climate change as the long-term shifts in temperature and average weather patterns across the world. These shifts can be natural but, since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gases called greenhouse gases.

Across the globe, including in Northern Ireland, efforts are now focused on limiting the rise in temperature to 1.5 degrees to help avoid extreme weather like heatwaves, droughts and storms happening more often and becoming more severe.

Northern Ireland's strong focus on climate action in recent years is evident.

A climate emergency was declared by the Northern Ireland Assembly in February 2020. In October 2021, the Department for Agriculture, Environment and Rural Affairs (DAERA), on behalf of the Northern Ireland Executive, published a draft Green Growth Strategy, setting out Northern Ireland's approach to lower greenhouse gas emissions, improve our environment and create green jobs. Recognising that many climate solutions rely on the government creating new laws and making sure they are applied fairly across our society, in March 2022, the Northern Ireland Assembly passed climate change legislation, called the 'Climate Change Act (Northern Ireland) 2022'.

The rest of this section sets out the key elements of the Act, including the requirement to set and consult on targets and carbon budgets, which is the focus of this consultation.

## 1.2 The Climate Change Act (Northern Ireland) 2022

In June 2022, the Act received Royal Assent. It sets emissions reduction targets that Northern Ireland must comply with legally, including achieving Net Zero emissions by 2050.

Other key requirements of the Act include:

- Producing a system of carbon budgeting;
- The setting of 2030 and 2040 emissions reduction targets;
- Producing five-year Climate Action Plans to set out the policies and proposals that Northern Ireland departments will implement to meet a carbon budget;
- Establishing a Just Transition Commission for Northern Ireland and an office for a Northern Ireland Climate Commissioner;
- Setting regulations in regard to climate change reporting duties by public bodies and a Just Transition Fund for Agriculture; and
- Establishing a system of reporting and statements against targets and carbon budgets.

DAERA is responsible for leading on the delivery of many of the requirements of the Act. As all government departments are responsible for ensuring that targets can be met, DAERA is working alongside other departments to deliver the reduction in emissions, and other requirements needed to deliver the legislative requirement to achieve Net Zero emissions by 2050.



## 1.3 Requirement to Set and Consult on 2030 and 2040 Emissions Reduction Targets & Carbon Budgets

**The primary objective of this consultation is to consult on the proposed 2030 and 2040 emissions targets for Northern Ireland and proposed carbon budgets for the periods 2023-2027, 2028-2032 and 2033-2037.**

The Act includes emissions reduction targets for 2030 and 2040 and a requirement for DAERA to consider whether these targets are consistent with the 2050 Net Zero emissions target and to revise them, if required. The current 2030 target is for emissions<sup>2</sup> to be reduced by at least 48% against the baseline<sup>3</sup>, and the current 2040 target is for emissions to be in line with the target for the year 2050.

In addition to meeting the emissions reduction targets, DAERA is required to make new regulations which set a maximum total amount of permitted greenhouse gas emissions in Northern Ireland over five-year budgetary periods. The amount set in a budgetary period is known as the 'carbon budget'<sup>4</sup>. When setting carbon budgets (or setting or amending emissions reduction targets), DAERA is required to seek the advice of the Climate Change Committee (CCC) and take this advice into account before making the associated regulations. The CCC provided this advice on 2 March 2023.

### **What is a carbon budget?**

A carbon budget is the maximum total amount of emissions permitted for a budgetary period. The first budgetary period is 2023-2027 and every five years thereafter.

---

<sup>2</sup> References to specific emissions reductions, in the context of the 2030, 2040 and 2050 Northern Ireland emissions reduction targets and the proposed carbon budgets, mean reductions in the net Northern Ireland emissions account for the target year or carbon budget period. The net Northern Ireland emissions account for a year means the aggregate amount of net emissions of each greenhouse gas in Northern Ireland (which will take into account the emissions of a gas and the removals of a gas through e.g. land use and forestry etc) plus/minus any carbon units debited or credited to the account.

<sup>3</sup> The baseline is the aggregate amount of net Northern Ireland emissions of each greenhouse gas in the year specified in relation to that gas (1990 for Carbon dioxide, Methane and Nitrous oxide; 1995 for Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride).

<sup>4</sup> Sections 23-28 of the Act provide details on the specific requirements around carbon budgets.

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

After the Act passed, DAERA sought advice from the CCC on a path to Net Zero. The subsequent CCC's Advice Report: The Path to a Net Zero Northern Ireland was published on 2 March 2023. We are using this opportunity to seek the public's views on the Advice Report which is designed to illustrate the types of actions to achieve the outcomes that policies must drive to achieve decarbonisation at the pace required. Whilst this is not a formal consultation on CCC advice we do want to encourage dialogue and facilitate an early and informed discussion on climate action. To help inform the discussion, the departments leading on the sectors<sup>5</sup> have set out their considerations, alongside the CCC advice. It is recognised that delivering new policies and proposals to reduce emissions will be dependent on significant capital and resource funding.

The findings from this exercise will inform the Climate Action Plan development and will be used to provide advice to incoming Ministers. The specifics in terms of policies, proposals, actions, and interventions to meet the first carbon budget will be set out in the Climate Action Plan consultation. As per the requirements of the Act, the Climate Action Plan will consider soil quality, air quality and biodiversity, as well as requirements around Just Transition, climate resilience and impact assessments on the policies and proposals.

## 1.5 How to Respond

You are invited to give your views on the following by completing the online survey and/or attending one of the engagement sessions.

1. First three carbon budgets;
2. 2030 and 2040 targets; and
3. CCC Advice Report.

This consultation will run for a 16-week period from 21 June 2023 to 11 October 2023. We encourage early responses, and responses should be submitted no later than 11.59pm on 11 October 2023 to help ensure they can be fully considered.

---

<sup>5</sup> The CCC Advice report provides emission reduction pathways for the sectors specified in the Act. The sectors in the Act are Agriculture, Land Use and Land Use Change, including Forestry (LULUCF), Transport, Buildings, Energy Production and Supply, Business and Industrial Processes, Waste Management and Fisheries.

### **Online Survey**

The online 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, please contact the team by email: [GreenGrowthFeedback@daera-ni.gov.uk](mailto:GreenGrowthFeedback@daera-ni.gov.uk)

### **Engagement sessions/events**

There will be a series of stakeholder engagement events during the carbon budget consultation period. These will take place both online and in person across Northern Ireland.

Details are available on the DAERA website:

<http://www.daera-ni.gov.uk/consultations/carbonbudget> and events will be advertised on social media and in local newspapers.

By responding to this consultation you are agreeing that any information gathered may be shared with other NICS departments.

## **1.6 Structure of the Document**

**Section 2** sets out, for consultation, the proposals for Northern Ireland's 2030 and 2040 emissions reduction targets and the first three carbon budgets.

**Section 3** summarises the CCC's Advice Report: The path to a Net Zero Northern Ireland. It also includes considerations by the departments leading on the sectors on the CCC sector advice.

**Section 4** sets out the next steps following completion of this engagement exercise.

# **Northern Ireland's 2030 and 2040 Emissions Reduction Targets and First Three Carbon Budgets**

# 2

## 2.1 Introduction

This section includes the proposals for Northern Ireland's 2030 and 2040 emissions reduction targets, and first three carbon budgets. These are based on advice from the CCC. We are keen to get your views on these targets and carbon budgets. Your feedback will be used to inform the development of carbon budget regulations as required under the Act.

## 2.2 2030 and 2040 Emissions Reduction Targets and First Three Carbon Budgets

### 2.2.1 2030 and 2040 Emissions Reduction Targets

The Act requires DAERA to consider whether the current 2030 and 2040 emissions reduction targets are consistent with meeting the 2050 Net Zero emissions target and to set targets for the years 2030 and 2040 that are in line with the 2050 target. This is required to be completed by June 2024.

The CCC provided advice to DAERA on 2 March 2023<sup>6</sup> on what it considers to be appropriate emissions reduction targets for 2030 and 2040. Figure 1 sets out this advice.

#### Figure 1: CCC Advice on the 2030 and 2040 Emissions Reduction Targets

The advice from the CCC published in March 2023 recommends that targets consistent with the 2050 Net Zero target would be:

- A 48% emissions reduction\* by 2030 (2030 target) against the baseline\*\* - the current target in the Act; and
- A 77% emissions reduction by 2040 (2040 target) against the baseline

The CCC has recommended these targets on the basis of its Path to a Net Zero for Northern Ireland analysis undertaken to highlight how Northern Ireland might reach the 2050 Net Zero target in the Act. The recommended targets are therefore considered by the CCC to be consistent with the 2050 Net Zero target.

Note: \* These targets would be expressed in the same form as the current targets in the Act, i.e. the net Northern Ireland emissions account should be at least 48% lower than the baseline in 2030 and at least 77% lower than the baseline in 2040.

\*\*The baseline is the aggregate amount of net Northern Ireland emissions of each greenhouse gas in the year specified in relation to that gas (1990 for Carbon dioxide, Methane and Nitrous oxide; 1995 for Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride).

<sup>6</sup> Advice report: The path to a Net Zero Northern Ireland - Climate Change Committee  
<https://www.theccc.org.uk/publication/advice-report-the-path-to-a-net-zero-northern-ireland/>

DAERA, under section 54 of the Act, can only make regulations that set or amend targets if certain conditions have been met. One of these conditions is that the target has been recommended by the CCC or that the proposed target is at a level that is not substantially different from what the CCC has recommended.

Section 4 of the Act already requires all Northern Ireland departments to ensure that emissions in 2030 are at least 48% lower than the baseline. The CCC recommended that this target remains.

DAERA is proposing to follow this recommendation and retain the current 2030 emissions reduction target in the Act. If, following this consultation, DAERA accepts the CCC advice and retains the current 2030 emissions reduction target as set by the Northern Ireland Assembly, then it will require a statement to be laid before the Assembly to explain why the current target should remain and does not need to be amended.

DAERA is also proposing to follow the recommendations of the CCC and set the 2040 target in line with that expert advice. This will require regulations to be made which will amend section 3 of the Act to place a requirement on all Northern Ireland departments to ensure that the emissions in 2040 are at least 77% lower than the baseline. While an updated target is not required to be set until June 2024, consulting on the proposed 2040 emissions reduction target provides advance notice for the public and Northern Ireland departments on the target that they are likely to be working towards.

## **2.2.2 Carbon Budgets**

### **What is a carbon budget?**

A carbon budget provides a limit on the maximum total amount of greenhouse gas emissions which should not be exceeded for a defined budgetary period, in order to help meet overall and longer-term emissions reduction commitments. Carbon budgets will, therefore, be set at a Northern Ireland level rather than a sectoral level. However, it is the cumulative impact of reductions in emissions across each sector which will enable a carbon budget to be met. The Act requires that carbon budgets cover a five-year budgetary period. This can be expressed as a total figure, or as an average annual percentage reduction within the relevant five-year period.

All Northern Ireland departments are required under the Act to ensure that a carbon budget is achieved. The delivery vehicle for achieving carbon budgets will be through the development and implementation of Climate Action Plans.

## **Carbon budget periods**

The first Northern Ireland budgetary period is 2023-2027 with subsequent periods covering every five years thereafter. The first three carbon budgets for Northern Ireland (2023-2027, 2028-2032 and 2033-2037) must be set by the end of December 2023 and each subsequent carbon budget must be set a minimum of 12 years in advance of the budgetary period commencing.

DAERA is required to set the carbon budget for the budgetary periods 2023-2027 and 2028-2032 at a level that it is satisfied is consistent with meeting the emissions targets for 2030, 2040 and 2050, and to set the carbon budget for the budgetary period 2033-2037 at a level that it is satisfied is consistent with meeting the emissions targets for 2040 and 2050.

## **Setting Carbon Budgets**

### **Advice from the CCC**

When setting carbon budgets, DAERA is required to seek the advice of the CCC and take this advice into account before making the associated regulations. When providing advice on carbon budgets, the CCC must have regard to:

- United Kingdom and international law or policy relating to climate change;
- Scientific knowledge about climate change; and
- Technology relevant to climate change.

If DAERA decides to make regulations to set carbon budgets that differ from the advice and recommendations of the CCC then, as required by the Act, it must lay a statement in the Assembly setting out the reasons for the difference. Figure 2 sets out the CCC's advice on the first three carbon budgets for Northern Ireland.

## Figure 2: CCC Advice on the First Three Carbon Budgets for Northern Ireland

The CCC, in its advice to Northern Ireland in March 2023, recommended that, in order to keep emissions consistent with the 2050 Net Zero target, the first three carbon budgets should be set as follows:

- The first carbon budget to be set at a level that has a 33% average annual reduction\*;
- The second carbon budget to be set at a level that has a 48% average annual reduction; and
- The third carbon budget to be set at a level that has a 62% average annual reduction

\*Note: these average annual reduction recommendations relate to reductions in the net Northern Ireland emissions account across the period compared to the baseline.

In the advice provided on the recommended carbon budgets for Northern Ireland, the CCC has indicated that its analysis is based on the latest available data (2020). Greenhouse gas emissions in 2020 were, however, affected in some sectors by largely short-term effects from the COVID-19 pandemic. The CCC's advice acknowledged that data for Northern Ireland's emissions in 2021, when published, would give a better indication of the feasibility of the decarbonisation required for meeting its advised first carbon budget and that a slightly less ambitious first carbon budget may be appropriate to account for a slower start in the first two years of the carbon budget period. The CCC has indicated that, as a result of this data, it may be possible that a slightly less ambitious first carbon budget may be appropriate to account for a slower start in the first two years of the carbon budget period. However, decarbonisation rates towards the end of the first carbon budget would need to be in line with the CCC recommended pathway if Northern Ireland is to be on track to meet the 2030 target and the ultimate target of Net Zero emissions by 2050.

Northern Ireland Greenhouse Gas Inventory for 1990-2021 has just been published and DAERA will engage with the CCC to discuss the potential implications of this data in respect of the first carbon budget. Therefore, there is the potential for further advice from the CCC which incorporates a slightly different recommendation in respect of the first carbon budget for Northern Ireland. DAERA will consider such advice, if received, and the intention would remain to set the carbon budgets in line with the most up-to-date advice and recommendations from the CCC. As any potential further advice from the CCC on this matter is unlikely to be received until autumn 2023, we still believe it is appropriate to consult on the carbon budgets and targets now in order to help meet the statutory requirement to set the carbon budgets by the end of 2023.



## Relevant advice from other bodies

DAERA is also required to give due regard to the expertise and advice of:

- The Intergovernmental Panel on Climate Change (IPCC); and
- The Republic of Ireland Climate Change Advisory Council (CCAC).

While this does not require DAERA to formally seek the advice of these bodies, it helps to ensure that cross border and global developments and analysis are considered when making decisions regarding the appropriate carbon budgets for Northern Ireland.

DAERA has reviewed key publications issued by both bodies as part of its analysis and development work in relation to the proposed carbon budgets. There are consistent themes in terms of the key advice provided by the CCC, the IPCC and CCAC. The recommendations of the CCC and the CCAC are consistent with IPCC projected emission levels<sup>7</sup> globally if warming is to be limited to 1.5°C.

The CCAC has provided a range of advice on matters connected with climate change including advice on the first three carbon budgets for Ireland. The first carbon budget programme proposed by the CCAC was approved by Government and adopted by both Houses of the Oireachtas in April 2022. It comprises three successive five-year carbon budgets covering the periods 2021-2025, 2026-2030 and 2031-2035. Ireland has also committed to a 51% reduction in its greenhouse gas emissions by 2030, relative to its 2018 levels.

The CCC and the CCAC have both stressed the importance of immediate action and investment in order to deliver the accelerated reductions which are required to meet the 2030 targets in both jurisdictions and have provided recommendations on the level of reductions required and the type of action needed to deliver these within key sectors. While there are differences in terms of starting points and carbon budget periods in Northern Ireland and Ireland, there is some consistency in terms of the 2030 targets in both jurisdictions and the scale of emissions reductions recommended across the carbon budget periods leading up to the mid-2030s. This is to be expected given that the CCC and the CCAC take account of the latest global analysis, developments and publications when developing and providing advice to the relevant authorities in the UK and Ireland and therefore their analysis and recommendations align with the assessments of the IPCC.

---

<sup>7</sup> In its latest AR6 Synthesis Report - Climate Change 2023 (AR6 Synthesis Report: Climate Change 2023 (ipcc.ch)), the IPCC stated that emissions should be decreasing by now and will need to be cut by almost half by 2030, if warming is to be limited to 1.5°C.

### 2.2.3 Potential impacts of proposed carbon budgets

Section 26 of the Act requires DAERA to take account of other specific factors when setting carbon budgets. The advice received from the CCC provided in March 2023 takes into account a number of these factors. These include requirements around law and policy, scientific knowledge and technology relevant to climate change as well as other factors relating to, for example, energy and agricultural policy. In addition, the completion of impact assessments helps ensure further consideration of the other relevant factors.

Several impact assessments are required in respect of the proposed carbon budgets. Some assessments have been provisionally completed while others are still underway and DAERA is seeking views from consultees which will help to complete these assessments. The current position is as follows:

- A **Regulatory Impact Assessment (RIA)** is in the process of being completed to assess the costs and benefits of the proposed carbon budgets. This assessment will cover certain elements of the requirements in section 26, in particular those concerned with economic and fiscal circumstances.
- As required by the Rural Needs Act (Northern Ireland) 2016, a **Rural Needs Impact Assessment (RNIA)** has been completed which covers elements of the requirements in section 26, such as the impact on rural communities. This assessment indicates that there will potentially be a range of impacts on rural communities from actions to meet the carbon budgets and achieve the targets. Rural communities will share the broad positive impacts that reducing greenhouse gases will deliver and may face different impacts from people in urban areas in relation to actions taken forward in specific sectors. However, the actual impacts can only be determined through assessments carried out on the specific policies taken forward which will be progressed as part of the process of developing a Climate Action Plan.
- An initial screening exercise has been carried out to determine **the equality impacts** of the carbon budgets as required by section 75 of the Northern Ireland Act 1998. This assessment indicates that there will potentially be impacts on the section 75 groups from actions to meet the carbon budgets and achieve the targets. However, the setting of a carbon budget or target does not in itself commit Northern Ireland to specific actions or pathways and the actual impacts can only be determined through assessments carried out on the specific policies taken forward which will be progressed as part of the process of developing Climate Action Plans.

- Section 23 of the Act also requires DAERA to commission a **financial, social, economic and rural impact assessment** on the effects of the carbon budgets. To some degree this overlaps with the requirements of general policy development including the completion of equality screening and the drafting of a RIA and a RNIA. DAERA has also worked with consultants to develop a template to record the potential financial, social, and economic impacts and these assessments will be completed alongside the RIA.

#### 2.2.4 Previous impact assessments to be considered

DAERA has previously received advice specific to Northern Ireland from the CCC on the impacts of the 2050 Net Zero emissions target, (letter 1, letter 2 and letter 3). This advice helps in meeting some of the section 26 requirements, as it identifies the potential costs involved in transitioning to meet challenging emissions reduction targets, including the potential costs of utilising engineered greenhouse gas removals to help meet the 2050 Net Zero emissions target. A Regulatory Impact Assessment was also completed as part of the process of progressing the Act, largely based on this advice from the CCC. It estimated that the potential net costs of meeting Net Zero in Northern Ireland could be in the region of £466 million per annum although the actual costs are difficult to determine as they will depend on the pathways taken and the actions implemented.

Under the Climate Change Act 2008, the UK Government has set three five - yearly carbon budgets that cover the same period as the carbon budgets for Northern Ireland that are being consulted upon. Regulatory impact assessments were produced to accompany the legislation which set these carbon budgets and some of the impacts identified will apply to Northern Ireland on a proportional basis:

- Regulatory Impact Assessment covering UK carbon budget 2023-2027
- Regulatory Impact Assessment covering UK carbon budget 2028-2032
- Regulatory Impact Assessment covering UK carbon budget 2033-2037

There are, therefore, existing high-level assessments which can help to determine the potential impacts of meeting the proposed carbon budgets and work will be undertaken to further assess these impacts. As the carbon budgets do not set out the policies and proposals which will be taken forward to reduce Northern Ireland emissions, any assessment of impacts can only be at a high level with more specific analysis required as part of the development of the corresponding Climate Action Plans.

Whilst the CCC advice recommends potential pathways and actions that could meet carbon budgets and emissions reduction targets, ultimately it will be for the Northern Ireland Executive to decide on which policies, proposals and actions to include in the Climate Action Plan to reduce greenhouse gas emissions. Each Climate Action Plan will be accompanied by the relevant impact assessments and will provide more detail on the expected impacts of the policies and proposals identified.

### **2.2.5 Consultation requirements in respect of proposed carbon budgets**

The Act requires that a 16-week consultation is carried out on the proposed carbon budgets. The Act also requires DAERA to consult with the Just Transition Commission and the Northern Ireland Climate Commissioner in respect of proposed carbon budgets, both of which are required to be established under the Act. As these bodies have yet to be established, pre-consultation on the first three carbon budgets is not possible. Once they are established there will be engagement with these bodies in respect of the actions that are being taken forward to help deliver the carbon budgets.

Section 50 of the Act requires the Executive Office (TEO) to lay regulations in the Assembly to establish a Northern Ireland Climate Commissioner by June 2024. Section 37 of the Act requires DAERA to establish a Just Transition Commission although the Act does not stipulate a timeframe for this. Work is currently being taken forward by TEO and DAERA to establish both independent bodies and proposals will be consulted on. Once established the Northern Ireland Climate Commissioner and the Just Transition Commission will be consulted with when DAERA comes to prepare and set Northern Ireland's fourth carbon budget in 2025.

## 2.3 Your View: Consultation Questions on Proposed 2030 and 2040 Emissions Reduction Targets and Carbon Budgets

Summary of proposed 2030 and 2040 emissions reduction targets and carbon budgets on which we are seeking your views.

| Target / Budget           | Statutory deadline (for setting) | Proposal*   |
|---------------------------|----------------------------------|---|
| 2030 target               | By 6 June 2024                   | A <b>48%</b> emissions reduction by 2030 against the baseline (current Act target).*                    |
| 2040 target               | By 6 June 2024                   | Set a <b>77%</b> emissions reduction by 2040 against the baseline.*                                     |
| Carbon budget 1 2023-2027 | By 31 December 2023              | Carbon budget to be set at a level that has a <b>33%</b> average annual reduction compared to baseline. |
| Carbon budget 2 2028-2032 | By 31 December 2023              | Carbon budget to be set at a level that has a <b>48%</b> average annual reduction compared to baseline. |
| Carbon budget 3 2033-2037 | By 31 December 2023              | Carbon budget to be set at a level that has a <b>62%</b> average annual reduction compared to baseline. |

\*Note that these targets would be expressed in the same form as the current targets in the Act, i.e., the net Northern Ireland emissions account should be at least 48% lower than the baseline in 2030 and at least 77% lower than the baseline in 2040, while for the carbon budgets, the recommended average annual reductions relate to reductions in the net Northern Ireland emissions account across the period compared to the baseline.

**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. You can access the online survey [here](#).**

**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 an at least 48% reduction in emissions compared to the baseline?

- 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).

**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 an at least 77% reduction in emissions compared to the baseline?

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

**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?

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

**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?

- 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?

- 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 Greenhouse Gas Inventory) when setting the first three carbon budgets?

- Yes
- No - please provide your reasons.

**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?



SECTION 3

---

# Summary of CCC Advice Report: The Path to a Net Zero Northern Ireland

# 3

## 3.1 Context

This section summarises the CCC's Advice Report: The path to a Net Zero Northern Ireland, including the near-term implications for sectors.

**The consultation is being used as an opportunity to facilitate an early and informed discussion on climate action.** To help inform the dialogue, the departments leading on the sectors have set out their considerations, alongside the CCC advice. **Your feedback will be used to inform the development of the specific policies and proposals and other requirements for inclusion in the future Climate Action Plan consultation.**

The CCC's Balanced Pathway for the UK in its Sixth Carbon Budget<sup>8</sup> (in 2020) recommended an 82% reduction in greenhouse gas emissions by 2050 for Northern Ireland - to be compatible with the UK wide 2050 Net Zero goal. It was viewed as an appropriate contribution to the UK's Net Zero 2050 target, given the size of the farming sector in Northern Ireland and its significant role in supplying the GB market. There was also an earlier report for Northern Ireland published by the CCC in 2019<sup>9</sup> which set out the Committee's advice on how Northern Ireland could reduce greenhouse gas emissions between 2019 and 2030.

In 2022, the legislated target of Net Zero by 2050 in Northern Ireland went beyond the CCC's Sixth Carbon Budget advice. Subsequently, the CCC set out how Northern Ireland's new legislated Net Zero target could be met in Advice Report: The Path to a Net Zero Northern Ireland. The CCC is clear on the scale of the challenge Northern Ireland faces and the immediate action required to achieve these stretching legal targets.

As set out in the previous section, the report recommends 2030 and 2040 emissions reduction targets and levels for the first three carbon budgets. It also provides examples of the new policies the Northern Ireland Executive should put in place and highlights the actions and outcomes such policies would need to drive to achieve these targets.

The rest of this section summarises the CCC recommended path to Net Zero and the policy changes by sector set out in the Advice Report: The Path to a Net Zero Northern Ireland.

---

<sup>8</sup> The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf (theccc.org.uk)

<sup>9</sup> <https://www.theccc.org.uk/publication/reducing-emissions-in-northern-ireland/>

## 3.2 CCC Recommended Path to a Net Zero Northern Ireland

### 3.2.1 Introduction

The CCC advice is unequivocal - a step change in decarbonisation action must begin immediately in Northern Ireland and the pace must greatly exceed what has been delivered to date. Northern Ireland must reduce emissions by around 35% within the next decade, compared to an average of 9% per decade since 1990. The CCC's report sets out how best Northern Ireland can achieve its emissions reduction targets. The CCC advice is modelled based on a series of pathways. This includes an updated Balanced Pathway, supplemented with a 'Stretch Ambition' scenario and two 'Speculative' options. The CCC recognises delivering these will be highly challenging for Northern Ireland. **It is also recognised that it is up to the Northern Ireland Executive, in consultation with stakeholders, to agree on the most appropriate measures for the region.**

These pathways are summarised below.

### 3.2.2 Updated Balanced Pathway

The CCC updated its 2020 Balanced Pathway, which forms the basis of the recommended path to Net Zero. The updated Balanced Pathway reaches an 83% reduction in Northern Ireland's emissions compared to the baseline by 2050. This updated Balanced Pathway is already very ambitious, with most sectors decarbonising almost completely by 2050. A summary of changes identified under the updated Balanced Pathway are outlined in Figure 3. The advice assumes all these changes would be implemented as a minimum.

#### **Figure 3: The CCC's updated Balanced Pathway for Northern Ireland requires:**

- Decarbonising electricity generation whilst meeting rising demand;
- New car and van sales to be zero-emissions in the first half of the 2030s;
- All new heating appliances to be zero-carbon by 2033, and by 2030 for properties off the gas grid, with a substantial improvement in the energy efficiency of buildings;
- A reduction in livestock numbers of almost a third and the widespread adoption of low-carbon farming practices; and
- Significant increase in peatland restoration and afforestation

Source: Advice Report: The Path to a Net Zero Northern Ireland

### 3.2.3 Closing the Gap to Net Zero: Stretch Ambition & Speculative Options

Once most of the sectors have reached actual zero emissions, there are limited options to close the gap from the updated Balanced Pathway (83%) to Net Zero. Most of the remaining emissions in 2050 in the updated Balanced Pathway come from the agriculture and land use sectors. The CCC advice to bridge the gap therefore highlights the need for higher levels of ambition on land use, as well as engineered removals.

#### Engineered removals

Engineered greenhouse gas removals is the process of capturing carbon dioxide directly from the atmosphere and storing it. It can be used alongside nature-based solutions such as tree planting. Engineered removals are required to offset the emissions arising from sectors where it is difficult to totally eliminate emissions.

The options proposed under the 'Stretch Ambition' would mean increases in the amount of carbon sequestered in land and engineered greenhouse gas removals. A summary of options under the Stretch Ambition scenario are summarised in Figure 4.

#### Figure 4: The CCC's Stretch Ambition Pathway for Northern Ireland requires:

- Increasing annual afforestation rates to reach 3,100 hectares by 2035 and 4,100 hectares from 2039 until 2050. The CCC states that this would require land to be made available which would mean reducing cattle and sheep numbers by around 18% by 2030 (as per Balanced Pathway); and
- Inclusion of engineered removals from both solid biomass grown in Northern Ireland and anaerobic digestion of wastes used to produce biomethane, together with CO<sub>2</sub> capture and transportation (e.g. shipping) to storage elsewhere. The CCC highlights the significant investment and infrastructure implications of this option, as there are no storage locations locally. This would mean CO<sub>2</sub> would need to be transported to alternative storage sites as Northern Ireland is not geologically suitable.

Even with these interventions there is still an emissions gap. The Stretch Ambition scenario would achieve a 93% reduction against the baseline by 2050, with 1.8 MtCO<sub>2</sub>e of emissions remaining. To address the remaining shortfall, the CCC has added two '**Speculative**' options, as summarised in Figure 5 below.

### Figure 5: The CCC's Speculative Options for Northern Ireland requires:

Of a longer list considered, the CCC is currently only able to quantify the emissions reduction potential of two options:

- **Speculative Direct Air Capture with Carbon Capture and Storage (DACCS)** - direct air capture differs from other carbon capture methods because it captures CO<sub>2</sub> from the air rather than at source. The CCC's advice is that this option could be implemented in Northern Ireland, but any captured CO<sub>2</sub> would need to be transported to a storage facility outside of Northern Ireland. This option, therefore, is likely to be difficult to deliver and expected to be expensive. The estimated cost in Northern Ireland could be in the region of £190-£200/tCO<sub>2</sub><sup>10</sup>; and
- **Speculative Agriculture** - this option would mean increasing agriculture to the most ambitious (Tailwinds) scenario. Pursuing this option would require almost halving livestock numbers by 2050, significant technology and efficiency improvements in the sector, and major dietary changes across the UK resulting in meat and dairy consumption falling by 47%. The CCC recognises this option would have potentially significant economic and social implications for the agriculture sector and would require reductions in methane emissions beyond the level envisaged in the Act.

The CCC proposes other ideas such as enhanced weathering on croplands and the addition of biochar to agricultural land but are currently unable to quantify the emissions reduction potential of these.

As shown in Figure 6, only the DACCS option is enough on its own to reach Net Zero by 2050. The Speculative Agriculture option would need to be supplemented, potentially with additional removals to reach Net Zero but less than that in its Speculative DACCS option. The CCC's advice on the 2030 and 2040 emissions reduction targets and the first three carbon budgets, set out in Section 2, is, therefore, based on Speculative DACCS<sup>11</sup>. However, the CCC is clear that this does not constitute a recommendation that DACCS is used at this scale; this is one of several options available to Northern Ireland.

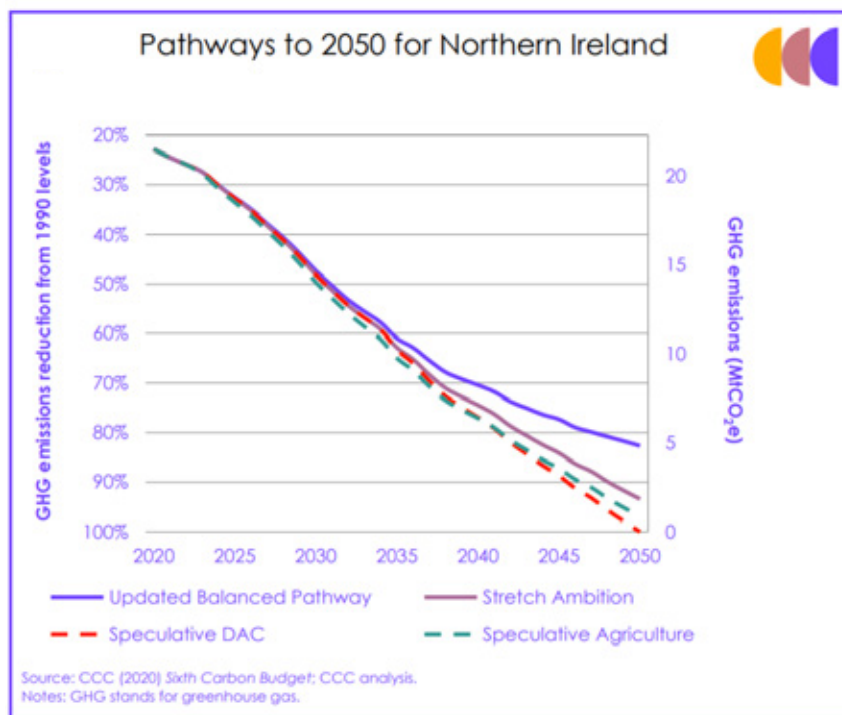
<sup>10</sup> Advice Report: The Path to a Net Zero Northern Ireland

<sup>11</sup> This option would require a 41% cut in methane emissions, so is compatible with the Act's requirement that reaching Net Zero in Northern Ireland does not reduce methane emissions by more than 46% on 1990 levels by 2050.

### CCC path to net zero

|                          |      |
|--------------------------|------|
| Updated Balanced Pathway | 83%  |
| Stretch Ambition         | 93%  |
| Speculative DACCS        | 100% |

**Figure 6: CCC Pathways to 2050 in Northern Ireland**



Source: Advice Report: The Path to a Net Zero Northern Ireland

## 3.3 Sector Implications

### 3.3.1 Overview

The CCC's path to Net Zero in Northern Ireland analysis has been developed through detailed sectoral modelling. In its advice, the CCC provided emissions pathways for each of the sectors specified in the Act.

## Definition of Sectors in the Greenhouse Gas Inventory

**Agriculture** - Includes emissions from livestock, agricultural soils, stationary combustion, and off-road machinery. Emissions are affected by the number of livestock, the quantity of fertiliser applied to land, and the intensity of activity.

**Land Use and Land Use Change, including Forestry (LULUCF)** -

This covers sinks and sources of emissions from land use, land use change and forestry. Sinks remove greenhouse gas emissions from the atmosphere whilst sources emit greenhouse gas. Emissions are affected by deforestation rates and land management.

**Transport** - Includes road transport, domestic shipping and aviation, and aircraft support vehicles. Road transport is the most significant source, therefore, emissions are affected by vehicle efficiency, distance travelled and number of vehicles. (excludes emissions due to fishing).

**Buildings - Public** - Includes emissions from fuel combustion in public sector buildings (e.g., public administration, defence, education and health and social work). Emissions are predominantly affected by fuel type; and

Residential - Includes fuel combustion for heating, cooking, garden machinery, gases released from aerosols and inhalers, and emissions released from the breakdown of products such as detergents. Emissions are affected by energy efficiency, heating and hot water demands, and the fuel type for domestic combustion.

**Business & Industrial** - Includes emissions from stationary combustion in the industrial and commercial sectors, industrial off-road machinery, and refrigeration and air conditioning. Includes all emissions from industry except fuel combustion and therefore includes chemical and metal production, and mineral products (e.g. cement and lime). Emissions are significantly affected by abatement technology.

**Energy** - Emissions are predominantly from power stations but also coal mining, oil refineries and other fuel production. Emissions are significantly affected by abatement technology at power stations and the type of fuel being produced or combusted.

**Waste Management** – Emissions include those from waste disposed at landfills, wastewater treatment, and waste incineration. Emissions are affected by regulation of landfills and the proportion of waste that is recycled.

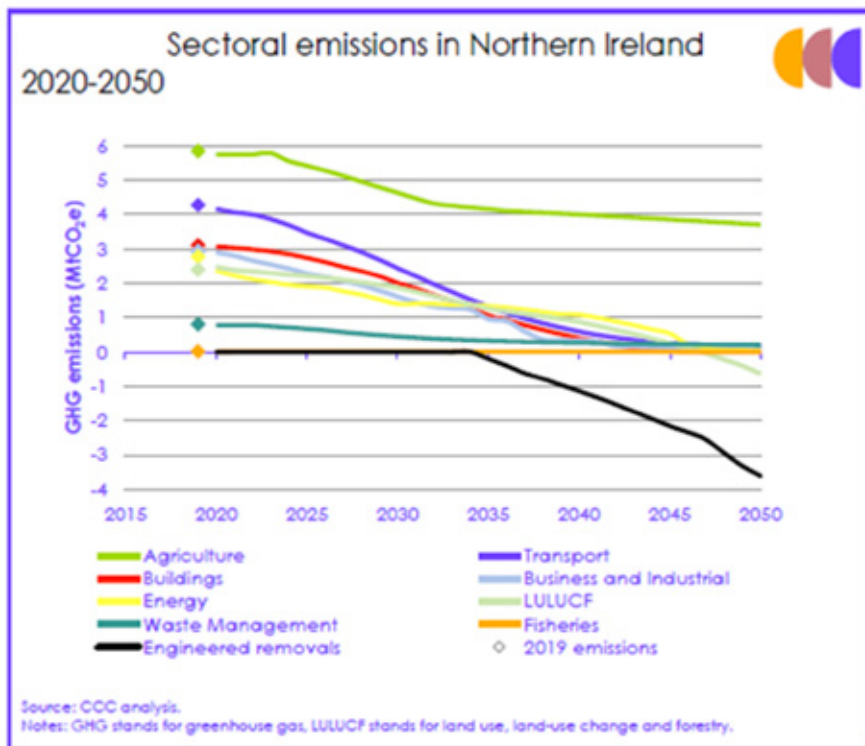
**Fisheries** - This covers emissions from the fishing sector relating to fishing vessels.

Source: Northern Ireland Greenhouse Gas Statistics 1990-2020

<sup>12</sup> The Greenhouse Gas Inventory measures emissions on a territorial production basis. It counts the emissions and removals which happen within Northern Ireland such as the production and use of heat, electricity and other fuels, as well the livestock and land emissions occurring here. It does not count the emissions from the manufacture of products which are imported for consumption in Northern Ireland (eg the production of steel elsewhere for use in NI or the emissions associated with food imported into Northern Ireland). These are accounted for the inventories of other nations and regions.

Figure 7 shows the CCC sectoral emission pathways from 2020 to 2050. It shows immediate changes must be made across all areas to achieve the Carbon Budget 2023-2027 and subsequent targets. Departments are clear that the success of any new policies and proposals to decarbonise the sectors will be dependent on major new capital and resource funding to plan and deliver the commitments, as well as appropriate staff resources, behavioural change and political acceptance.

**Figure 7: CCC’s Sectoral Emission Pathways in Northern Ireland, 2020 to 2050**



Source: Advice Report: The Path to a Net Zero Northern Ireland.

A summary of the CCC advice by sector is provided. The summary includes current sector emissions and targets for 2030 and 2050 against the 1990 baseline; CCC advice on the main policy changes and near-term actions required; and the deployment rates<sup>13</sup> assumed in the analysis. For each sector, there is also a section with observations from the lead department/s on the measures proposed by the CCC.



## Agriculture

### CCC ADVICE - AGRICULTURE SECTOR PATHWAY

| Agriculture Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|-----------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                       | GHGs               | 5.5                          | 5.9                          | 4.6                          | 3.7                          |
|                       | % change from 1990 |                              | +6%                          | -16%                         | -33%                         |

#### CCC Advice: Summary

##### Summary

- Reductions in methane emissions are given special protections in the new legislation, but major reductions in emissions from agriculture are still necessary.
- In the CCC Pathway emissions reductions are to be achieved by:
  - Improved farm productivity;
  - Widespread adoption of low-carbon farming practices; and
  - Lower livestock numbers with associated agricultural land transitioning to bioenergy cropping and forestry

##### Near Term Actions in Pathway

- Agriculture emissions need to fall 21% from 2020 to 2030.
- Widespread adoption of new and improved breeding, feeding and management practices to reduce greenhouse gas (methane and nitrous oxide) emissions.
- Reduction in livestock numbers: by 2030, 22% reduction in dairy cattle, 17% reduction in beef cattle and 18% reduction in sheep, pigs and poultry numbers

| Assumed CCC Advice Deployment Rates |  | 2030 | 2040 | 2050 |
|-------------------------------------|--|------|------|------|
|                                     | Emission reductions from low-carbon agricultural measures (MtCO <sub>2</sub> e/year) | 0.5  | 0.6  | 0.5  |
|                                     | Livestock numbers (million)  | 24   | 22   | 21   |

**Lead department on Agriculture: Department of Agriculture, Environment and Rural Affairs (DAERA)**

**Considerations on CCC Recommended Agriculture Sector Pathway**

- DAERA's current consideration of the CCC Pathway for agriculture is within the context of the policies and proposals contained within the Ministerial decisions on Future Agricultural Policy announced in March 2022 aimed at delivering an agricultural industry with improved productivity, improved resilience, improved environmental sustainability and an effective functioning supply chain. Clearly this includes also a focus on reducing carbon.
- The CCC Pathway assumes a significant reduction in livestock numbers and an associated transition to significant bioenergy cropping and increased forestry on agricultural land. The reduction in livestock numbers is based on the assumption that the consumption of livestock products in the UK will fall and that this will lead to an equal reduction in Northern Ireland livestock numbers.
- DAERA is conscious of the nature of the Northern Ireland agricultural sector, with very significant markets for livestock products outside the UK. The Department's assessment, based on the scenario modelling that has been undertaken by ADAS, is that the policies and proposals within the Future Agricultural Policy Programme can deliver in line with the emissions reductions in the CCC advice pathway for the agriculture sector, over 2023-2027.
- The agriculture emission reductions in the first carbon budget will, therefore, be achieved without reductions in the numbers of breeding animals but with a focus on reducing the number of older, non-breeding animals on farm through improvements in animal productivity. Land released as a result of the reduction in numbers of older, non-breeding animals will be available for alternative land use activities.
- In order to support an increase in livestock productivity and reduce greenhouse gas emissions, DAERA is developing a Beef Sustainability Package aimed at farms which finish beef cattle and/or have suckler/beef cows.
- New innovations in nutrition for livestock have the potential to play a key role to reduce greenhouse gas emissions and improve other environmental considerations (nitrogen and phosphorus losses). As a first-step, a new research funding programme is under development by DAERA to challenge the agricultural supply industry to lead collaborative research and innovation in nutrition. Guided by this work, DAERA considers there is potential to increase the uptake of new innovations beyond that assumed in the Pathway.

- As identified in the CCC Pathway, developments in cattle breeding have the potential to sustainably increase the rate of improvements in productivity and directly reduce levels of methane emitted by cattle. A Ruminant Genetics Programme being developed by DAERA in partnership with the agri-food sector will provide genetic and performance data to help farmers identify and breed from the most productive and environmentally sustainable (i.e. those which produce less emissions) animals.
- As recognised in the CCC Pathway, reducing nitrous oxide emissions from inorganic and livestock manures is an important mitigation measure. The Department is planning new applied research and knowledge transfer initiatives, using information gained from the Soil Nutrient Health Scheme to encourage greater uptake of mitigation measures relating to the type and level of inorganic fertiliser applied.
- The ADAS modelled emission mitigation reduction delivered by the policies and proposals amount to over 700 ktCO<sub>2</sub>e by 2027 or 12.1% of the agriculture sector emissions in 2020. This is based on modelling assumptions which are stretching and challenging for policy developers, researchers, knowledge transfer and the agriculture industry in Northern Ireland.
- In addition to the above, there is the expectation that over the next number of years there will be a major emphasis on science to reduce agricultural emissions which will have significant impact on greenhouse gas emissions towards 2050.
- This all points to greater scientific evidence helping to inform new direction for agriculture, with a firm focus on just transition, for the second and subsequent carbon budgets.

## Land Use, Land Use Change & Forestry (LULUCF)

### CCC ADVICE - LULUCF SECTOR PATHWAY

| LULUCF Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                  | GHGs               | 2.8                          | 2.4                          | 1.9                          | -0.6                         |
|                  | % change from 1990 |                              | -15%                         | -34%                         | -122%                        |

### CCC Advice: Summary

#### Summary

- Reaching Net Zero will require radical action in the land use sector, implementing actions consistent with CCC's steepest emissions pathway for LULUCF (Tailwinds scenario<sup>14</sup>).
- Afforestation will need to increase substantially - with afforestation rates to reach 3,100 hectares per year by 2035.
- To increase land use sink capacity, the management of peatland must change fundamentally. By 2030, more than half of peatland in Northern Ireland should be under restoration in addition to that already under sympathetic management.
- Inclusion of engineered removals based on carbon capture and storage from both solid biomass grown in Northern Ireland and anaerobic digestion of grass used to complement livestock slurries. This would mean developing a significant bioenergy crop<sup>15</sup> supply and the use of grass to complement livestock slurries as a feedstock for a large anaerobic digester sector.
- The CCC advice on land use would have direct implications for the agriculture sector. Delivery of these pathways for land is dependent on successful implementation of land release measures in the agriculture sector.

<sup>14</sup> The Tailwinds scenario is the CCC's most ambitious and optimistic scenario.

<sup>15</sup> Examples include short rotation coppice Willow, Miscanthus etc.

**Near Term Actions**

- Emissions from LULUCF will need to fall 22% from 2020 to 2030.
- Achieving this would require a rapid ramp up of afforestation and peatland restoration rates. Low-yielding trees must be removed from peat soils by 2030, all peatland extraction sites must be restored by 2035.
- Afforestation rates will need to increase rapidly from the 540 hectares in 2021/22, to 2,000 hectares per year by 2030.
- Stretching rates of plantings of bioenergy crops, agroforestry, hedgerow creation and peatland restoration are required.
- Planting of energy crops and short rotation forestry will need to ramp up from zero currently to 3,500 hectares per year by 2030.

| <b>Assumed<br/>CCC Advice<br/>Deployment<br/>Rates</b> |                                  | <b>2030</b> | <b>2040</b> | <b>2050</b> |
|--|----------------------------------|-------------|-------------|-------------|
|  | Afforestation rates<br>(ha/year) |             | 2,000       | 4,100       |
| % of peatland that is<br>degraded                      |                                  | 53%         | 32%         | 24%         |

## **Lead department for LUULCF: Department of Agriculture, Environment and Rural Affairs (DAERA)**

### **Considerations on CCC recommended LULUCF sector pathway**

- DAERA's consideration of the CCC Pathway for land use, land use change and forestry is within the context of current policies and strategies relating to forestry and peatlands and the relevant policies and proposals contained within the Ministerial decisions on Future Agricultural Policy announced in March 2022.
- DAERA recognises that increased afforestation will play an important role in sequestering carbon. The Forest Service Strategy for Sustainability and Growth and Forests for Our Future Programme are currently in place, aiming to plant 9,000 hectares of new woodland by 2030. However, the Stretch Ambition within the Pathway means that even greater rates of afforestation are considered necessary by CCC. DAERA is continuing to explore the delivery options to help support a further increase in the rate of afforestation.
- The CCC Pathway contains very significant increases in the rate of hedgerow creation and agroforestry. This information will help inform the development of the Farming with Nature Package element of DAERA's future Agricultural Policy.
- As identified in the CCC Pathway, a dramatic increase in the rate of peatland restoration is required. In line with this, DAERA is developing proposals to put on the road to recovery over 23,000 hectares of peatland habitat by 2027. This area includes some afforested and non-forested peat sites in forestry land which will be programmed for restoration during the 2023-2027 period.
- The CCC Pathway advice includes engineered removals based on carbon capture and storage (CCS) from both solid biomass grown in Northern Ireland and anaerobic digestion of grass used to complement livestock slurries. These recommendations are being considered by DAERA and work on biomethane is ongoing between DAERA and Department for Economy (DfE).
- In relation to bioenergy, forestry and peatland restoration, DAERA recognises the interdependencies between agricultural, land use and land use change and forestry and energy policies and along with Department for Economy (DfE) is currently examining options for the better policy integration to deliver the reductions detailed in the CCC advice.
- Finally, DAERA recognises that there are significant degrees of uncertainty regarding greenhouse gas emissions from land use, land use change and forestry. DAERA will continue to invest in research to inform the development of the Greenhouse Gas Inventory, in a co-ordinated and collaborative approach across the UK and Ireland.

## Transport

### CCC ADVICE - TRANSPORT SECTOR PATHWAY

| Transport Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|---------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                     | GHGs               | 3.4                          | 4.3                          | 2.4                          | 0.2                          |
|                     | % change from 1990 |                              | +25%                         | -29%                         | -95%                         |

Note: Emissions from international aviation and shipping are excluded as they are excluded from the Act.

#### CCC Advice: Summary

##### Summary

- The CCC Pathway recommends emissions reductions in the transport sector to be achieved by implementing effective intervention policies to make it more attractive and accessible for people to walk, cycle and use low carbon public transport; reduce the vehicle kilometres travelled; and move to zero-emissions vehicles.
- In terms of vehicles, the CCC Pathway assumes every car and van in Northern Ireland will be zero-emission by 2050, requiring these solutions to meet 100% of vehicle sales in the early 2030s, with major investment required to expand the electric vehicle charging infrastructure.
- The CCC Pathway also assumes rail services will be largely electrified by 2050.

##### Near Term Actions

- Transport sector emissions would need to fall 43% from 2019 to 2030.
- New electric car sales were 10% in 2021. This implies substantial investment required 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 the next decade.
- There must also be an increased proportion of journeys made by walking and cycling to improve public health and air quality alongside reducing greenhouse gas emissions.

- CCC Pathway assumes reduction in vehicle kilometres travelled compared to increases that would occur without intervention.

| Assumed CCC Advice Deployment Rates                   |  | 2030 | 2040 | 2050 |
|---|--|------|------|------|
|   | % of cars that are battery electric vehicles |      | 34%  | 87%  |
| % of vans that are battery electric vehicles          |  | 39%  | 87%  | 100% |
| % of HGVs that are zero-emission vehicles             |  | 4%   | 67%  | 97%  |
| % of buses/coaches that are zero-emission vehicles    |  | 17%  | 57%  | 92%  |
| Distance travelled by car (billion vehicle-km/year)*  |  | 16.5 | 17.3 | 17.6 |
| Distance travelled by vans (billion vehicle-km/year)* |  | 1.0  | 1.1  | 1.2  |
| Distance travelled by HGVs (billion vehicle-km/year)* |  | 0.8  | 0.9  | 0.9  |

\*Note: 'distance travelled' measures for different vehicles are reduced compared to projected 'business as usual' figures which show larger increases



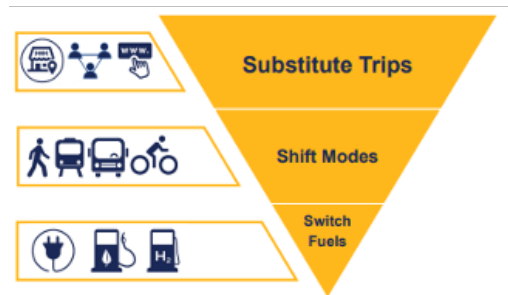
## Lead department on transport: Department for Infrastructure (DfI)

### Considerations on CCC Recommended Transport Sector Pathway

- A new **Regional Transport Strategy (RTS)** is expected to be published this year (2023), and it will set out the vision and approach to transport delivery and investment going forward. It will build upon 'Planning for the Future of Transport - Time for Change' with a new focus on local transport choices and behaviour. This strategy will be the framework for the next three carbon budget periods and the 2030 target.

- Underlying this **RTS**, a new suite of **Transport Plans** will be developed over the next two to three years, in conjunction with the new Local Development Plans which cover all 11 council areas. The new Transport Plans will set out a transformational vision with a strong focus (directed by the RTS) on active travel and public transport connections and their prioritisation.

- Through this **RTS** and suite of **Transport Plans**, the CCC transport mitigation measures will be considered. The carbon reduction approach and targeted policy intervention will be identified through a Transport Hierarchy approach, depending on the location.



- **Substituting Trips & Reducing Journeys** - this means better integration of transport and land use planning in delivery of new Transport Plans and Local Development Plans; maintaining hybrid working policies practices across sectors; supporting digital infrastructure at home/ organisations, and promotion and infrastructure support for car share club schemes.
- **Modal Shift - Active Travel** - DfI has commissioned the development of a Northern Ireland-wide Active Travel Plan that will identify the active travel schemes and routes to be delivered over the next 10-15 years. The delivery plan will be completed this year (2023) and will support the 10% active travel spend budget commitment.
- **Modal Shift - Public Transport Travel** - to support the planned delivery of new public transport priority infrastructure and interventions, DfI and Translink have set up a new Strategic Partnership Board. This Board will be responsible for the planned delivery of enhanced public transport infrastructure and services through the next 5-10 years.

- **Switch Fuels:** to include:
  - Through the assistance of the Zero Emission Vehicle Mandate, phase out new petrol and diesel cars and vans through the ban on the sale of all new petrol and diesel cars by 2030 and replace with electric vehicles;
  - support Translink's ambition to have a 50% reduction in emissions from its bus fleet by 2030 and zero emissions by 2040. The CCC has assumed rail services will be largely electrified by 2050. However, a feasibility study and cost analysis of decarbonising the rail network will need to be undertaken to inform any decisions; and
  - support the pathway for all cars and vans in the public sector fleets to be zero emission fleet by 2035. Also support the delivery of the EV Infrastructure Action Plan. The action plan highlights that the EV infrastructure development is commercially led and progress is needed on critical issues of grid reinforcement and connection fees.

## Buildings

### CCC ADVICE – BUILDINGS SECTOR PATHWAY

| Buildings Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|---------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                     | GHGs               | 4.1                          | 3.1                          | 2.0                          | 0.0                          |
|                     | % change from 1990 |                              | -25%                         | -51%                         | -100%                        |

#### CCC Advice Summary:

##### Summary

- The CCC buildings pathway indicates that emission reduction is to be achieved by ensuring all newly constructed homes are zero-carbon as soon as practicable, with no requirement for later retrofit.
- It also recommends substantial improvement in the energy efficiency of the existing building stock.
- The pathway is unlikely to be compatible with further extension to the Northern Ireland gas network.

##### Near Term Actions

- Building emissions need to fall 33% from 2020 to 2030.
- The CCC Pathway requires a ramp up in improving the energy efficiency of existing residential and public buildings.
- By 2030 for homes off-gas grid and 2033 for homes on gas grid, all new heating appliance installations should be zero-carbon.
- The public sector should lead by example. The advice for 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<sup>16</sup>.
- Delivering the near-term actions will be dependent on building up local workforce skills and supply chains and will have implications for supporting infrastructure, such as the necessary strengthening of electricity networks.

<sup>16</sup> The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf (theccc.org.uk). Sourced from the 6th Carbon Budget which was more detailed in terms of public buildings.

| Assumed<br>CCC Advice<br>Deployment<br>Rates for Key<br>Technologies |  | 2030   | 2040   | 2050  |
|--|--|--------|--------|-------|
|  | Annual heat pump installations (including hybrids) | 33,000 | 36,500 | 1,327 |
| Homes connected to district heating networks (annual)                | 1,582  | 1,168  | 850    |       |

### Lead departments for buildings: Department for Communities (DfC) & Department for the Economy (DfE)

#### Considerations on CCC Recommended Buildings Sector Pathway

- This sector includes residential and public sector buildings. Emissions primarily result from fuel combustion for heating.
- There are important linkages between the buildings sector and other sectors such as energy. Policies related to the buildings sector also span several departments. A collaborative approach is being taken to develop measures to reduce carbon emissions.

#### Residential

- Improving energy efficiency will make our homes warmer and easier to heat, bringing lasting benefits, such as improved health and wellbeing. Benefits will be maximised if interventions are designed to prioritise people facing the greatest disadvantage and this will support the delivery of a Just Transition.
- The draft Housing Supply Strategy and the Northern Ireland Executive's Energy Strategy for Northern Ireland<sup>17</sup> recognise the key role of the construction of new housing to higher standards and the retrofitting of existing homes in helping to reduce overall emissions from residential buildings.
- DfC and DfE are working with other stakeholders to develop a plan to improve energy efficiency and reduce reliance on fossil fuels for home heating. The initial focus will be on a fabric first approach to reduce energy demand in existing homes.

- Government will lead by example in driving market change to develop technical solutions, capacity and skills. Social and affordable homes built using government funding will be expected to exceed standards to deliver zero-carbon homes as soon as practicable ahead of planned phased amendments to building regulations.
- While fuel switching from coal and oil to natural gas for home heating has delivered significant reductions in emissions, a programme to replace fossil fuel heat with renewable energy and/or lower and zero carbon heat will be taken forward. Heat pumps will form an important part of this, but we will also explore heat networks and district heating in appropriate areas. The CCC pathway requires a rapid roll out of heat pump technologies. However, relevant market sectors need time to increase capacity and capability to deliver at the scale set out in the near-term recommendations.

### **Public buildings**

- The Energy Management Strategy and Action Plan commit Northern Ireland central government to a 30% net energy consumption reduction target by 2030 from a 2016/2017 baseline.
- Since 2016/17, central government fuel switching coupled with energy efficiency has led to savings in emissions of 27% and a 12% reduction in overall energy demand.
- Fuel switching is not a sustainable long-term approach, and the public sector will lead by example by phasing out the installation of fossil fuel boilers.

## Energy

### CCC ADVICE - ENERGY SECTOR PATHWAY

| Energy Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                  | GHGs               | 5.3                          | 2.8                          | 1.4                          | 0.0                          |
|                  | % change from 1990 |                              | -48%                         | -73%                         | -99%                         |

#### CCC Advice: Summary

##### Summary

- The electricity system in Northern Ireland is part of a single system and electricity market on the island of Ireland.
- Energy emissions are to be reduced by decarbonising electricity generation in Northern Ireland whilst meeting rising demand. Demand for electricity will grow, perhaps doubling by 2050, given the crucial role of electrification to replace fossil fuels.
- Fossil-fuelled electricity generation to be phased out and replaced with generation largely from renewables, with energy storage and decarbonised back-up solutions.
- Production or imports of hydrogen from low carbon sources will also be important, for use in industry, electricity generation and more widely.

##### Near Term Actions

- Energy emissions would need to fall 51% from 2020 to 2030.
- Deployment of new renewable electricity generation is required at scale, with appropriate energy storage and decarbonised back-up solutions, subject to ensuring security of supply.
- Move to lower emissions options across sectors will require necessary strengthening of electricity networks.

| Assumed<br>CCC Advice<br>Deployment<br>Rates                |                          | 2030 | 2040 | 2050 |
|---|--------------------------|------|------|------|
|   | Gas demand<br>(Twh/year) |      | 14   | 8    |
| Electricity emissions<br>intensity (gCO <sub>2</sub> e/kWh) |                          | 150  | 80   | 10   |

### Lead department for energy: Department for the Economy (DfE)

#### Considerations on CCC Recommended Energy Sector Pathway

- The Northern Ireland Executive published the Energy Strategy: “Path to Net Zero Energy”<sup>18</sup> in December 2021, which set a roadmap to achieve net zero energy by 2050 by delivering a secure, affordable and clean energy system for all. The strategy defined a set of targets to increase the amount of installed renewable energy generation, increase the energy efficiency of buildings and industry and to double the size of the low carbon and renewable energy economy by 2030.
- The Act increased the ambition of the Energy Strategy from 70% to 80% of electricity consumption to come from renewable sources by 2030.
- The Energy Strategy roadmap is supported by key policies and enablers. Together, these will help us meet the first carbon budget and contribute to future polices for subsequent carbon budgets.
- DfE is progressing policy development on the deployment of both onshore and offshore renewable electricity generation, energy storage, energy efficiency and the expansion of a smart and flexible electricity grid to meet the future energy landscape.
- DfE is working closely with DfI, relevant Arm’s Length Bodies and other statutory partners to address the challenges which come with the increased deployment of renewable energy and connecting it to the electricity network.
- Mitigation measures to reduce emissions in other sectors such as buildings, transport and business and industrial processes will focus significantly on electrification which will in turn lead to an increased electricity demand.
- The transition from fossil fueled electricity generation to renewable alternatives in the energy sector will involve collaboration and engagement across government, industry, domestic and business energy consumers to deliver a secure, affordable and clean energy system for all.

<sup>18</sup> The Path to Net Zero Energy. Safe. Affordable. Clean. (economy-ni.gov.uk)

## Business & Industrial Processes

### CCC ADVICE – BUSINESS & INDUSTRIAL PROCESSES SECTOR PATHWAY

| Business & Industrial Processes |      | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|---------------------------------|------|------------------------------|------------------------------|------------------------------|------------------------------|
|                                 | GHGs |                              | 4.6                          | 2.9                          | 1.6                          |
| % change from 1990              |      |                              | -37%                         | -65%                         | -98%                         |

#### CCC Advice: Summary

##### Summary

- Emission reductions are to be achieved through a combination of resource efficiency, energy efficiency and fuel switching.
- The sector will require strong support to make the required change and ensure that production is not transferred overseas.
- To reach its Net Zero target, Northern Ireland will need to develop infrastructure for engineered greenhouse gas removals.

##### Near Term Actions

- Emissions will need to fall 46% from 2020 to 2030. Business and industrial processes is one of the sectors with most emissions reduction needed in the next few years.
- Industry 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 electrification of heat.
- It will also be necessary to develop carbon capture policy to identify the best approaches for deployment.



**Lead department for business & industrial processes: Department for the Economy (DfE)**

**Considerations on CCC Recommended Business & Industrial Processes Sector Pathway**

- As set out in the Energy Strategy: “Path to Net Zero Energy”<sup>19</sup>, emissions in the business & industrial processes sector will be lowered through a series of interventions such as increasing efficiency, electrification, fuel switching and engineered greenhouse gas removals in industry production and buildings supported by relevant and applicable UK wide funding streams.
- In relation to business support, the UK Industrial Decarbonisation Strategy<sup>20</sup> is a key driver in this area with direct interventions supported by the Hydrogen business models and Carbon Capture Usage and Storage (CCUS) business models. Other industry focused interventions in development in 2023 include the Industrial Energy Transformation Fund (IETF) Phase 3 consultation and the Local Industrial Decarbonisation Plan (LIDP) study programme.
- In Northern Ireland, support is provided to business through the Invest NI Energy and Resource Efficiency programme which is actively upscaling. Businesses can access a portfolio of support from entry level technical consultancy supporting technical audits, feasibility studies, sustainability reports and a tailored information and advice service. Capital grant support is currently available for resource efficiency with new energy efficiency support due to come online later this year.
- To reach Net Zero, we will need to grow our engineered greenhouse gas removals capability, entailing CO<sub>2</sub> capture with repurposing in other areas and geological sequestration in combination with bioenergy. This means developing anaerobic digestion now in a sustainable affordable way that is compatible with Net Zero. It will also be necessary to develop the infrastructure to transport CO<sub>2</sub>.
- This will require encouraging early adoption of zero carbon alternative fuels such as synthetic efuels, wider phased adoption of carbon capture at scale and a reduction in energy usage in our commercial buildings via energy efficiency practices and plant replacement.
- The sector is largely captured by UK wide policies such as Streamlined Energy & Carbon Reporting Scheme (SECR), Energy Saving Opportunity Scheme (ESOS) and Emissions Trading Scheme (ETS). These policies are key mechanisms to deliver emissions reductions for UK as a whole and continued effective working partnerships with the UK Government to ensure the Northern Ireland position is reflected in regulatory arrangements.

---

<sup>19</sup> The Path to Net Zero Energy. Safe. Affordable. Clean. (economy-ni.gov.uk)

<sup>20</sup> Industrial Decarbonisation Strategy (publishing.service.gov.uk)

- On our path to Net Zero we will continue to use our modern gas network as a green molecule delivery system carrying biomethane or hydrogen or a mix of both depending on use, supply and demand.
- Uplifting the energy efficiency standards of new buildings through phased amendments to building regulations and associated guidance, as set out in the buildings sector, will be important.
- In the greenhouse gas inventory, the method of apportioning emissions to stationary combustion in manufacturing and construction requires further analysis, in order to fully understand the relevant sources and develop appropriate methods for monitoring and mitigating these emissions. This work will be co-ordinated by the cross departmental climate action Technical Advisory Group.
- Implementing change in this sector will support the key theme of growing the green economy in the Northern Ireland Energy Strategy, as well as delivering on the sustainability and innovation themes in 10X Economic Vision by focusing on key R&D opportunities and interventions with funded innovation in strategic areas to drive change in this sector. By introducing the advanced technologies, skills, practices and alternative fuels necessary to decarbonise our business and industrial sector, we will contribute to the Energy Strategy target of doubling the size of our low carbon and renewable energy economy to a turnover of more than £2 billion by 2030.

## Waste

### CCC ADVICE - WASTE SECTOR PATHWAY

| Waste Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|-----------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                 | GHGs               | 2                            | 0.8                          | 0.5                          | 0.2                          |
|                 | % change from 1990 |                              | -60%                         | -77%                         | -90%                         |

#### CCC Advice: Summary

##### Summary

- Emissions reduction to be achieved by targets to reduce waste and increase re-use and recycling rates; introducing restrictions on landfilling of most biodegradable material; and supporting methane capture from landfill sites.
- Sequestration of carbon from the anaerobic digestion of food waste used for biogas can support the restriction of biodegradable waste to landfill, dependant on the necessary infrastructure being in place.

##### Near Term Actions

- Emissions will need to fall 43% from 2020 to 2030.
- Reducing landfill emissions by proposing options to reduce or eliminate biodegradable waste from entering landfill sites. Biodegradable waste entering landfill sites will produce methane for several decades, therefore, near term action is essential.

## **Lead department for Waste: Department of Agriculture, Environment and Rural Affairs**

### **Considerations on CCC recommended waste sector pathway**

- Emissions in this sector include those released from waste disposed at landfills, wastewater treatment, and waste incineration, and is predominantly affected by regulation of landfills and the proportion of waste that is recycled.
- One of the key drivers is to increase recycling rates to at least 70% by 2030 in line with the Climate Change Act (Northern Ireland) 2022. CCC modelling assumes that this target would include both municipal waste i.e., that collected by or on behalf of local councils and commercial and industrial (C&I) waste.
- In line with the CCC Pathway, DAERA's focus over the next five years is on actions to reduce the amount of waste sent to landfill sites. Proposals to reform recycling from households (including restricting residual waste), the introduction of business recycling and amendments to the Food Waste Regulations will help divert more waste from landfill sites. Reducing waste to landfill will have the biggest impact on the reduction of emissions from the sector within the first carbon budget period.
- Anaerobic Digestion or In-Vessel Composting has the potential to support proposals and take the increased yields of food and garden waste resulting from proposals to reform recycling and strengthening the Food Waste Regulations in Northern Ireland by carbon capture or carbon sequestration.
- Local councils and the wider waste sector play a central role in the provision of waste services in Northern Ireland. DAERA will continue to work with councils and other stakeholders to reduce emissions from waste.
- The department recognises behaviour change has been and will continue to be a key driver in increasing the amount of waste diverted from landfill and in reducing overall emissions from the sector. Through an ongoing programme of behaviour change, DAERA, local councils and the wider waste sector will continue to encourage the waste prevention, reuse and recycling in order to maximise yields and reduce emissions.
- For the waste management sector, there is alignment between the CCC Pathway and DAERA's plans. The department will continue to place emphasis on research, evidence and data/information gathering to inform future policies and proposals.

## Fisheries

### CCC ADVICE - FISHERIES SECTOR PATHWAY

| Fisheries Emissions |                    | 1990<br>(MtCO <sub>2</sub> ) | 2019<br>(MtCO <sub>2</sub> ) | 2030<br>(MtCO <sub>2</sub> ) | 2050<br>(MtCO <sub>2</sub> ) |
|---------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                     | GHGs               | 0.02                         | 0.02                         | 0.02                         | 0.00                         |
|                     | % change from 1990 |                              | -17%                         | -7%                          | -94%                         |

#### CCC Advice: Summary

##### Summary

- Emissions from fishing vessels have reduced since 1990. Based on the CCC Balanced Net Zero Pathway for the sector, emissions are expected to return to pre-pandemic levels in 2022, hold relatively flat to 2030, before reducing to close to Net Zero by 2050.
- Fishing vessels are part of the wider Domestic Shipping sector, of which the Department for Transport (UK Government) is responsible.
- Emissions reductions will be through fleet efficiency improvements, electrification and zero-carbon fuels.

##### Near Term Actions

- CCC has not provided specific near-term actions for the Northern Ireland fisheries sector.
- CCC has provided advice for the UK shipping sector that is relevant to the fisheries sector. This includes developing a clear timeline and roll-out plan to achieve zero-carbon shipping clusters by 2030, and further research into efficiency, zero carbon fuels production and air quality aspects.

**Lead department for fisheries: Department of Agriculture, Environment and Rural Affairs**

**Considerations on CCC recommended fisheries sector pathway**

- The policies and strategies developed by Department for Transport extend across the UK and apply to Northern Ireland fishing vessels. This includes the Clean Maritime Plan, the Transport Decarbonisation Plan and the consultation on UK Domestic Maritime Decarbonisation.
- The maritime sector is recognised as being a challenging sector for decarbonisation because of the technological developments that are needed and the whole system changes that must be made to use the technologies safely and reliably.
- The Department for Transport (DfT) has established a new unit, the UK Shipping Office for Reducing Emissions (UK SHORE) which will implement a comprehensive research and development programme, working in partnership with industry, to tackle supply and demand issues with shipbuilding and help build greener vessels.
- DAERA considers that the decarbonisation challenges facing the shipping sector as a whole are particularly relevant to the fisheries sector. DAERA will seek to maximise opportunities through collaboration with UK SHORE.
- Investment in research and development will be required to create the innovative solutions needed to decarbonise the fishing fleet and minimize the adverse effect of fishing on climate change; and prepare for roll-out of electrification and zero carbon fuels across the fishing fleet.

## 3.4 Your View: 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 think that the Northern Ireland Executive should follow the advice provided by the CCC and choose the Stretch Ambition Scenario?

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

### 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 CO<sub>2</sub> and a further decrease of 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
- No - please provide your reasons and any suggested alternative.

**Question 9 (b). The Speculative Agriculture Option**

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

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

**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?

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



**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
- No - please provide your reasons.

**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?

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

**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?

- Yes
- No - please provide your reasons and any suggested alternatives.

**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?

- Yes
- No - if not, please provide your reasons and any suggested alternatives.

**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?

- 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?

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

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

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

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

**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?

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

**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?

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

SECTION 4

---

# Next Steps

# 4

## **Regulations setting Carbon Budgets & 2030 and 2040 Emissions Reduction Targets**

Following completion of this consultation process, the views of consultees will be considered to help inform decisions on the appropriate emissions reduction targets for 2030 and 2040, and the level of the first three carbon budgets for Northern Ireland. Work will continue to complete the necessary impact assessments and ensure all requirements are adhered to. These targets and carbon budgets must be set through regulations which need to be agreed by the Northern Ireland Executive before being laid in the Assembly for debate and approval.

## **Developing Northern Ireland's first Climate Action Plan**

DAERA is continuing to work with other Northern Ireland departments to draft Northern Ireland's first Climate Action Plan covering the period 2023-2027. The draft Climate Action Plan will be shaped by cross-departmental input on policies and proposals to reduce Northern Ireland's emissions and deliver effective decarbonisation actions across key sectors. It will also consider, amongst others, key issues of Just Transition, behavioural change, science and evidence, innovation, climate resilience, soil quality, air quality and biodiversity. In developing the draft Climate Action Plan, departments will also assess the impacts associated with the proposed policies and proposals. Stakeholders' views on the CCC Advice Report gathered as part of this process will help inform the development of the Climate Action Plan.

It is anticipated that the draft Climate Action Plan 2023-2027 will be issued for consultation as soon as possible after Executive consideration.

ANNEX 1

---

# Glossary of Terms

We have provided the glossary below for some of the terms that have been used in this consultation document.

Consultees may find it helpful to review this when considering responses to the consultation questions.

## Glossary

| ADAS          | ADAS is a UK provider of independent agricultural and environmental consultancy.  |      |                |      |   |      |   |
|---------------|---|------|----------------|------|---|------|---|
| Baseline      | The baseline is the aggregate amount of net Northern Ireland emissions of each greenhouse gas mentioned in the following table in the year specified in relation to that gas.   |      |                |      |   |      |   |
|               | <table border="1"> <thead> <tr> <th>Year</th> <th>Greenhouse Gas</th> </tr> </thead> <tbody> <tr> <td>1990</td> <td>Carbon dioxide, Methane and Nitrous oxide</td> </tr> <tr> <td>1995</td> <td>Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride</td> </tr> </tbody> </table>  | Year | Greenhouse Gas | 1990 | Carbon dioxide, Methane and Nitrous oxide | 1995 | Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride |
| Year          | Greenhouse Gas  |      |                |      |   |      |   |
| 1990          | Carbon dioxide, Methane and Nitrous oxide   |      |                |      |   |      |   |
| 1995          | Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride   |      |                |      |   |      |   |
| Carbon budget | A carbon budget provides a limit on the maximum total greenhouse gas emissions which should not be exceeded for a defined budgetary period, in order to help meet overall and longer-term emission reduction commitments. For Northern Ireland, the periods cover 5 years with the first period being 2023-2027.  |      |                |      |   |      |   |
| Carbon unit   | A carbon unit is a unit of a kind which will be specified in regulations made by DAERA. A carbon unit will represent a reduction in an amount of greenhouse gas emissions, the removal of an amount of greenhouse gas from the atmosphere, or an amount of greenhouse gas emissions allowed under a scheme or arrangement imposing a limit on such emissions. |      |                |      |   |      |   |
| CCC           | The UK Climate Change Committee - the statutory, independent, climate change expert advisors to the UK government and all UK Devolved Administrations (including Northern Ireland).   |      |                |      |   |      |   |
| CCAC          | The Republic of Ireland Climate Change Advisory Council - an independent advisory body tasked with assessing and advising on how Ireland will the transition to a low carbon, climate resilient and environmentally sustainable economy by 2050.  |      |                |      |   |      |   |

## Glossary

|  |  |
|--|--|
| Climate Action Plan                    | The Climate Action Plan sets out the proposals and policies, covering the areas of responsibility of each Northern Ireland department, for meeting a carbon budget for a set budgetary period and also has to set out how the 2030, 2040 and 2050 emissions reduction targets will be met.   |
| Greenhouse Gas GHGs                    | Greenhouse gases, the seven main gases being: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride.   |
| IPCC                                   | The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.   |
| Net emissions                          | The amount of emissions of a greenhouse gas (or gases) for a period minus the amount of removals of the gas (or gases) for the period. Emissions can be released into our atmosphere from a number of sources such as a result of our industrial activities, using transport, heating our homes and offices, and from our agricultural livestock. Removals of a gas can be through land use, land-use change and forestry and through carbon capture and storage technology. |
| Net Northern Ireland emissions account | The aggregate amount of net emissions of each greenhouse gas in Northern Ireland plus/minus any carbon units debited or credited.  |
| Net Zero                               | Net Zero means not adding to the amount of greenhouse gases in the atmosphere.<br><br>This involves reducing greenhouse gas emissions as much as possible, and balancing out any that remain by removing an equivalent amount.   |
| RIA                                    | A regulatory impact assessment (RIA) is a systemic approach to critically assessing the positive and negative effects of proposed and existing policies and/or regulations (and the alternative options).  |



## Glossary

|           |   |
|-----------|---|
| RNIA      | A rural needs impact assessment is a process aimed at helping public authorities understand the positive and negative impacts of proposed policies and/or regulations on people in rural areas. |
| 'The Act' | The Climate Change Act (Northern Ireland) 2022.   |

---

The links to the following documents mentioned in this chapter may also be useful in helping to inform your response to the questions posed in this consultation on the 2030 and 2040 emissions reduction targets and carbon budgets:

The Climate Change Act (Northern Ireland) 2022

Advice report: The path to a Net Zero Northern Ireland - Climate Change Committee ([theccc.org.uk](https://www.theccc.org.uk))

AR6 Synthesis Report: Climate Change 2023 ([ipcc.ch](https://www.ipcc.ch))

Advice specific to Northern Ireland from the CCC on the impacts of the 2050 Net Zero target, (letter 1, letter 2 and letter 3).

ANNEX 2

---

# Publication of Responses

## **Confidentiality**

The Department will publish a summary of responses following completion of the consultation process. Your response, and all other responses to the consultation may be disclosed on request. The Department can refuse to disclose information only in exceptional circumstances. Before you submit your response, please read the paragraphs below on the confidentiality of consultations as these provide guidance on the legal position of any information given by you in response to this consultation. Any confidentiality disclaimer generated by your IT system in e-mail responses will not be treated as such a request.

## **Data Protection**

Section 8 (e) of the Data Protection Act 2018 permits processing of personal data when necessary for an activity that supports or promotes democratic engagement. Information provided by respondents to this consultation exercise 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.

## **Freedom of Information**

The Freedom of Information Act 2000 gives the public a right of access to any information held by a public authority (the Department in this case). This right of access to information includes information provided in response to a consultation. The Department cannot automatically consider as confidential information supplied to it in response to a consultation. However, it does have the responsibility to decide whether any information provided by you in response to this consultation, including information about your identity, should be made public or treated as confidential. This means that information provided by you in response to the consultation is unlikely to be treated as confidential, except in very particular circumstances.

The Lord Chancellor's Code of Practice on the Freedom of Information Act provides that:

- The Department should only accept information from third parties in confidence if it is necessary to obtain that information in connection with the exercise of any of the Department's functions and it would not otherwise be provided;
- The Department should not agree to hold information received from third parties 'in confidence' which is not confidential in nature;
- Acceptance by the Department of confidentiality provisions must be for good reasons, capable of being justified to the Information Commissioner.

For further information about confidentiality of responses, please contact the Information Commissioner's Office: Telephone: 0303 123 1113  
Email: [ni@ico.org.uk](mailto:ni@ico.org.uk) Website: <https://ico.org.uk>



Northern Ireland  
Executive



**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 Template to DAERA using the email or postal address below:

**Email:** [GreenGrowthFeedback@daera-ni.gov.uk](mailto: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?

Mark McAdoo

### B. What is your email address?

Mark.mcadoo@midulstercouncil.org

### C. What is your organisation

Mid Ulster District Council

## 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 an at least 48% reduction in emissions compared to the baseline?

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).

Mid Ulster District Council supports an emissions target of at least 48% in line with the CCC advice. 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.

**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 an at least 77% reduction in emissions compared to the baseline?

Yes

No - please provide your reasons and any suggested alternative.

Mid Ulster District Council agrees with the current advice provided by the CCC in setting a 2040 emissions reduction target of at least a 77% reduction in emissions compared to the Baseline. This is in line with the advice provided by the CCC.

However Council is concerned that this must be done in a sustainable manner, which acknowledges the critically important role that agriculture and the agri-foods industry plays in our local economy. Efforts should be focussed on reducing agricultural emissions sustainably through technological and biological innovations, as opposed to a focus on achieving a widespread reduction in livestock numbers.

**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?

Yes

No - please provide your reasons and any suggested alternative.

Mid Ulster District Council agrees with the current advice provided by the CCC in setting the first carbon budget at a level that has a 33% average annual reduction in emissions compared to the baseline. As stated in the CCC Advice Report, a slightly less ambitious First Carbon Budget could be appropriate to account for a slower start in the first two years.

The Councils proposed Sustainability Strategy and Climate Action Plan 2023 to 2028 will set the target to be a net zero District by 2050 with an interim target of a 30% reduction (based on a 2019/20 baseline year) in emissions by 2030.

**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?

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?

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?

Yes

No - please provide your reasons.

## 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?

For NI to meet the targets listed it will require significant changes in relation to housing, transport, electricity generation, agriculture and transport. Mid Ulster District Council would highlight that local authorities in NI have a very limited level of control over these sectors but will commit to make changes to the emissions attributable to its' own operations e.g. fleet, estate, waste management etc.

There are important implications for policy when moving away from a reliance on fossil fuels and carbon-intensive industries. Appropriate interventions will be 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 and help to guarantee a just transition.

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. Nationally driven interventions to phase out petrol and diesel car sales by 2030 will help in this process (however Council notes the recent government announcement to delay this date until 2035). There is a risk that most of the remaining carbon budget that can be allocated to car emissions will be used before the ban is in place. Council would welcome additional 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 of the huge potential in this area.

Considering that Agriculture has such a large role to play in the reduction of carbon emissions in NI it could be argued that there will be a significant rural impact of the new targets. As Mid Ulster District is predominantly rural and has a thriving farming and agri-foods sector the impacts in our district will be significant and investment needs to be made in assisting the transition to low-carbon farming practices. The Council notes and is supportive of the promising work ongoing locally to create Zero Carbon Co-operatives which aim to use farm wastes to create biogas and biochar and has the potential to contribute greatly to carbon reduction if given the necessary support from government. Funding should also be made available to encourage farmers to change land use from agriculture and grazing to forestry and the restoration of wetlands and peat bogs.

## 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?

Yes

No - please provide your reasons and any suggested alternative.

Considerable behavioural step-change is required if Northern Ireland is to meet its Net Zero targets and obligations, however, such behaviour change will require significant public and private investment in infrastructure. This includes grid capacity, to support some of the transitions, e.g. increased electric vehicle ownership, and decarbonising of heating systems. Funding streams available in the rest of the UK and in the Republic of Ireland must be replicated here. Greater collaboration between local government, businesses and communities will also be required in areas such as district heating systems.

Also essential, will be the strengthening of the electricity networks and implementing renewable sources of energy like wind, solar and geothermal to increase the percentage of emissions reduction, currently advised at 33% from 2020 to 2030 for buildings and 51% for Energy. A 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 have unintended consequences.

There is a need to invest in more sustainable and better infrastructure that provides communities with more choice and alternatives to private car ownership, thereby reducing car dependency across Northern Ireland. However rural dwellers, who are currently less likely to be able to avail of public transport must not be disproportionately affected. Improved and safer road infrastructure will continue to be part of the solution in any just transition and Mid Ulster District Council still wishes to see an early progression of the A5 Western Transport Corridor to improve road safety and reduce congestion along the length of the proposed route.

### **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 CO<sub>2</sub> and a further decrease of 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

No - please provide your reasons and any suggested alternative.

The Council does not feel that Speculative Direct Air Capture with Carbon Capture and Storage (DACCS) is a good option for Northern Ireland. The CCC's own report states that any captured CO<sub>2</sub> would need to be transported to a storage facility outside of NI. This option, therefore, is likely to be difficult to deliver and expected to be very expensive (in the region of £190-£200/tCO<sub>2</sub>).

**Question 9 (b). The Speculative Agriculture Option:**

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

Yes

No - please provide your reasons and any suggested alternative

The Council has strong concerns with the speculative agriculture option when the dietary changes with meat and dairy consumptions falling by 47% are considered. The shift to plant-based diets combined with cultured meat would have a very significant impact on the local agri-foods industry and it is debatable whether the major behavioural shifts in diet required are achievable. Council agrees with the introduction of technological and efficiency improvements, such as the widespread use of feed additives, some to reduce methane emissions and others to promote growth. Other alternatives for reducing methane emissions from also include:

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.

The Council recognises the invaluable contribution of the thousands of farmers and other workers within the Agri-foods sector to Mid Ulster District Council's local economy and natural environment. The targets have potential consequences on food security and food prices particularly in the context of a cost of living crisis. The impact of such targets will be keenly felt by N Ireland's Agri-food industry, the local economy and Mid Ulster residents. The Council further notes NI farmers are part of the solution. Farmers in NI have signed up to tackling emissions with the GHGIP. Milk production in NI has achieved 68% reduction in fuel and electric emissions between 1990 and 2017. Targets are therefore best considered and achieved in conjunction with this sector.

The Council would also highlight its support for the ongoing work of Mid-Ulster companies which have established a collaborative cluster, facilitated by the Centre for Competitiveness, to enable them to eliminate the use of fossil fuels in their businesses. Their proposed innovative "waste-to-watts" approach will address: (i) the adoption of low-carbon farming practices; (ii) the development of low-carbon agri-food products; (iii) decarbonised fuel for transport vehicles; (iv) decarbonised construction products and; (v) the growing challenges of on-farm nutrient management and watercourse preservation. The work of the cluster is supported by funding from the Centre for Advanced Sustainable Energy (CASE) at Queens University Belfast and the UK government's Small Business Research Initiative (SBRI), implemented locally by DAERA.



**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?

Yes

No - please provide your reasons and any suggested alternative.

The Council supports the consideration of speculative technologies such as Enhanced Rock Weathering and addition of biochar to agricultural land however they still require further research to understand both the short and long terms impacts on the environment.

**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

No - please provide your reasons.

Agriculture is the largest Green House Gas 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. However, in order to ensure a just transition for the agricultural sector, there should initially be a greater on focus on improving productivity as opposed to reducing livestock numbers.

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 the use of greater scientific evidence to inform a new direction.

Any measures considered should not be to the detriment of the agricultural sector and, in particular, small, family farms which are essential to our rural communities. The measures should be targeted at the larger intensive farms which produce the greatest emissions, and should not disproportionately impact small family farms in comparison to the low level of emissions such farms produce.

It is vital that any measures proposed do not contribute to the loss of family farms which have been part of our landscape for generations and which would have a devastating effect on our rural communities. It is also considered that measures, which will lead to a significant reduction of livestock; are not appropriate as this will only encourage more food miles; creating perverse environmental and climate change impacts. The measures may also impact on other sectors such as agri-food development.

**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?

Yes

No - please provide your reasons

Mid Ulster District Council is supportive of this proposal and agrees with the CCC's recommendations for this sector. In particular, we strongly support the landscape regeneration of woodlands and peatlands in Northern Ireland in the coming years to guarantee adequate carbon sequestration to reach the target of 22% emission reduction by 2030.

**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?

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?

Yes

No – if not, please provide reasons.

As stated above, the public sector should lead by example so it is essential that the Northern Ireland Civil Service (NICS) does so also.

**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?

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?

Yes

No - please provide your reasons and any suggested alternative.

In order for the ambitious CCC deployment rates for electric vehicles (EVs) there will be a requirement for considerable upgrading of NIE infrastructure. There is a high dependency on cars in the Council area due to its rurality and lack of available public transport. Financial incentives for the purchase of EVs and the installation of charge points will be required to increase EV ownership rates.

In order to reduce reliance on cars, and increase the use of other more sustainable ways of transport (bus, train, cycle, walk, etc.), the NI Executive must commit to investing in greater and better infrastructure and services that can reduce car dependency. There needs to be better integrated public transport services e.g. combining bus/trains with cycling/walking. Alternative sustainable fuel sources such as hydrogen cell, biogas, HVO etc must also continue to be explored.

**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?

Yes

No - please provide your reasons and any suggested alternative.

Businesses must be supported in their efforts to reduce energy consumption and demand with funding incentives to retrofit by e.g. improving insulation, installation of low carbon heating such as heat pumps, similar to the SEAI (Sustainable Energy Authority Ireland) and SEAI EXEED (Excellence in Energy Efficient Design) scheme. Upskilling of the workforce will be required to encourage behaviour change and this must also be supported.

**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?

Yes

No - please provide your reasons and any suggested alternative.

The Council has some concerns with regard to the modelling to greenhouse gas emissions/savings to be achieved from the diversion of biodegradable waste from landfill given all landfill operators (including Mid Ulster District Council) have been required, as a condition of their site Pollution Prevention Control (PPC) permits, to capture the methane generated at their sites for flaring and/or energy generation and would question if these existing practices have been accurately taken account of in the modelling work to date.

The Council also has concerns in relation to some of the potential changes to waste collection systems being discussed/proposed as being necessary to meet the 70% recycling target. These include potential changes requiring the further segregation of waste at the kerbside which, in a primarily rural area like Mid-Ulster, would require the deployment of additional collection vehicles and resultant extra vehicle emissions on local roads which will not have been taken into consideration.

**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?

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.