

Northern Ireland Environment Link written evidence to the AERA Committee in relation to the Climate Change Bill

11th June 2021

Northern Ireland Environment Link (NIEL) is the networking and forum body for non-statutory organisations concerned with the natural and built environment of Northern Ireland. Its 64 Full Members represent 190,000 individuals, 262 subsidiary groups, have an annual turnover of £70 million and manage over 314,000 acres of land. Members are involved in environmental issues of all types and at all levels from the local community to the global environment. NIEL brings together a wide range of knowledge, experience and expertise which can be used to help develop policy, practice and implementation across a wide range of environmental fields.

These comments are made on behalf of Members, but some members may be providing independent comments as well. If you would like to discuss these comments further, we would be happy to do so. If you do have any further questions please contact;

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Summary

- NIEL members welcome the introduction of the cross party Private Members Bill (PMB) on Climate Change as introduced to the Assembly on 22nd March 2021 and support the main provisions in the bill.
- The PMB has cross party support from a majority of MLAs and so currently represents the best and only option to get NI specific climate change legislation passed in this Assembly mandate.
- The target in the 2015 Paris Agreement is to limit global temperature rise to no more than 1.5°C above pre industrial levels (the period 1850 to 1900). According to the UN Intergovernmental Panel on Climate Change in model pathways with no or limited overshoot of 1.5°C, global net anthropogenic Carbon Dioxide (CO₂) emissions decline by about 45% from 2010 levels by 2030 reaching net zero around 2050 (2045-2055 interquartile range), so 2045 is within the IPCC target time range within which net zero should be achieved.
- According to the Met Office and World Meteorological Organisation global average temperatures in 2020 were around 1.2°C above the global average, within 0.3°C of the Paris Agreement target. The Secretary General of the United Nations Antonio Guterres has said “the global mean temperature for 2020 was around 1.2 °C warmer than pre-industrial times, meaning that time is fast running out to meet the goals of the Paris Agreement. We need to do more, and faster, now.”
- According to the US National Oceanic and Atmospheric Administration (NOAA) since 1981 the annual global land and ocean temperature has increased at an average rate of 0.18°C. On that basis, the world will pass the 1.5°C threshold by 2050, or possibly even by 2040 (see Appendix One for more). There is therefore a very strong case for achieving net zero no later than 2050 and preferably well before then.
- The UK developed climate change legislation in 2008 and again in 2019 which applies to NI, but since the relevant areas of responsibility are devolved to the NI Assembly, there is no mechanism by which the targets of the UK Act can be enforced. A NI Climate Change Act could close this legislative gap.
- The UK Climate Change Committee (CCC) is the statutory advisor to the UK Government. According to the CCC, the UK’s 2019 legislation which set the net zero by 2050 target “was based on advice from the CCC’s 2019 report, ‘Net Zero – The UK’s contribution to stopping global warming’”
- In its Sixth Carbon Budget report the CCC developed five different scenarios which the CCC described as illustrative, not prescriptive. Only one of those scenarios, the Balanced Pathway, involved a reduction in GHG emissions in NI of at least 82% by 2050 which is a minimum i.e. a floor and not a ceiling and is a recommendation which can be tightened.
- The CCC said the investment programme for achieving net zero “can provide a significant economic boost in the coming years and support the UK’s economic recovery.”
- The AERA Minister has said “tackling climate change should be viewed not just as an environmental challenge, but also as an economic opportunity”.
- The CCC said “there is no purely technical reason why net zero is not possible in Northern Ireland”.
- In its 2019 report the CCC said “Within the UK, a 100% all-GHG target sends a clear signal that all greenhouse gases matter and all need to be reduced. No sources of emissions can qualify for special treatment. All emissions from all sectors must be eliminated or offset with removals.”
- The CCC stated that the GHG impacts of less intensive farming or agro-ecology options were not included in the CCC scenarios “due to the lack of robust evidence on the abatement potential”. This means, in effect that the estimates for GHG reductions from agriculture are incomplete and underestimates.
- The CCC stated in 2019 “A net-zero GHG target is not credible unless policy is ramped up significantly.”

AERA Committee questions

The AERA Committee has asked for views on the policy, implications and objectives of the Bill that are to:

- Enable the mitigation of the impact of climate change in Northern Ireland;
 - Establish a legally binding net-zero carbon target for Northern Ireland;
 - Provide for the establishment and powers of a Northern Ireland Climate Commissioner and Northern Ireland Climate Office;
 - Guarantee existing environmental and climate protections
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- **Enabling the mitigation of the impact of climate change in Northern Ireland**

The evidence is clear that in order to end our contribution to climate change we need to reduce our greenhouse gas (GHG) emissions to net zero as soon as possible. Northern Ireland is the only part of the UK and Ireland that does not have its own specific climate legislation. Legislation with ambitious targets is needed in order to drive action necessary to tackle the climate crisis. NIEL members welcome the introduction of the cross party Private Members Bill (PMB) on Climate Change as introduced to the Assembly on 22nd March 2021 and support the main provisions in the bill.

Actions across all sectors of society at all levels, from the individual to the state, will be needed to achieve net zero emissions. How and when these actions are implemented is an important aspect of achieving that goal. In its 2020 'Reducing UK emissions: Progress Report to Parliament' report¹ the UK Climate Change Committee (CCC) outlined some of the changes we will need to make as a society to tackle climate change and achieve net zero emissions and recommended five clear investment priorities for building a resilient economy for the UK government, namely:

1. Low-carbon retrofits and buildings that are fit for the future
2. Tree planting, peatland restoration, and green infrastructure
3. Energy networks must be strengthened
4. Infrastructure to make it easy for people to walk, cycle, and work remotely
5. Moving towards a circular economy.

The CCC² also recommended that a priority for the Cabinet Office and No.10 is for all departments to

“Integrate Net Zero into all policy making, and ensure procurement strategies are consistent with the UK's climate objectives”

NIEL believes this integration of choices that will enable us to achieve net zero in to all policy making will be essential if the net zero target is to be achieved.

The Belfast Climate Commission's Net Zero Roadmap for Belfast³ outlined the ten most carbon effective options for Belfast and, like the CCC's recommendations, options for decarbonising buildings and decarbonising transport were the most carbon effective options. Some of NIEL's priorities for reducing GHG emissions in NI are outlined below.

Insulation of buildings and building standards

The Institute for Public Policy and Research⁴ concluded that greater investment in a green recovery and clean, low-carbon jobs could create 1.6 million new jobs over the next decade in the UK, of which over 40,000 could be in Northern Ireland. This is more than three times the 11,700 FTE jobs in the low carbon and renewable energy (LCRE) economy in NI which generated £2 billion in 2017⁵. Of those 1.6 million jobs, half a million (560,000) could be created by improving the energy efficiency of homes, which would also help reduce fuel poverty and help the health and economic prospects of thousands. Action is required across government but it is important to recognise that many of the green economy policy options can generate benefits across society, in line with the aims of the draft NI Programme for Government (PfG) 2016-21. For example, the benefits from investing in better insulation in buildings could create jobs for people and firms (relevant to the Department for the Economy), reduce carbon emissions (relevant to DAERA) and reduce fuel poverty (relevant to the Department for Communities) by saving energy and making buildings warmer. This would have very positive impacts on the physical and mental health of those who would be taken out of fuel poverty and live in warmer properties (relevant to the Department of Health) and all of this could be delivered by improving building regulations, which is the responsibility of the Department of Finance.

The CBI⁶ has recognised the benefits of insulating properties and called for government action to

“Deliver jobs and energy savings by retrofitting homes and buildings to be more energy efficient and switch to low-carbon heating.”

Decarbonising energy

According to the Department for the Economy⁷, for the 12 month period January 2020 to December 2020, 49.2% of total electricity consumption in NI was generated from renewable sources located in NI. This is very positive but much remains to be done, as the whole of NI's energy system - electricity, heat and transport - needs to be decarbonised as soon as possible. One of the first steps to doing this is to eliminate the use of fossil fuels and only generate energy from renewable energy sources. It is important to note that when

developing renewable energy sources, they should be subject to detailed ecological impact assessments to ensure that the right technology is deployed in the right place, in harmony with nature, so as to avoid negative impacts such as those resulting from hydropower installations which have been known to cause problems for migratory fish species like Atlantic salmon.

While aiming for 100% renewable energy may seem extremely ambitious, it can be done. In a 2009 article in *Scientific American*⁸, Mark Z. Jacobson from Stanford University and Mark A Delucchi⁹ from the University of California, concluded that a world completely (i.e. 100%) powered by renewable energy sources for all purposes by as early as 2030 is possible, though the timescale depends on the policy decisions made as with extremely aggressive policies, all existing fossil-fuel capacity could theoretically be retired and replaced in 20 to 30 years. Separately, Mark Jacobson has stated¹⁰ that there are no technological or economic barriers to converting the entire world to clean, renewable energy sources but

"It is a question of whether we have the societal and political will."

The UK CCC report on Net Zero¹¹ found that

"emissions from the UK's electricity system can be reduced to almost zero whilst meeting increased electricity demands from the transport and heat sectors, potentially doubling the size of today's electricity system"

According to the SONI 2020-25 strategy¹² the grid can accommodate up to 65% renewable energy at present and that this figure must increase to 95% by 2030. In this strategy, SONI says it is

"committed to leading the decarbonisation of Northern Ireland for the good of everyone who lives and works here".

There is also business support for this decarbonisation of energy. More than 200 companies have signed up to commit to being run on 100% renewable electricity^{13,14} and the CBI¹⁵ has called for government action to

"Accelerate the deployment of low-carbon electricity generation and investment in grid system flexibility"

Decentralising energy should also be a central part of decarbonising the energy system as the centralised grid is highly inefficient, with two thirds of the energy generated wasted before it even reaches the consumer. There is then even further wastage at this point (of

approximately 13%) resulting in a total cumulative loss of approximately 78%¹⁶. We can learn from other countries such as Finland, the Netherlands and Denmark which meet respectively, 35%, 40% and 50% of national electricity demand through decentralised energy. By setting up decentralised energy networks and instigating energy efficiency measures Woking Borough Council's CO₂ emissions were slashed by 77%¹⁷.

The decarbonisation of energy will also bring economic benefits. According to the National Grid¹⁸ the UK will need to recruit over 400,000 jobs to build the net zero energy workforce and reach net zero by 2050, of which 13,700 jobs will be needed in NI.

Reducing energy consumption

Reducing the demand for energy also has to be a major aspect of decarbonising energy. The potential for saving energy was highlighted by the Cabinet Office's Performance and Innovation Unit (PIU) 2002 report on energy efficiency which found that there is the potential to save approximately 30% of final energy demand across all sectors amounting to reduced costs to customers of £12,300,000,000 (£12.3 billion) annually.

According to the National Infrastructure Committee¹⁹ smart power – principally built around three innovations, Interconnection, Storage, and Demand Flexibility – could save consumers up to £8 billion a year by 2030, help the UK meet its 2050 carbon targets, and secure the UK's energy supply for generations. According to The Carbon Trust²⁰,

“Energy storage could save £2.4 billion a year system wide by 2030; if regulatory hurdles are overcome this could rise to £7 billion a year.”

Decarbonising transport and investing in public and active travel

More people have been working from home as a result of the coronavirus pandemic and it is widely expected this may continue in the future. As a result there is less congestion at peak times but NIEL believes the NI Executive needs to do more to promote and enable more sustainable travel and reduce the dominance of cars in our day-to-day travel in NI, which between 2017 and 2019 accounted for 71% of our journeys and 83% of the total distance travelled²¹. This dominance of the car is also reflected in the higher proportion of spending on roads compared to public transport in NI, as compared to England, Scotland and Wales. According to the National Audit Office²², in 2017-18, 59% of the NI transport budget was spent on roads with 18% spent on railways and 11% on local public transport. This is in stark contrast to the situation in England where 59% of the transport budget was spent on railways 31% on roads and 8% on local public transport. In Scotland 42% of the transport budget was spent on roads and 47% on public transport (39% on railways and 8% on local public transport). In Wales 45% of the transport budget was spent on roads and 51% on public transport (46% on railways and 5% on local public transport). According to Translink, public

transport in Northern Ireland also receives the lowest funding of any UK region (£84 per head), just 27% of the average UK public transport expenditure (£311 per head)²³. In a survey published in 2020²⁴, 62% of Belfast residents said they wanted greater investment in public transport, 61% wanted more investment in walking, 58% wanted more investment in cycling and only 35% wanted more investment in driving.

NIEL would like to see a significant shift in spending so that the overall transport spend has at least a 50/50 split between roads and public transport, similar to the spending pattern in other UK administrations.

In addition to greater provision and use of public transport, there needs to be greater levels of active travel. Active travel also offers opportunities for increasing mental and physical wellbeing, especially in terms of reducing particulates and other air pollutants, thereby improving air quality. For example, research for the UK Department of Transport found that cycling schemes can have benefit-to-cost ratios in the range of 5:1 to 19:1, with some returns as high as 35.5:1. This research also found that a typical “cycling city” could be worth £377 million to the NHS in healthcare cost savings, in 2011 prices²⁵. Cycling UK²⁶ found that the average economic benefit-to-cost ratio of investing in cycling and walking schemes (active travel) is 13:1. By comparison, according to UK Department for Transport Road Investment Strategy: Economic analysis of the investment plan,²⁷ the benefit-to-cost ratio for bypasses and link roads is 2:1. Despite these many benefits, Northern Ireland has the lowest per capita spend on active travel in the UK and Ireland at an average of just £2 per person^{28,29}.

Electric vehicles (EVs) can help decarbonise transport if powered by electricity from renewable sources. Given that EVs emit only water, greater use of EVs could also improve air quality. EVs can also contribute to a reduction in overall energy use as electricity is a much more efficient way to use energy. As the US Department of Energy³⁰ pointed out, only 12 to 30% of the energy in gasoline (petroleum and diesel) is converted to move the vehicle (the rest is wasted as heat), whereas more than 77% of the electricity delivered to an electric vehicle goes into motion.

Nature based solutions, land use and agriculture

NIEL supports the use of what are referred to as nature based solutions (NbS) to our climate change and biodiversity problems. NbS can take carbon out of the atmosphere, supporting adaptation and help reverse the decline in nature. Opportunities to sequester carbon through habitat restoration and creation, for example, appropriate tree planting, wetland restoration, especially peatlands, the protection and creation of blue carbon habitats (the carbon stored in coastal and marine ecosystems³¹) and careful soil management must be maximised. Unfortunately, many of our ecosystems are in poor condition. The State of Nature Report (2019)³² clearly demonstrates that Northern Ireland’s terrestrial, air, water, and marine environments are suffering. According to the State of Nature report, of the 2,450 species found in Northern Ireland that have been assessed using the IUCN Regional Red List criteria, and for which sufficient data were available, 272 (11%) are currently threatened with

extinction from Ireland as a whole. More detail on the biodiversity crisis is given in Appendix One.

In their 2020 report, the RSPB, WWF and the Nature Based Solutions Initiative³³ outlined how nature based solutions can deliver multiple benefits for climate change adaptation, mitigation, biodiversity, health and the economy supporting a resilient economic recovery from the Covid-19 crisis with significant potential for creating green jobs. In that report, the RSPB, WWF and the Nature Based Solutions Initiative made five key recommendations to deliver those benefits:

1. Nature based solutions for climate change adaptation should be integrated with other policy areas, to unlock synergies and avoid adverse effects.
2. Policy support should explicitly recognize the need for a landscape approach involving a diverse portfolio of nature based solutions across different habitats.
3. Nature based solutions should be carefully designed and implemented through a bottom-up and participatory approach involving multiple stakeholders.
4. Nature based solutions should be planned to deliver measurable benefits for biodiversity through enhancing the health, diversity and connectivity of ecosystems and their habitats and species.
5. Adaptation policy should set well-defined time-bound objectives and build capacity to effectively monitor nature based solutions outcomes over the long term.

In its 2020 Progress report to Parliament³⁴ the CCC recommended landscape-scale change across the UK including tree planting, peatland restoration, green spaces and other green infrastructure that addresses carbon, adaptation and other co-benefits (e.g. flooding, biodiversity, air and water quality). Research by ORNI³⁵ has highlighted the clear link between enjoying outdoor spaces and good mental and physical health with 73% of respondents stating the primary motivation for visiting the outdoors was 'to get some exercise' and/or 'for health and fitness'. In addition, 86% of those participants reported that visits to the outdoors made them feel calm and relaxed and/or refreshed and revitalised and 32% felt closer to nature following visits to the outdoors. Restoring parks, urban tree planting, and supporting the green roof and sustainable drainage industries can help to bolster the UK's slow-growing adaptation services sector.

According to NISRA's Northern Ireland Greenhouse Gas Emissions 2018 report³⁶ in 2018 agriculture was responsible for 27% of NI's GHG emissions making it the largest emitting sector of NI GHGs. In fact, NI is the only UK region where the land use change sector acts as a net emitter of GHGs rather than a sink.³⁷

The anticipated inclusion of emissions from degraded peatland in the UK emissions inventory could add around 9% to Northern Ireland's total emissions and this highlights the need to address land use and land use management in NI for the long term benefit of the climate as a matter of urgency. Farmers and land managers should be supported and incentivised to protect, enhance and create natural habitats on their farms as a priority, as part of a just transition.

The CCC Sixth carbon report³⁸ outlines some of the main policies for reducing emissions from land use and agriculture and these include a change in diet (i.e. reducing consumption of meat) which in turn would facilitate further changes in land use if less meat is being produced, and those changes in land use include afforestation, restoring and protecting peatlands and growing energy crops. According to the CCC around 9% of agricultural land will be needed for actions to reduce emissions and sequester carbon by 2035 with 21% needed by 2050. The CCC also recommends the adoption of low-carbon farming practices and reduced fossil fuel use in agriculture³⁹. As the CCC Sixth Carbon Budget highlights, forest coverage in NI is around 8% compared to the UK average of 13%⁴⁰ so this is another example of where NI lags behind the other administrations in the UK and where there is a lot of room for improvement. However, NIEL would like to emphasise that tree planting must be undertaken in the right place e.g. not on peatlands or in other unwooded areas of high nature value and that locally grown and sourced, native stock must be used as much as possible.

It is important to account for the statement by the CCC in the Sixth Carbon Budget report⁴¹ (page 171) that the GHG impacts of less intensive farming or agro-ecology options are not included in the CCC scenarios

“due to the lack of robust evidence on the abatement potential”. This means, in effect that the estimates for GHG reductions from agriculture are incomplete and underestimates and it highlights the need for further research on the subject.

While the NI Climate Change Bill has sparked considerable debate in relation to the scale of changes required in the agricultural sector, some sections of the agricultural community have voiced support for the bill, including the Nature Friendly Farming Network (NFFN) and Farmers for Action⁴². Similarly, the NFU has committed to net zero by 2040⁴³ and it seems highly unlikely the NFU would do so if that was going to decimate the farming sector in England and Wales.

NIEL believes that it is important that as NI moves to a net zero economy, all sectors are appropriately supported as part of a just transition, which is explored in more detail later in this paper.

Invest in a low carbon economy

The CCC has been clear on the significant economic benefits that can be created by achieving net zero GHG emissions. The CCC found⁴⁴ that

“the net costs of the transition to net zero by 2050 (including upfront investment, ongoing running costs and costs of financing) will be less than 1% of GDP over the entirety of 2020-2050, lower than we concluded in our 2019 Net Zero report.”

Modelling commissioned for the CCC Sixth Carbon Budget report⁴⁵ suggests achieving net zero in the UK will give a boost to UK GDP growing to around 2% of GDP by 2030, with an accompanying boost to employment of around 1%. According to this analysis the GDP boost will continue growing after 2030 before levelling off at around a 3% boost by 2050. The CCC goes on to say⁴⁶ that considering the various economic models and evaluations, the investment programme for achieving net zero set out in section 2 of the Sixth Carbon Budget report

“can provide a significant economic boost in the coming years and support the UK’s economic recovery.”

Wholesale economic analysis has not yet been carried out as to the potential economic benefits of a net zero Northern Ireland but it is clear that moving to a net zero carbon economy also offers massive potential economic benefits.

As the AERA Minister has said in the Foreword to the DAERA climate change bill discussion document⁴⁷

“tackling climate change should be viewed not just as an environmental challenge, but also as an economic opportunity”.

We know that investing in a green economy and zero carbon options can also save money in the long term. The CCC said in its Sixth Carbon Budget report (page 261) that

“Around half of the measures to reduce emissions are expected to be cost saving by 2050, primarily decarbonising electricity and surface transport.”

We also know that there will be costs if we do not act, and those costs are projected to be much higher than the costs of investing in a green, low/zero carbon economy. DAERA summed up the implications arising from any delay in cutting GHG emissions when it said in the Discussion Document on a NI Climate Change Bill⁴⁸

“the rate at which we reduce our GHG emissions is at least as important as emissions levels at specific points in time. Consequently, the later cuts are made, the greater they must be to achieve the same long-term goal, and so they will be more expensive to implement;”

A number of scientific studies suggest a 2°C temperature could cost 15% of GDP, a 3°C rise 25% of GDP, and 4°C could cut over 30% from GDP⁴⁹. The Stern Review estimated the costs of inaction at 5% of GDP per year rising to as much as 20% a year⁵⁰. It is clear that inaction will cost more than action.

The CCC provided further detail on the financial implications of net zero in a letter to Minister Poots dated 1st April⁵¹ when it said the following:

“A slower path to decarbonisation in Northern Ireland would bring large-scale risks that would be difficult to manage”

“In addition to green recovery opportunities and the investment requirements and operational savings, there is overwhelming evidence that reducing greenhouse gas emissions will be beneficial to public health in Northern Ireland.”

“Business models that are not compatible with a Net Zero future are increasingly risky.”

“Our scenarios require that almost all new purchases and investments in Northern Ireland are in zero-carbon solutions by 2030 or soon after, and virtually all technology in Northern Ireland is zero-carbon by 2050.”

“We are not therefore able precisely to calculate the costs of Northern Ireland reaching Net Zero”

One of the most effective drivers for mitigating climate change in Northern Ireland is to set the right policies. This notion is supported by the findings of a 2011 report by the London School of Economics⁵² which concluded:

“credible long-term policy signals could leverage finance and unlock private investment in renewable energy, smart networks and communities, energy efficiency and low carbon vehicles on a great scale”.

The report argued that as regards investment in low-carbon technologies

“The issue is a lack of confidence to invest rather than a lack of liquidity.”

NIEL believes the best long term policy signal would be to introduce an ambitious NI Climate Change Act.

- **Establishing a legally binding net-zero carbon target for Northern Ireland;**

It is important to remember that the PMB submitted to the Assembly on 22nd March 2021 is a framework bill with important over-arching clauses and proposals as to how we in NI ensure we play our part in response to the climate emergency. As a framework bill, specific policy decisions are not provided at this stage but will be included within the CAPs required as part of the bill and following public consultation and NI Assembly and Executive debate and approval.

Despite the UK developing climate change legislation in 2008 and again in 2019 which applies to Northern Ireland, the relevant areas of responsibility are devolved to the NI Assembly, so there is no mechanism by which the targets of the UK Act can be enforced. A Northern Ireland Climate Change Act could close this legislative gap and NIEL believes such an act is essential. Since the introduction of the UK Climate Change Act in 2008, greenhouse gas emissions fell by 9% in NI (2008-2016), compared to a 27% fall for the whole of the UK, this suggests that we need more than a voluntary contribution from NI.

The UK Climate Change Committee (CCC) has stated that as regards the UK Government's 2019 amendment which set the net zero by 2050 target "was based on advice from the CCC's 2019 report, 'Net Zero – The UK's contribution to stopping global warming'"

It is important to remember that in its Sixth Carbon Budget report, the CCC developed five different scenarios, only one of which, the Balanced Pathway, involved a reduction in GHG emissions in Northern Ireland of **at least** 82% by 2050. According to the CCC, the figure of GHG reductions of at least 82% is a minimum i.e. a floor and not a ceiling. The CCC said in the Sixth Carbon Budget⁵³ and again in Lord Deben's letter to Minister Poots dated 1st April

"While our Balanced Pathway is the basis for our recommended budget it is not intended to be *prescriptive*. Rather it is *illustrative* of what a broadly sensible path based on moderate assumptions would look like."

Also the suggested reduction in GHGs of at least 82% is a recommendation which can be tightened. As the CCC said in its letter to Minister Poots dated 1st April 2021,

"Northern Ireland's climate legislation should allow emissions reductions to go beyond our current assessment by requiring at least an 82% reduction, and should contain clear provisions to tighten the target if there is evidence to support such a decision. We have already seen similar provisions used to increase climate targets for the UK, Scotland and Wales since 2019."

It is important to remember that the AERA Minister asked the CCC to provide advice on NI's fair contribution to the UK Net Zero target. The CCC was not asked to advise on if and how NI could reach net Zero carbon by 2050 or earlier so the CCC recommendation must be

considered in that context. However, the UK Climate Change Committee (CCC) also said on page 230 of the Sixth Carbon Budget report⁵⁴,

“there is no purely technical reason why net zero is not possible in Northern Ireland”.

It has been pointed out, especially by some opponents of the PMB, that the CCC said in its letter to Minister Poots dated 1st April 2021⁵⁵, that

“At this time, our assessment is that a Net Zero target covering all GHGs cannot credibly be set for Northern Ireland.”

However, this statement must be considered in the context of the statement by the CCC in its 2019 report “The UKs contribution to stopping global warming”⁵⁶ (on page 11) that

“A net-zero GHG target is not credible unless policy is ramped up significantly.”

It is also essential that NI has a target for net zero for all GHGs. The CCC made this clear in its 2019 report on Net Zero,⁵⁷ when it stated that all GHGs from all sectors need to be eliminated as part of the UK net zero target. The CCC stated on page 17 of its 2019 report

“Within the UK, a 100% all-GHG target sends a clear signal that all greenhouse gases matter and all need to be reduced. No sources of emissions can qualify for special treatment. All emissions from all sectors must be eliminated or offset with removals.”

There is also a need for the role of adaptation to be strengthened in the Bill, in particular, a need for better definition and integration of adaptation and resilience throughout the Climate Change Bill, strengthening of adaptation reporting measures for both public sector and civil society and capacity Building and development of expertise on climate in public bodies and organisations across NI. NIEL would refer the Committee to Climate NI for further information on climate adaptation.

According to an assessment^a by the London School of Economics⁵⁸ published in December 2019, more than 170 countries have national policies on adaptation to manage the risks of climate change impact. Two-thirds of the 100 countries have mandated that further adaptation planning be undertaken by national government ministries and/or local governments.

^a This assessment by LSE involved a review of 658 national climate change adaptation laws and policies in the Grantham Research Institute’s Climate Change Laws of the World database, which covers all countries (and 1,811 laws and policies in total).

Just transition

Ensuring a just transition is a key component of reaching net zero as it is essential that the move to a net zero carbon economy managed in a way that respects worker rights and is achieved with the help and input of employers and employees to ensure the positive economic opportunities are maximised. In relation to a just transition, the CCC said in 2019⁵⁹,

“The transition, including for workers and energy bill payers, must be fair, and perceived to be fair. Government should develop the necessary frameworks to ensure this. An early priority must be to review the plan for funding and the distribution of costs for businesses, households and the Exchequer.”

NIEL believes that NI could and should adopt an approach similar to that taken in Scotland. The Scottish Government established the Scottish Just Transition Commission⁶⁰ in 2019 to advise on a net-zero economy that is fair for all. The Scottish principles for a just transition state that action to reduce net greenhouse gas emissions should: support environmentally and socially sustainable jobs; support low-carbon investment and infrastructure; create decent, fair and high-value work in a way which does not negatively affect the current workforce and overall economy and contribute to resource efficient and sustainable economic approaches which help to address inequality and poverty. The NI PMB facilitates a just transition and requires that sectoral plans must support: job/job growth; net-zero carbon investment and infrastructure; create work, reduce inequality, poverty, social deprivation. These are referred to in the Explanatory Financial Memorandum (EFM) that accompanied the draft bill as “just transition principles”.

• Providing for the establishment and powers of a Northern Ireland Climate Commissioner and Northern Ireland Climate Office

The cross-party Climate Change Bill provides for the establishment of a NI Climate Commissioner and a NI Climate office. The Climate Commissioner will have two primary functions. The first is to monitor the implementation of the Act, including the Climate Action Plans (CAPs), and to lay annual reports on this in the Assembly. The second is to review the working of the Act more generally and to make recommendations considered necessary to achieve the overriding climate objective. The Commissioner will, therefore, provide a vital source of independent scrutiny of and advice on Northern Ireland’s action on climate change. The Climate Change Response (Zero Carbon) Amendment Act 2019 in New Zealand⁶¹ also establishes a Climate Commission, which, like the Climate Commission proposed by the NI PMB, has an advisory role and monitoring and reporting responsibilities.

- **Guaranteeing existing environmental and climate protections**

The PMB aims to secure current climate and environmental protections by ensuring the environmental laws that applied as of the end of December 2020 will continue to apply in NI and can not be weakened. Despite calls to ensure the non-regression of environmental standards and protections⁶² there has yet to be a binding commitment made by the NI Executive or Assembly. We believe that the Climate Change Bill provides an opportunity to secure this commitment and ensure that Northern Ireland acts to mitigate climate change.

Additional comments

Fairness

The point about NI doing its fair share is important and not just in a UK context but in a global context. According to NISRA⁶³ in 2018, NI's GHG emissions were 19.4 MtCO₂e^b. According to the World Resources Institute⁶⁴ this is almost the same as the 19.6 MtCO₂e emitted in 2018 in Ghana⁶⁵ which has a population of 28 million. In other words, in 2018, the 1.8 million people in NI had only a slightly smaller GHG emissions footprint than the 28 million people in Ghana⁶⁶. NI's emissions in 2018 were also higher than the 4.13 million people in Croatia who emitted 18.21 MtCO₂e⁶⁷, almost double the 9.84 MtCO₂e⁶⁸ emitted by the 2.8 million people in Albania and more than double the 9.3 MtCO₂e⁶⁹ emitted by the 15 million people in Tajikistan in 2018⁷⁰. Therefore, in the global context of fairness NIEL would argue that NI can not sit back and claim it is unfair to expect NI to reduce its emissions to net zero when NI has for a long time had much higher GHG emissions than many other countries, even those with greater populations.

This is even more clearly demonstrated when the per capita GHG emissions of countries (the average amount of GHGs emitted per person) are considered. NI's 1.8 million people emitted 19.4 MtCO₂e in 2018. This gives NI a per capita emission rate in 2018 of 10.77 tonnes CO₂e. Based on World Resources Institute data⁷¹, this is well above the 2018 global average of 6.45 tonnes CO₂e per capita and is higher than the 2018 per capita emissions in Brazil (6.48 tonnes CO₂e), the EU (7.46 tonnes CO₂e), China (8.40 tonnes CO₂e) and is more than four times the per capita emissions in India (2.47 tonnes CO₂e). NI's per capita GHG emissions in 2018 were 40% higher than the UK had in 2019, 7.70 tonnes of CO₂e. Overall, based on a global ranking of countries by per capita GHG emissions in 2018⁷² NI would then be ranked 13th in the world. The disproportionately high level of GHG emissions per person in NI places on us an onus on us to set our ambitions for reaching net zero as high as possible as quickly as possible and in the interest of fairness, earlier than most other countries.

^b MtCO₂e is megatonnes (million tonnes) (Mt) of Carbon Dioxide (CO₂) equivalent (e). It is a way of expressing the Global Warming Potential (GWP) of a number of greenhouse gases. The larger the GWP, the more that a given gas warms the Earth compared to CO₂ over that time period (CO₂ has a GWP of 1). Methane (CH₄) has a GWP of 28–36 over 100 years. This means that one million tonnes of CH₄ will have the same (equivalent) warming effect as 28 to 36 million tonnes of CO₂ so 1 tonne of CH₄ equals 28-36 MtCO₂e over 100 years

Overcoming challenges with positivity, innovation, determination and co-operation

There are occasions when the world has been faced with what seemed to be an insurmountable global problem, but with positivity, innovation, determination and co-operation those problems have been overcome. One such example is the eradication of smallpox. Evidence suggests that smallpox has existed for at least 3,000 years⁷³. It has been estimated that around 300 million people died from smallpox during the 20th century⁷⁴. In 1959, the World Health Organization (WHO) started a plan to rid the world of smallpox. This was a massive effort and required global co-operation particularly in relation to case surveillance and vaccination campaigns but also in terms of the production of a freeze dried vaccine and a bifurcated needle (a small light two pronged needle which was a cost effective alternative to the unreliable jet injector that had been previously been used)⁷⁵. According to the Lancet⁷⁶

“the backbone of the effort was decentralised regional and national programme leadership and management. Problem-oriented research underpinned these actions, solving obstacles as they arose.”

In 1978, the last death of a person due to smallpox occurred. Almost two centuries after William Jenner tried to protect people from smallpox by vaccination and less than 20 years after the WHO started an ambitious plan to rid the world of smallpox, the global eradication of smallpox was certified in December 1979 and subsequently endorsed by the 33rd World Health Assembly in May 1980⁷⁷ marking what many people consider to be the biggest achievement in international public health⁷⁸.

The Lancet⁷⁹ quoted Donald A Henderson who led the WHO campaign against smallpox as saying

“Extraordinary achievements are possible when countries throughout the world pursue common goals within the structure provided by an international organisation. WHO played this role in the eradication of smallpox.”

If we collectively approach the challenge presented by climate change with the same level of positivity, innovation, determination and co-operation that was applied to the eradication of smallpox, I would be confident we can once again achieve something extraordinary.

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APPENDIX ONE

Background - why do we need a Climate Change Bill for Northern Ireland?

There is a mountain of scientific evidence that our climate is changing, with wide-ranging risks and consequences for our society, economy and environment. The evidence is clear that in order to end our contribution to climate change we need to reduce our emissions to net zero as soon as possible. Northern Ireland is the only part of the UK and Ireland that does not have its own specific climate legislation. Legislation with ambitious targets is needed in order to drive action necessary to tackle the climate crisis.

The UK Met Office⁸⁰ defines climate change as ‘a large-scale, long-term shift in the planet’s weather patterns and average temperatures’, changes illustrated by the World Meteorological Organisation (WMO) which found that the average global temperature in 2020 was about 14.9°C, which is 1.2 (± 0.1)°C above the pre-industrial (1850-1900) level⁸¹. The UK Met Office also found that the average global temperature for 2020 as a whole was 1.28 (± 0.08)°C above pre-industrial levels, taken as the average over the period 1850-1900⁸². The “exceptional heat” of 2020, as the WMO described it⁸³, meant it was one of the three warmest years on record and almost matched the temperatures of the hottest year on record, 2016, despite the cooling La Nina conditions which existed towards the end of 2020 which typically suppress global temperatures⁸⁴. Considering global temperatures in 2016 were also elevated by El Niño conditions which can increase global temperatures by around +0.2°C⁸⁵, WMO Secretary-General Professor Petteri Taalas, the former Director General of the Finnish Meteorological Institute⁸⁶ said

“It is remarkable that temperatures in 2020 were virtually on a par with 2016, when we saw one of the strongest El Niño warming events on record. This is a clear indication that the global signal from human-induced climate change is now as powerful as the force of nature,”

According to the WMO⁸⁷ State of the Global Climate 2020 report, the past six years, including 2020, have been the six warmest years on record. Amongst many other weather related records set last year, on 20 June 2020, temperatures reached 38.0°C at Verkhoiansk, Russian Federation, the highest recorded temperature anywhere north of the Arctic Circle. According to the US National Oceanic and Atmospheric Administration (NOAA), 2020 was also the 44th consecutive year (since 1977) with global land and ocean temperatures, at least nominally, above the 20th-century average⁸⁸. According to NOAA, in 2020, the annual average temperature in Europe and Asia was more than 2.0°C above the 20th Century average for the first time⁸⁹. 2019 had been the second warmest year ever (after 2016) until 2020 turned out to be even warmer⁹⁰. According to the Met Office, the ten warmest years globally are (in order with the warmest first) 2016, 2020, 2019, 2017, 2015, 2018, 2010, 2014, 2013 and 2012⁹¹

According to NOAA, the annual global land and ocean temperature has increased at an average rate of 0.08°C per decade since 1880. However, since 1981 the average rate of increase is more than twice that rate at 0.18°C⁹². On the basis that the WMO and UK Met Office found that the average global temperature in 2020 was on average 1.2 (± 0.1)°C to 1.28 (±0.08)°C above the average, if the post 1980 rate of increase persists, by 2040 global temperatures would be between 1.46°C and 1.72°C above the global average. This is at or beyond the target of the Paris Agreement to ensure global average temperature rise is less than 1.5°C above the pre-industrial average. However, if the 2020 temperature was 1.36°C above the global average, which is the upper limit of the Met Office's calculations, then with 0.18°C temperature rise per decade, the world would pass the 1.5°C threshold by 2030 (reaching 1.54°C). NIEL contends that it is therefore clear that we must urgently and drastically reduce the levels of greenhouse gases (GHGs) emitted, especially Carbon Dioxide (CO₂) which is produced by burning fossil fuels and is often described as the primary greenhouse gas as it is responsible for around three quarters of GHG emissions⁹³. For example, the UK Department for Business, Energy & Industrial Strategy describes CO₂ as the main greenhouse gas as it accounts for 81% of total UK greenhouse gas emissions in 2019⁹⁴ and the US EPA describes CO₂ in the same way as it accounts for about 80% of all U.S. greenhouse gas emissions from human activities⁹⁵.

According to the UN Intergovernmental Panel on Climate Change⁹⁶ (IPCC) 2018 Special Report on global warming of 1.5°C⁹⁷, in model pathways with no or limited overshoot^c of 1.5°C, global net anthropogenic CO₂ emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range), (para C.1 page 12). This is the basis for the global move to setting targets for achieving net zero GHGs by 2050 or earlier. However, given the global average temperature rise of 1.2°C observed by the WMO and UK Met Office, it seems clear that we must act as urgently as we can, in line with or even beyond the upper estimates of previous recommendations. As the UN Secretary General Antonio Guterres said in the UN 'State of the Global Climate 2020' report⁹⁸

"The data in this report show that the global mean temperature for 2020 was around 1.2 °C warmer than pre-industrial times, meaning that time is fast running out to meet the goals of the Paris Agreement. We need to do more, and faster, now."

There are many other impacts of climate change that are becoming apparent, including increased precipitation and flooding. For example, according to the UK Met Office⁹⁹, six of the 10 wettest years in the UK series from 1862 have occurred since 1998 (2000, 2012, 1998, 2014, 2008 and 2002). The amount of rain from extremely wet days in the UK has increased by 17% in the period 2008-2017 compared to 1961-1990¹⁰⁰. According to the Environment Agency in England, the summer floods of 2007 in England resulted in total losses at about £4 billion, of which insurable losses were reported to be about £3 billion. This was a result of at least 180,000 claims (130,000 home, 30,000 business and 20,000 motor claims) which is the equivalent of four years' normal claims totals. According to the Pitt review of the 2007 floods in England¹⁰¹, 55,000 properties were flooded, around 7,000

^c According to the IPCC Special Report on 1.5°C, '1.5°C limited-overshoot' means those emissions pathways limiting warming to below 1.6°C and returning to 1.5°C by 2100.

people were rescued from the flood waters by the emergency services and 13 people died. According to Sir Michael Pitt, independent chair of the review,

“the floods that devastated England ranked as the most expensive in the world in 2007”

Northern Ireland has also suffered from flooding in recent years. For example, there was extensive flooding in Fermanagh 2009 when 336.8 mm of rain fell in a 41 day period and further floods in 2015 and 2016. In October 2011, Bearagh was flooded by the Cloughfin river in the second wettest October since 1910. As the NI Audit Office reported in January 2016, the water level in Lough Neagh reached its highest level in almost 100 years¹⁰². There has also been severe flooding in Belfast in 2007, 2008, 2009, 2012, 2014, 2015 and 2016¹⁰³ and severe floods in Derry and Tyrone in 2017¹⁰⁴ and again 2020¹⁰⁵. On 25th August 2020 the NI Fire and Rescue Service responded to 28 flooding incidents including on Newcastle, Maghera, Draperstown and Cookstown areas.^{106, 107} There are many other examples.

The climate and biodiversity crises

We know that climate change is also having an impact on biodiversity, at a global and a local level. For example, the IPCC's Special report on 1.5°C warming¹⁰⁸ outlines, how coral reefs, for example, are projected to decline by a further 70–90% at 1.5°C warming (high confidence) with larger losses (>99%) at 2°C warming (very high confidence). This report says¹⁰⁹ “The risk of irreversible loss of many marine and coastal ecosystems increases with global warming, especially at 2°C or more (high confidence)”

Even though coral reefs occupy less than 1% of the ocean floor, around 0.2%¹¹⁰, they are home to more than 25% of marine life¹¹¹, including the fish that provide the food – and often livelihoods – for nearly 100 million people. Coral reefs also act as barriers against the worst impacts of storms, protecting the beaches and the millions of people who live around and rely upon them. It has been estimated that coral reefs represent an economic value to the world of \$36 billion per year, and support over 70 million trips annually, making these fragile and beautiful organisms a powerful engine of coastal and marine tourism¹¹².

Peer reviewed evidence on climate change¹¹³ and biodiversity¹¹⁴ shows that the nature and climate emergencies are inextricably linked. It is therefore essential that we pursue an integrated and joined-up approach to tackling these twin emergencies.

Northern Ireland has failed to adequately respond to the nature crisis. The 2015-2020 NI Biodiversity Strategy¹¹⁵ was supposed to deliver a plan on how Northern Ireland could meet its local and international commitments to protect nature and ensure the environment can continue to support people and the economy. However, a review of the Biodiversity Strategy¹¹⁶ by RSPB NI¹¹⁷ revealed that 83% of government commitments (35/42) set out in the strategy have not been adequately met. The consequence of this failure is reflected in

reports demonstrating declines in nature¹¹⁸, and the high levels of peatland degradation (86%)¹¹⁹ across Northern Ireland.

NI got a ranking of 12 (out of 240 countries and territories, where a ranking of 1 is the lowest biodiversity intactness and 240 the highest) in a Biodiversity Intactness Index, which indicates how much nature is left from a pristine state, for the amount of nature it has left¹²⁰. According to the DAERA Environmental Statistics Report 2020,¹²¹ 35% of the features in NI's Areas of Special Scientific Interest (ASSIs) are in unfavourable condition and according to the statistics on freshwater quality standards released in August 2020¹²², 95% of NI's lakes are now failing Water Framework Directive quality standards with only one lake out of twenty one in Good condition in 2019. This compares to five out of twenty one lakes in Good condition in 2015. According to DAERA's Environmental Statistics Report 2021¹²³, in 2019, there were 1,754 water pollution incidents in NI incidents either reported to NIEA or discovered by NIEA staff during inspections or proactive work, of which 941 (53.6 %) were substantiated (confirmed) as having an impact on the water quality of the receiving waterway.

Just as climate change negatively effects biodiversity - indeed along with agricultural change is a key driver of biodiversity decline¹²⁴ - so too can action to enhance biodiversity aid action to mitigate and adapt to climate change. For example, recent analysis carried out by RSPB NI and DAERA demonstrates that restoration on peatland sites such as the Garron Plateau and Montiaghs Moss has the potential to create jobs, increase flood mitigation, increase biodiversity, and store significant amounts of carbon, with estimates showing that every £1 spent on restoration can return up to £3.91 in benefits.¹²⁵

Public support for a NI Climate Change bill

Recent opinion polls suggest a clear majority of people in NI support the introduction of a Climate Change Act for Northern Ireland. A Lucid Talk poll in NI in May 2020 found that 74% of respondents want new laws to protect nature after experiencing the COVID-19 emergency, 75% of people have appreciated access to green spaces since lockdown began and over 50% of people said they would now vote for a political party that invests in nature-rich green spaces¹²⁶. According to an opinion poll carried out by the RSPB in February 2020, 74% of respondents supported the introduction of a NI Climate Change Act and 68% of respondents agreed there should be a target to reach net zero emissions by 2045¹²⁷.

-ENDS-

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