



Northern Ireland
Assembly

Committee for Agriculture, Environment
and Rural Affairs

OFFICIAL REPORT (Hansard)

Climate Change Bill:
Northern Ireland Meat Exporters Association

24 June 2021

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:

Mr Declan McAleer (Chairperson)
Mr Philip McGuigan (Deputy Chairperson)
Ms Clare Bailey
Mrs Rosemary Barton
Mr John Blair
Mr Harry Harvey
Mr William Irwin
Mr Patsy McGlone

Witnesses:

Mr Dean Holroyd	ABP Food Group
Ms Sarah Haire	Dawn Meats/Dunbia
Mr Conall Donnelly	Northern Ireland Meat Exporters Association

The Chairperson (Mr McAleer): I welcome, by StarLeaf, Conall Donnelly, executive director of the NI Meat Exporters Association (NIMEA); Sarah Haire, head of agriculture at Dawn Meats/Dunbia; and Dean Holroyd, group technical and sustainability director of ABP Food Group. I invite the representatives to brief the Committee, after which members will ask questions. You are very welcome this morning.

Mr Conall Donnelly (Northern Ireland Meat Exporters Association): Thank you very much, Declan. Some of you will be familiar with me. I will ask Dean and Sarah to give quick introductions.

Mr Dean Holroyd (ABP Food Group): I have been in this role for seven years. My role spans red meat, our renewable energy division, pet food and proteins. Prior to that, I worked in similar capacities across all food sectors.

Specifically, ABP Northern Ireland's main business is in processing beef and lamb. We have two processing sites, in Newry and Lurgan, that employ about 800 people. We work with about 5,000 local farms. We also operate public joint venture partnerships, one with Linden Foods and the other with Frylite, which provide circular economy solutions in renewable energy. Sustainability in operating is core to the sector and at the very heart of our business; I am sure that Sarah will say the same. Along with others in the industry, we are committed to science-based targets. In Northern Ireland, we are the business climate champion and work with Business in the Community.

There are two last things to say. We are involved in many red meat forums; Sarah might elaborate on some of those. In a wider context, outside red meat, we also sit on the Institute of Grocery Distribution, which is, in essence, the top 20 companies in food manufacturing and retailing across the UK, where healthy and sustainable diet is a key area of focus. Similarly, we sit with 50 other European organisations as a member of EIT Food, along with the European Institute of Innovation and Technology and Queen's University. One of the six key pillars of that is about enhancing sustainability across the entire food sector, not just in red meat.

That is a bit of context about me, my background and our business.

Ms Sarah Haire (Dawn Meats/Dunbia): In Northern Ireland, the Dawn Meats group is the Dunbia group. We have a site in Dungannon for abattoir and retail packing facilities.

I wear a number of hats on the sustainability journey. I am a farmer. My in-laws farm on the side of Divis, so the accent might belie my interest in Northern Ireland. I am also chair of the UK Cattle Sustainability Platform, which is a multi-stakeholder platform that is trying to understand the challenge and drive change in the sector by looking at sustainability across a number of environmental, ethical and economic pillars. That links into a wider European platform that both ABP and we are involved with, namely the European Roundtable for Beef Sustainability, which, again, involves trying to navigate our way through some of the challenges that this presents for us. Between Dean, Conall and me, we have a wealth of expertise, so hopefully we will be able to put this into context today.

Mr Donnelly: Chair, this opening statement will probably take about 12 minutes, so I hope that you can bear with me.

We are grateful to the Committee for giving us the opportunity to give evidence. It would have been better had there been a consultation on the Bill before it was laid and if there had been formal impact assessments. Nonetheless, we hope that you find the evidence that we provide useful.

I will give a bit of background. NIMEA represents the red-meat processing sector. Our members directly employ more than 5,000 workers in factories in Northern Ireland. Those are usually on the Bann — Newry, Lurgan and Coleraine — or west of the Bann. They support the activities of about 23,000 farmers. Our family farms have amongst the lowest emissions per kilo of beef and sheep in the world, about 2.5 times lower than the global average, but we are not complacent. We are clear about the need to minimise emissions in the industry and about the need for legislation.

Today, we will explain the actions that we, as an industry, are taking to reduce our carbon footprint; our inability to meet the net zero targets in the Bill; the impact on farming, the economy and food security that would flow from this; the evolving science on measuring carbon emissions and the risks associated with policymaking on the basis of carbon accounting principles that are contested and applied differently in different countries; and how the combined impact of the Bill and the current UK trade policy would be the decimation of our industry without really delivering any reduction in global emissions.

In Northern Ireland, where much of our land is unsuitable for arable farming but has excellent conditions for grass growth, pasture-based farming is the primary agricultural enterprise, with ruminant livestock converting non-edible grass to high-quality protein. We have 1.6 million cattle and 2 million sheep here. Last year, our members produced enough beef and lamb to feed 10 million and 2 million UK consumers respectively. Eighty per cent of our production goes to the UK, so it is logical to look at this on a UK-wide basis.

The livestock sector generates greenhouse gas (GHG) emissions. We accept that and embrace our responsibility to address it in the interests of the environment, the economy and society but also our industry; we have a self-interest in resolving the problem. Agricultural emissions are caused largely by natural processes and are therefore difficult to treat. It must be recognised that you cannot produce food and completely eliminate emissions. However, we want to reduce and eliminate emissions as far as possible.

Our members have undertaken significant work at factory level to reduce emissions. They are operating carbon-neutral operations, using carbon-efficient technology, eliminating waste and using renewable energy, such as anaerobic digesters, to power their plants and return excess electricity to the grid. Making progress on-farm is far more challenging due to the extremely fragmented beef and sheep supply chain in Northern Ireland. However, progress has been made through the greenhouse gas implementation partnership's Efficient Farming Cuts Greenhouse Gases programme.

We are starting from a good position. Under that programme, DAERA and the industry have undertaken numerous research and knowledge-transfer projects, coupled with grant-aided investment in carbon-efficient technology on farm. Meanwhile, members have independently established their own dedicated supply chains with carbon audits conducted with participant producers. That is not across the whole industry, but, in those dedicated supply schemes, carbon reduction targets are in place for the farms that participate.

In addition, our members are promoting soil testing, reduced nitrogen fertiliser, zero-till farming, slurry injection application, improved grassland management, improved efficiency, and bovine viral diarrhoea (BVD) eradication, which is a really important contributor to reducing climate change. We have made fantastic progress on this in Northern Ireland. However, it is questionable whether all of that benefit is captured in the inventory. We will come on to that later.

Our plan is to urgently measure and set emissions reduction targets for all farms. NIMEA has provided the Livestock and Meat Commission (LMC) with additional funding for its quality assurance scheme, with the purpose of measuring carbon emissions on all farm quality assurance scheme (FQAS) farms. Work is ongoing to implement that programme. It is also intended that industry and government will jointly invest in a livestock genetics programme, which would drive emissions through genetics, genomics and breeding. In addition, a soil testing and management programme has the potential to drive significant progress. Those are recommendations that we have made to DAERA with respect to agricultural policy. You have our proposals on that, Chair. Those are heavily focused on sustainability and reducing greenhouse gases. If we can improve our efficiency and use our grass more effectively, the net consequence will be that we use less land and require fewer emissions to produce the same amount of output. That is what productivity is all about. By doing that, our suppliers can free up less productive land for tree-planting, rewilding and biodiversity projects, for example.

Net zero is a policy proposal for Northern Ireland that should not and cannot be supported. I will outline why by, first, exploring the impact of the private Member's Bill. The ability of countries to meet net zero targets is heavily dependent on how emissions are measured, the structure of their economy and their natural geography. Some countries, like Scotland, can do it more easily than others because they have vast swathes of unfarmed land. Others, like Northern Ireland, cannot do it without massive economic harm. It is wrong to put targets in legislation that, on the basis of all of the available evidence, cannot be achieved. We are all taught that targets should be specific, measurable, achievable, realistic and timely (SMART). Northern Ireland net zero is not a SMART target, because it is not achievable.

In the absence of an impact assessment, we, the industry, commissioned one. On the basis of some provisional findings, in order to meet the net zero target, livestock numbers would likely need to fall by as much as 85% on the basis of currently available mitigation techniques. That is broadly in line with the views of the Climate Change Committee (CCC). I have the following questions for the Bill sponsors and co-sponsors. What will be proposed when targets are not met? Will a cull of the majority of ruminant livestock be proposed? Have the consequences of that been thought through?

The overall food sector in Northern Ireland sustains 113,000 jobs, both directly and indirectly. The ruminant sector represents about 50% of industry turnover. Consider the impact on rural employment if 85% of the ruminant livestock has to be removed from our farms. Our industry directly underpins tens of thousands of jobs in farm shops, veterinary practices, feed mills, cold stores, haulage, machinery dealers, trades, construction supplies and public services such as DAERA, the College of Agriculture, Food and Rural Enterprise (CAFRE) and the Agri-Food and Biosciences Institute (AFBI). These jobs are mainly rural, and many are west of the Bann, where it will be most difficult to provide replacement jobs.

On food security, we should bear it in mind that climate change will make the challenge of feeding the global population even greater. The Food and Agriculture Organization (FAO) forecasts that, globally, beef demand will rise by 65% and land demand by 92% by 2050. With a temperate climate, skilled farmers, abundant water and grass supplies, do we not have an obligation to use our resources sustainably to feed a growing population? The impact of the Bill would be that, instead of being able to supply 10 million UK consumers with beef, we would barely be able to supply Northern Ireland consumers.

The cost is significant economic harm, but what is the benefit? Colin Breen's recent evidence showed that the marginal benefit of straying from the very stretching CCC advice by implementing a net zero target would be an additional 0.73% contribution to overall UK emissions targets. That is negligible in UK terms, never mind global terms, which is really what counts. Do not read this as us making an

argument for doing nothing because we are small; this is an argument for recognising that the economic and societal costs of reaching net zero versus those for reaching a more realistic target are unacceptable, given the tiny additional benefit globally and the brutal cost to food security and the local economy.

The effective implementation of climate legislation depends on being able to measure it properly. There are major questions, however, about the carbon accounting principles that underpin that measurement. The scientific basis for carbon measurement is evolving and uncertain. The risk is that our industry will be devastated by policy that is driven by today's carbon accounting principles in conjunction with the Bill but those principles will change in the future. There are major questions, first, about using standardised figures to calculate the inventory. That means that the good work that is being done on efficiency may not be captured in the inventory or may take years to be recognised. Another issue is accounting for the carbon sequestration potential of grassland. A third issue is measuring emissions on the basis of nutrient benefit rather than basic per kilo of output. A final and important issue is accounting for the emissions from biogenic methane, which is a flow gas.

Arising from those debates, countries are taking different approaches to measuring livestock emissions. That has implications for a level playing field in international trade. I draw your attention to New Zealand, for example, where the Climate Change Response (Zero Carbon) Amendment Act makes a distinction between livestock or biogenic methane emissions and emissions arising from fossil extraction. The New Zealand legislation recognises that biogenic emissions are part of a biological cycle. Those so-called flow gases are removed from the atmosphere at a much faster pace than so-called stock gases, which are caused by fossil fuel extraction. The science says that, because biogenic methane emissions are cycled in the atmosphere, once it is in equilibrium, livestock methane can continue to be emitted at a stable rate without its concentration in the atmosphere increasing; in other words, so long as livestock numbers are stable, their emissions will not cause additional warming.

On the basis of that science, the New Zealand legislation aims to reduce emissions of fossil methane and other greenhouse gases to net zero but makes an exception for biogenic methane. That is where the debate between 100-year global warming potential (GWP100) versus GWP* comes in. The Irish Bill references the same science. Unless a similar approach is taken here, the Northern Ireland ruminant livestock industry will be substantially downsized and there will be a major opportunity for New Zealand to replace Northern Ireland outputs in the markets in which we compete, particularly once a New Zealand trade deal is agreed. The Bill will create a significant level-playing-field issue if it is passed in its current form.

The recent deal between Australia and the UK is also worth considering. The Australian beef industry has been given a quota that is equivalent to almost three quarters of a million slaughtered cattle to the UK market and nearly 8 million sheep. That beef quota is greater than the entire Northern Ireland annual kill; in fact, it is heading for double that. The sheep excess is huge: it is almost 20 times that of Northern Ireland's output. Now, consider that Australia does not have a net zero target. Even were Australia to adopt one in future, there is no guarantee that that would restrict its ability to serve the UK market. Again, it goes back to the question of measurement. Depending on how emissions are measured, it is, therefore, entirely possible that a combination of this legislation and the Australian free trade agreement (FTA) would result in our beef and lamb being displaced in the UK market and even in the tiny local market by Australian products.

I listened yesterday to Claire Hanna of the SDLP speak on 'Talkback' about the lack of logic, given our climate obligations, in importing red meat thousands of miles across the globe into the UK. Claire Hanna was absolutely right, but the point is that trade is a reserved matter and the Assembly has no power to change UK trade policy and to protect us in that regard. However, it can protect our farmers by ensuring that the Climate Change Bill does not result in the decimation of the livestock sector and the economic impact that would flow from that.

Looking at it more deeply and considering that, per kilo of protein produced, ruminant emissions in western Europe are the lowest in the world, we can see just how incoherent the two policy positions are when you put them together. Global livestock environmental assessment model (GLEAM) statistics from the FAO show that cattle emissions per kilo of output from Oceania are 54% higher than emissions in western Europe, while emissions from sheep are 10% higher. Assuming that Oceania levels are representative of Australian emissions and that western European emissions are representative of Northern Ireland emissions, that shows that the impact of the Bill would be increased global carbon emissions from UK beef consumption, arising from reduced Northern Ireland production and increased imports. That is before you consider what Claire Hanna said yesterday about the

carbon cost of transporting that meat from the other side of the world. That would be a staggering outcome from a policy that is intended to reduce global emissions. To add insult to injury — this is a really key point — the nature of current carbon accounting means that the emissions from Australian and New Zealand imports or any imports into the UK market do not even show up on the UK greenhouse gas inventory. However, emissions from Northern Ireland production obviously do. That is an intolerable situation.

We argue that, if the Assembly passes the Bill, it will be complicit in exacerbating those Brexit-related impacts. It would decimate our industry, which is starting off well ahead of international competitors who will see the Bill as a fantastic opportunity to replace us in the UK market. You need to make sure that that does not happen, because it is not in the interests of your constituents, our economy, our food security or the environment. We have demonstrated that only coordinated global action will address climate change. Uncoordinated action by small countries or, in this case, regions of small countries will make a negligible difference to the entire issue and, in fact, could be counterproductive.

The Chairperson (Mr McAleer): OK. Thank you for that, Conall. That was a wide-ranging and informative presentation about the potential impacts of the Bill. We share the concerns that you have raised. The important thing about our call for evidence, as part of scrutinising the private Member's Bill, is that it gives us an opportunity to listen to people like you and to hear directly about the potential impact of the Bill on the industry.

As you know, this is a framework Bill. By the time the process concludes, the Bill may have been amended to address some of the impacts that you have highlighted, for example, on carbon leakage. Certainly, I can see the lack of logic in importing meat from 10,000 miles away on the far side of the globe and how that would be a complete contradiction of climate change commitments. So, your points are important.

You mentioned quite a lot of things there, Conall, including the Bill in the South of Ireland. The South of Ireland is working towards a 2050 target. It is suggested that the North should work towards the less ambitious target of 82% by 2050. Given the fact that a lot of food is processed across the island of Ireland, do you envisage any difference in access to international markets if some of the food is produced in one part of the island under different climate change legislation or targets?

Some of the figures that you have presented are stark. You have said that, if the Bill is not amended in some way, there would be an 85% cut to livestock. We are not picking up those sorts of shocking statistics from the South of Ireland. We share the same land mass, the same land types and the same challenges, but we are not hearing shocking statistics in the South; rather, we hear about the marginal abatement cost curve. Teagasc is not making those stark statements. Do you see any challenges in having two different pieces of legislation on the same island, given that the food is produced across the whole island?

Mr Donnelly: There is quite a bit there, and I will bring Sarah and Dean in to pick up on parts of it.

On the implications for international trade of having a different approach, the UK is the competent authority for international trade when we do a trade agreement with somewhere else in the world. We are keen on international trade, and we are very focused on our reputation. However, we will abide by UK climate targets. We agree that there needs to be climate legislation in Northern Ireland. We support that and will play our part. I do not see any contradiction in what we say and our ability to access third-country markets or customers.

I will bring Sarah or Dean in at this point, because I have talked a lot.

Mr Holroyd: I have a couple of comments on that. Clearly, at this juncture, the Irish Government have not debated the thorny topic of sectoral targets: how the national ambition breaks down for individual industries. There has been a lot of commentary that, given the way that things are currently measured, in order to achieve the targets, the Republic of Ireland (ROI) would have to undertake a significant cull. It might not be as high as 85%, but numbers north of 50% have been referenced. It would be devastating. A lot of the arguments that Conall outlined apply equally to ROI's starting position, as its footprint is among the lowest in the world. There are similar dynamics North and South.

One of the key differences is that the Government in the South have recognised the issue of methane accounting, biogenic emissions and sequestration. I cannot remember the exact phraseology, but those have been given special status such that, when the accounting principles catch up with the

world view of climate science, the measures should not need to be as draconian. The Government in the South also recognise that there is significant potential efficiency to be gained, as there is in the North and GB, from the current footprint. That means that you do not necessarily have to compromise output. You can drive efficiency, create great elements of land that can be reapportioned and get a scientific opinion on short-lived greenhouse gases as opposed to the nonsense of converting them to CO2 equivalents.

The Chairperson (Mr McAleer): As a consequence of Brexit, there is an onus on us to work across the island. We are pushing hard to get the North included in the protected geographical indication (PGI) status for Irish grass-fed beef. Our next contributor to the Committee will be the Dairy Council. It was down in the Oireachtas last week arguing for milk across the island to be treated not as mixed origin but as the same milk to enable us to access EU deals.

Surely we should be arguing on an island-wide basis to benefit our beef. I noted from correspondence that we got from the Minister recently that beef with a PGI status has 20% more value. We are arguing for a single pool of milk across the island of Ireland and for it not to be differentiated. I noted that competitors were trying to undermine milk from the island of Ireland because it was deemed to be mixed origin. How is it logical, then, to argue for different Climate Change Bills in both parts of the island?

I noticed that, in recent months, the president of the Irish Farmers' Association has said that it was scaremongering to suggest that there would be such huge cuts to livestock but that would happen if we do not put measures in place over the next number of years. What is the logic of having two separate measures on the one island, if we are trying to move forward together to reap the benefits across the globe?

Mr Donnelly: I will address the latter point first, if that is OK, Declan.

The Chairperson (Mr McAleer): That is all right, yes.

Mr Donnelly: This is a difficult subject. An awful lot of the industry and an awful lot of countries want to say, "Yes, we can do this", because it is absolutely brilliant to be able to say, "Yes, we can do net zero". However, it is not as simple as that. There is a lot of concern that, if you say you cannot do it, you put your hand up for livestock reductions. We want to be upfront and clear about the implications of the legislation: net zero in Northern Ireland would mean substantial reductions in livestock. We need to be upfront about that and discuss the consequences. We should not run away from it.

We should be clear as well about the difficulties in measurement. As Dean said, the question of measurement is for North and South. The Republic is addressing the question of biogenic methane in its legislation by stating:

"For the purposes of performing their respective functions under this section, the Minister and the Government shall have regard to the special economic and social role of agriculture, including with regard to the distinct characteristics of biogenic methane".

The Bill continues:

"The Advisory Council shall—

(a) carry out its functions under this section in a manner— ...

(ii) which takes account of— ...

(II) relevant scientific advice, including with regard to the distinct characteristics of biogenic methane".

You can have different legislation. Our legislation will not be the exact same as the South's. Nuances can make an extremely big difference to your ability to meet the targets. Having the scope, as the New Zealanders do, to treat livestock emissions differently makes a huge difference, and that is the point. We could end up with the wrong approach and with a level-playing-field issue North and South, whereby we are significantly disadvantaged.

I do not know if Sarah or Dean would like to add anything to that.

Ms Haire: It comes down to the biogenic methane discussion. It is not just about methane; it is about treating the short-lived gases differently rather than lumping them all under the same umbrella. It is about looking at the opportunity with livestock, where we have the question around carbon sequestration to build in. That might have a positive impact over time, but we are not quite there yet with the science. Having a Bill that includes a broad sweeping statement without taking that into consideration at this stage could have unintended consequences long term, because, as you said, people are jumping on the point about it having a negative impact on the livestock sector, when we could be part of the solution. Making that broad statement now is probably quite damaging to the journey that we are all on and have been on, for at least 10 years or so in our case, in trying to look at this topic.

The Chairperson (Mr McAleer): Are you saying that making a broad statement on severe livestock cuts could be damaging to the *[Inaudible]*?

Ms Haire: What I mean is that a broad statement about climate net zero without taking that into consideration for livestock could be quite damaging.

The Chairperson (Mr McAleer): Are you, as a group, suggesting that that can be looked at in this Bill, which is a framework Bill, let me remind you? Do you think that looking at the biogenic nature of methane would be worthwhile as part of the final Bill?

Mr Holroyd: Absolutely, because this is where global accounting principles have not caught up with science. The GWP* makes determinations around treating short-lived pollutants, which are things that will decay after 10 years, differently from long-lived pollutants. Methane is one of the short-lived pollutants, while CO2 lasts for thousands of years in the atmosphere. This is not livestock scientists or meat-processing scientists; this is globally recognised climate experts. They probably know little about agriculture, but they come out of the Center for International Climate and Environmental Research in Europe, the University of Oxford's sub-department of atmospheric, oceanic and planetary physics, and the University of California. This is getting increasing recognition in the scientific community about its validity and how robust it is in being able to differentiate the contribution to global warming of short-lived pollution versus long-lived pollution.

Mr Donnelly: The one thing that I will add to that is that it takes time. I think that the Intergovernmental Panel on Climate Change (IPCC) is looking at this at the moment, but the IPCC has looked at other things in the past and at the impact on how the inventory is managed. The point will be around how peatlands are measured on the land-use side. A determination was made on that maybe 10 or 12 years ago, but it is only impacting on the inventory now. Our concern is that, although this is a framework Bill, it will drive policy, otherwise what is the point of having it? If the inventory does not catch up with the science quickly enough, the policy implications flowing from the Bill could be damaging and could have done the damage by the time the measurement is resolved. That is a really important point, Declan.

Mr Holroyd: While we are on the point about measurement, one further thing that is worthy of consideration is the question of where the measurement of sequestration sits and of who owns that sequestration. For me, it would be morally wrong if a farmer had to carry the burden of the emissions of his farming entity but, correspondingly, cannot access the benefits of the sequestration of the land that he farms and owns, the hedgerows that he farms and owns and the trees that he farms and owns. Those two things have to work hand in glove.

The Chairperson (Mr McAleer): Dean, I am conscious that I need to move the questioning round the room, but I could not agree more with you on that point. I made the point at the Committee two weeks ago that there are so many mixed messages coming out for farmers. Farmers are being told, on the one hand, that this is devastating and they will have to cut their livestock by between 50% and 85%, and, on the other hand, other experts are saying that many farms, particularly in marginal areas, are already carbon-neutral. Farmers need a means to work out what their baseline is to know what they might have to do. In some cases, farmers may already be there. There is work to be done there.

I am hogging the meeting, so I will move on. I will bring in Patsy.

Mr McGlone: Thank you very much. I find this very interesting. Your presentation definitely raised questions for me, and maybe I will put them back to you. You question the science, and I hear that. I represent a rural area. Many of my friends and family etc are involved in farming and the agri-food

sector, for want of a better term. I entirely hear where you are coming from. From what I pick up, you question the validity of the science about where we are contemporarily. What science do you, as an industry, have to challenge that, either globally or otherwise? I hear a lot of questions from you. If we are going down the route of dealing with issues to do with sequestration and biogenic methane — I hear those questions, and I want to be supportive of measures to do that — can you advise me about the science that you have in support of that thrust?

I also agree with my party colleague, and you referred to this matter earlier, Conall. For me, it is really daft to hear of a trade deal that involves huge amounts of travel from the lower end of the world, when that travel has not been taken into account. That is really daft. It may be a trade deal with no tariffs and all that sort of stuff, but it is equally going to jeopardise the trade here. You referred to the figure of 80%. That is a huge challenge. We talk about the challenges of climate change and measures to adapt to that, which are huge. We are looking at legislation, we are hearing the science, and, in this instance, we are hearing about the impact of the agri-food sector on climate change. We are trying to work our way through that. Fundamentally, my question is about the science that you have in support of measures to go down the route of biogenic emissions and sequestration. That is what I am looking for.

Mr Donnelly: I will bring the guys in on that quickly. First, the science is there. We are not contesting that it is a contested area in which the science is evolving. The science is evolving, and the measurement is evolving. That is the key point. I will hand over to Dean to go through the science, because he referred to where the science is going.

Mr Holroyd: I will headline my answer by saying, "What science have we got as an industry?". The science that we have as an industry draws on global science from leaders in climate science. That brings an independent strength and validation to it. If you want supporting evidence around why methane, in essence, is over-accounted for and contributes little or nothing to global warming if you have a static level in the atmosphere, there is no end of peer-reviewed papers. There is Professor Myles Allen, Dr Michelle Cain from Oxford University and Dr Frank Mitloehner from the University of California. I cannot remember the name of the guy from the Center for International Climate and Environmental Research in Norway. Those guys are climate scientists. They work in institutions that look at the physics of how methane breaks down over 10 years in the atmosphere. The CO₂ that is generated now is added to the CO₂ that has been generated for a thousand years. It is cumulative; it is a type of stock gas. The methane that is being generated now, assuming that we have a static herd, is only replacing the methane that biodegraded 10 years ago.

That was a long answer, but the short answer to your question is that I do not think that you should look for that climate science from us. We are the last people from whom you should look for it. You should look for it from those climate experts, and it exists in abundance.

Mr McGlone: Sorry, all that I was throwing out was an invite. You made an argument, and I am trying to find scientific validation for it. I thought that maybe I was giving you the opportunity [*Inaudible owing to poor sound quality.*]

Mr Holroyd: I have no end of peer-reviewed papers that I am happy to send you, but they are not generated by ABP; they are generated by those experts.

Mr McGlone: All that I am looking at is the specific issue of biogenic methane. If there are mitigations or measures that can be put in place, we should look at that separately. You referred to New Zealand. I am trying to get the nature of the science on which that is based; that is all. You mentioned a few there. If those are highlighted, I am sure that they will be picked up by Hansard.

Mr Donnelly: Absolutely, Patsy. I will add to that. Dean has made the point that I was clumsily trying to make at the start: it is not our science; we do not own it. It is independent science.

Mr Holroyd: OK. At the heart of this is elementary chemistry. CO₂ does not break down in the atmosphere; it hangs around for thousands of years. That is why any CO₂ that is generated now is constantly cumulative and constantly adding. Methane, CH₄, breaks down into two components after 10 years: water vapour, some other fractions and a tiny element of CO₂. However, the concentration of that CO₂ is tiny, relative to the global warming potential of methane. Whilst we say "a static herd", we actually need to be reducing methane emissions by 3% every 10 years, so that it does not contribute to global warming: 0.3% per annum.

Mr McGlone: Our hearts may take us in one direction, but we must work on what the science says now. We cannot predict what the science might be in 10 or five years' time. Following through on that, what other mitigation measures can be taken by the farming community to offset that 3%, I think you said?

Mr Holroyd: Over 10 years, it is 3%, which is 0.3% per annum.

Mr McGlone: What mitigation measures can be made practically on farms or, indeed, by the wider industry to offset that or to reduce it, I should say?

Mr Holroyd: May I come in there? One thing that we absolutely want to come across here is that there is an opportunity. There is a significant opportunity to derive improvement on genetics through breeding animals that eat less, grow faster, can be slaughtered at an earlier age and, therefore, generate fewer methane emissions. Dawn Meats has numerous activities, as do we. We have two demonstration farms where elite genetics can reduce the age of slaughter and reduce methane emissions by about 40% versus the national average.

Mr McGlone: Is that happening now?

Mr Holroyd: Yes.

Mr McGlone: OK. I have one final question, Chair. Sarah, you said that you belonged to a sustainable farming group. Can you advise us about the practical measures that are developing there, at that level, by that group?

Ms Haire: Yes, sure. It comes down to that. There are a huge number of practices that farmers can do to support the journey to improving our climate. As Declan mentioned, it is a confusing space. On the one hand, you can look at genetics and, on the other, at feed. We are looking at novel feed additives, including seaweeds and things like that, to reduce methane in the rumen. We are looking at the genetics piece. We are also looking at the meat quality piece, because there is the nutrient density conversation that Conall referenced. Of 100 grams of spinach and 100 grams of beef, I know which I would prefer to eat, to be honest.

The group that I chair at the moment is working under the Global Roundtable for Sustainable Beef, which is trying to have a strong narrative [*Inaudible owing to poor sound quality*] driving under four key pillars. We have pillars around the environment and on animal health and welfare. We have a pillar on animal medicines and one on farm management. We have called it "farm management", but it is about the economic drivers. You cannot take any one of those things in isolation, because they all have unintended consequences — I will use that phrase again — for a number of things. We want to have healthy animals. The animal medicines debate has been a really live topic and has been driven by industry for the past 10 or 15 years or so. It involves trying to calculate the situation and what farmers can do — not just farmers but the advisory services that go along with that, the veterinary practitioners etc — to have a joined-up message. That is what the group that I chair is doing: saying that we have four key pillars and eight outcome measures — again, it is very much outcomes-based — to say, "This is where we are trying to get to, and, if we are all singing off the same hymn sheet, we can make incremental change with everyone talking the same language".

It is a huge mountain to climb. Do not get me wrong: there are challenges. We have different levers at our disposal, whether it be nationally, through things like the farm quality assurance scheme, or in our individual supply chains, as Dean mentioned. We have all got projects that are very much live, real and delivering benefits. We have to scale those up in order to make change.

The other thing to bring in, which Conall mentioned in his statement, is BVD. Some of the things that we are doing are not picked up in the national inventory because of the way in which the national inventory is calculated. That is one of the other challenges around making claims. The accountancy framework that we work within does not always take in all the positive aspects of what we do. For example, even on the way in which we spread slurry, the national inventory takes a broad statement that it is all done in one way and that slurry spreading is a challenge, whereas we know that farmers have invested in technology and equipment that makes slurry spreading better for the ground and the atmosphere. That is not always accounted for properly in national inventories. A huge conversation needs to be had collaboratively on that topic.

Mr McGlone: It would be helpful for us to see the document that you mentioned on the four pillars and eight outcomes or any documentation that might be helpful to us, if that is OK with you, Chair, and you, Sarah.

Ms Haire: I am more than happy for you to see it. It is publicly available on the European Round Table website. We can share that with you.

Mr McGlone: Thank you.

The Chairperson (Mr McAleer): I will move to County Armagh now, to William.

Mr Irwin: Can you hear me?

The Chairperson (Mr McAleer): We have got you, William.

Mr Irwin: I thank Conall and the team for their excellent presentation. It is similar to what many of us have been saying for some time. On the possible outworkings of the private Member's Bill, including the massive reductions in livestock numbers, has work been done to work out the possible job losses in the agri-food sector? I presume that it will be massive if that materialises.

Mr Donnelly: Thanks, William. One of our frustrations with the legislation is that there was no impact assessment before it reached the Assembly, which made it difficult for us to establish what the impact is. As I said, we have commissioned work on that. The figure that I gave for the impact on livestock numbers of 85% is a provisional figure from that impact assessment. That would then be used as the basis on which to calculate the impact on jobs.

If you look at it from the point of view of the contribution to the food economy of ruminant livestock in Northern Ireland, you see that it is huge. DAERA's report on the size and performance of the Northern Ireland food and drink industry has that ruminant sector accounting for roughly half the turnover of the entire industry. A few months ago, an Ernst & Young (EY) report was produced to establish the value of the industry to the economy. With regard to jobs, its value was calculated to be 113,000 jobs, directly and indirectly. In the presentation, I went through the ancillary services that are driven by that.

The point is that, if you remove 85% of half the sector, what do you do to the jobs market in Northern Ireland? What do you do to all those jobs? The concern is this: where are those jobs? They are in places that do not necessarily bring in FDI. They are in provincial county towns all around Northern Ireland. The quality of those jobs is also important. There is probably a perception that the jobs in our industry are not high-quality. One of the important things that the report showed is that a third of the jobs are low- or semi-skilled, a third are skilled and a third are highly skilled/professional. That is a really important point. We need all those career options in the economy, but where are they? They are in places such as Fermanagh, Tyrone, west Tyrone and south Armagh, where you do not necessarily have a Citigroup or high-tech IT businesses that give very high-quality employment. What we are most concerned about is the multiplier effect of it. I do not know whether the others have anything that they would like to add to that.

Mr Irwin: As you are aware, the Climate Change Committee was tasked with looking at the four regions of the United Kingdom — England, Scotland, Wales and Northern Ireland — and it brought forward recommendations that, it thinks, with a push, are achievable. In life, I take a common-sense approach to things, and it is important that the Committee and MLAs take a sensible approach to this. We all want to see emissions reduced, but we want it to be done in a way that does not damage and wreck our industry. I am sure that you have looked closely at the Climate Change Committee's report. Do you think that 80% by 2050 is achievable?

Mr Donnelly: No. Lord Deben was interviewed by Conor Macauley on Radio Ulster this morning, and he said that — I think that he said this to the Committee as well — he did not think that it was realistic. The approach that the committee took was that you do your fair share. The Scottish Government were given a target of 2045. Given Scotland's land mass and the fact that there is so much scope for forestry and carbon storage, they are in a good position, and that target was welcomed. There is no real issue for them, and they are well on their way to achieving it. However, he recognised, by the same extension, that Northern Ireland will really struggle to achieve its target.

Let us talk about what the fair share is. The reason that we look at this on a UK basis is that 80% of what we produce in the beef sector goes to the UK. It is therefore eminently reasonable to look at it on that basis. It was established that agriculture would have to go for 64% emissions reductions. If the rest of the UK is working on the basis of going for 64% emissions reductions and Northern Ireland is going for net zero, ultimately, agriculture in Northern Ireland will pay a much higher price to achieve net zero. Colin Breen came to the Committee to talk about the difference between the UK CCC recommendations and those recommendations at a UK level. What is the marginal benefit of going the extra step to net zero? It is 0.73% to the UK. However, the point is that this is not a UK issue or a North/South issue but a global issue, and, in global terms, that is an even more negligible figure. The point that I was trying to make in my opening statement was that it is not about us being too small. We are not arguing that we are too small and should not have to go as far because we will not matter. We are not saying that; we are saying that we should look at the difference between a realistic target and this target. We need to look at the marginal gain in terms of global climate targets and the marginal impact on our industry — we bear the brunt of it — and on the economy. That is the point that we make.

Mr Irwin: May I make one last comment on that? If we can achieve the target set by the CCC, the UK will reach net zero by 2050. We are part of the UK, so, in effect, if we can achieve that and the UK reaches net zero, we will reap the benefits from that as a small region.

Mr Donnelly: We have to play our part. We are not suggesting for one second that we should not or that there should not be climate legislation in Northern Ireland.

Mr Irwin: I understand that fully. Thank you very much.

Mrs Barton: Thank you very much to the gentlemen and Sarah for their presentation. I represent Fermanagh and South Tyrone, so, obviously, I can imagine the impact that enacting the Bill may have on the agricultural community. You mentioned BVD eradication. Can you give me a little more detail on the benefits of that for climate change?

Mr Donnelly: I will speak about it briefly and then let Sarah come in. We have made huge strides here as an industry, but we still have work to do. We have all played our part, including farmers in particular. The primary benefit is that it takes unproductive cattle off the ground. When they are suffering from bovine viral diarrhoea, they are not performing well. A lot of them stay on the ground and, eventually, may die before they reach productive age. They infect all those around them, and, even if they reach productive age, they are not good value for the emissions that they emit. BVD is still there, but we have made huge progress and have managed to eradicate a lot of it. We have improved emissions intensity. Perhaps Sarah would like to add to that.

Ms Haire: You have summed it up pretty well. It is about having healthy animals on-farm. Healthy animals perform efficiently, and we know that we can do more about that with genetics and stuff. BVD is one of those national challenges: if you have a sick animal on-farm, it adds more methane and other gases to the challenge. Every animal that we have that is sick in any way, shape or form, that is not performing to its optimal standard and that is on-farm longer ultimately emits more. BVD is just one of the examples of where we have worked collectively as an industry to solve a challenge. That is one of the best examples that we have at the moment, but other initiatives are going on around similar challenges.

Mrs Barton: Thank you; that clarifies that.

I have a question about methane and the short-lived and long-lived pollutants. You have hit the nail on the head here on the concerns around climate change. I wanted to ask about the short-lived pollutants, the number of animals that we keep on our farms and the changes that may have to be introduced to meet the requirements of a Climate Change Bill. Is more work needed to discover the benefits from short-lived pollutants such as methane gas and separating it from long-lived pollutants such as carbon?

Mr Donnelly: Dean might want to come back on that.

Mr Holroyd: Yes. It will all be about driving efficiency at farm level. That is a classic area in which economic and environmental efficiency work hand in hand. There are numerous examples around BVD and healthy animals being efficient animals. There are studies on capturing methane emissions

from an animal's physical measurements as opposed to just using various factors. Invariably, those all point to superior genetics, good feed and high health status. Various pasture types will result in beef animals and sheep animals achieving slaughter age at a younger age, and, therefore, over their lifespan, their physical level of emissions is significantly less — up to 40% in some instances. That starts to contribute to global cooling — we are back on that topic. There is a fixed level of methane in the atmosphere, so for every molecule that is generated, one is decaying from 10 years ago. If you start to reduce that, you can start to contribute to global cooling.

Mrs Barton: I understand that. Another issue that I am concerned about is the trade deal that has been done with Australia and agriculture in Northern Ireland and, in particular, our beef production. Is that not contrary to what we are trying to produce? We are trying to work towards a sensible Climate Change Bill, yet we are importing beef, and that will be at a cost to climate change.

Mr Holroyd: May I have a go at starting on that, Conall, and then you can come in? We all share that frustration. Apologies if I state the obvious, but, for a nation that cannot feed itself — I am talking about this in a UK context; it is only between 60% and 70% self-sufficient depending on the sector that you talk to — reducing domestic output on marginal land that is unfit for anything else and then topping up through importing that deficit from nations that have a much higher footprint is just madness.

The Chairperson (Mr McAleer): Do you think that it is important to amend the Bill to include a clause to prevent that type of carbon leakage?

Mr Donnelly: May I take that?

Mr Holroyd: I will just add one more thing. The irony of all this is that, in order for some of those other nations to reduce their carbon footprint, they could import from the British Isles because we start from a position of 40% of the footprint of the global average. Sorry, soapbox done.

Mr Donnelly: You are spot on, Dean. The point that I will make to you, Declan, on carbon leakage is that that would be brilliant if the Assembly had any influence over UK trade policy, but it does not. As long as it does not have influence, the only thing that it can do is to give us legislation that not only works for us as an industry but takes into account the evidence that we have presented today, which is supported by independent climate experts on methane. In addition to that, the two policy areas need to be looked at together. They cannot be looked at in isolation. For example, the concept of reduced consumption has been mentioned, and that is not consistent or coherent when looked at in conjunction with the trade policy being pursued by the UK. We have to be clear about that.

Mrs Barton: Thank you.

The Chairperson (Mr McAleer): I need to rush around the room, as the next witness is waiting.

Ms Bailey: Thanks, guys. Listening to you has been interesting. I am glad that we all agree that Northern Ireland needs to get its finger out and start to join the global movement on where we need to go. I understand the concerns in your industry, but language such as "damaging the sector", "wrecking the sector" and "wiping the sector out" is unhelpful. The Bill is trying to come up with a plan about what to do. The GWP method was mentioned, and that is a useful way to measure greenhouse gases. However, let us be clear: it does not indicate that we should leave animal numbers as they are and methane emissions will sort themselves out. GWP does not suggest that there will be no agri-emission reductions, and we should not argue for that.

It is important, of course, to take the different nature of the short- and long-term GHGs into account. In evidence to the joint Oireachtas Committee in the South, scientists unanimously agreed that a split-target approach, as used in New Zealand, should not be used and is not an effective way to get the combination of action from all sectors.

I will pick up on the implications and mitigations of climate change. We have known for a long time, and, during recent years, Northern Ireland has knowingly increased agri-food production and livestock numbers. In fairness, the businesses that you represent have seen huge economic benefits from that strategy. During those years of expansion, what mitigations, conversations or actions have you taken in tandem to create a sustainable future?

Mr Donnelly: I will pick up on that first of all. There is a misunderstanding. Cattle numbers in Northern Ireland are broadly the same as they were in 1990; in fact, the numbers are 1% lower. Sheep numbers are 30% lower. We have not had an expansion period for ruminant livestock numbers. Other sectors have grown significantly. I will pass across to Dean or Sarah for the second part of your question.

Mr Holroyd: I am happy to go first. I will not say that efficiencies cannot be made. I am not saying that there cannot be significant reductions in greenhouse gas emissions. I am saying that you can achieve that without taking draconian action such as culling the herd. There is evidence to support my statement, and I am sure that Sarah will talk about similar activity in her organisation. We have two long-standing demonstration farms — one in Ireland and the second in the UK — that point to how those efficiencies can be driven through using higher-performing genetics, high health status and different types of grass lay. We have a long-standing genetic enhancement programme, and we are starting to see the efficiencies and benefits of animals that can be slaughtered at a younger age. In Northern Ireland, we have an integrated piece of activity with Dale Farm about connecting the dairy herd with the beef herd to drive efficiency. We are doing wild innovations, work on wearable technologies and the conversion of methane to water vapour. I really do not want anybody here to think that we are doing nothing and thinking that there is nothing to be done, because that is not the case. We recognise that, despite all the accounting that we talked about, there are still significant efficiency benefits to be driven. Our point is that you can do that without having to reduce numbers, and, if you can drive that efficiency, you free up land that can be reappointed to other elements such as rewilding, tree planting etc.

Ms Bailey: Thank you.

Ms Haire: I echo some of that. From the point of view of our business, I could almost say exactly the same as Dean. We have a demonstration farm in Ireland where we are looking at the suckler herd. We have integrated beef systems and are looking at how we can control the genetics as much as possible from the point of conception through to consumption. We are not starting from here; we have been doing this for a number of years, even working with the likes of Teagasc in the South, advisory agencies and academic institutes — Queen's, for example, and CAFRE are leading various projects. It is all building up to making farmers more efficient and, hopefully, more profitable while contributing less impact environmentally.

Ms Bailey: I want to look at those economic [*Inaudible owing to poor sound quality*] and ask you about that —

The Chairperson (Mr McAleer): OK, folks —

Ms Bailey: Chair, I know that we are pushed for time, but this is really important. Have you guys developed any economic models that would make farms in Northern Ireland, rather than the industry, sustainable? We know that the global finance system is moving towards supporting and investing in net zero businesses. We know that Microsoft, Morgan Stanley, Sainsbury's, Walmart and all those big global companies are setting net zero targets. We know that our food is traded through big supermarket chains, for example.

If Northern Ireland does not meet net zero and we are going for the CCC fair share model that is based on the UK but not Northern Ireland being net zero, could that model disproportionately support the intensive sector at the risk of SME farmers? Have you done any economic modelling on whether we will be able to access FDI, for example, if we do not hit net zero? How would that impact cross-border trade, particularly the dairy sector and where the agri-food sector works cross-border?

Mr Donnelly: There is a lot in that. Maybe I will pick up a couple of points. You mentioned that the CCC target could somehow disadvantage smaller family farmers and lead to more intensification and more meat coming from the intensive sector. I would argue that the situation is the reverse of that. Ruminant livestock in marginal lands are the first sectors that will be impacted. The immediate impact will be there, because it is marginally less profitable for those guys to produce beef on the hills. Those guys are the first to say, "Get out of this", but what will they do instead? Will they build a poultry house or whatever? That is the question.

Is the production of less beef or red meat an advantage and a potential opportunity for the more intensive sectors that produce white meat? An important point to consider is what happens as a result of the displacement of red meat and of marginal land. Cattle that graze on the side of a hill in west

Tyrone or Fermanagh or somewhere else will be impacted by this first, because that is the less profitable end of the industry.

Do Sarah and Dean want to pick up on the other parts of the question?

Mr Holroyd: I will add one point of clarification, Clare. You talked about a lot of organisations and their commitments to net zero. I am not familiar with them all, but the commitments of those with which I am familiar in the grocery sector relate to their own operations; in the jargon, that is scope 1 and scope 2. I am not demeaning that because it is still a substantial commitment. They do not extend to being net zero for their entire supply chain. I cannot speak on those organisations' behalf, but I assume that they inherently understand the challenges associated with that when they source things globally. They have targets for their entire supply chain, but, to be clear, they are not net zero targets. To put that in context, we have talked a lot, understandably, about why it has been livestock-related. As ABP does it — our operation is net zero — that would be only 5% of our total footprint. It is important to understand some of the small print associated with headline claims.

The Chairperson (Mr McAleer): OK. Folks, we really need to move on, because our next witness has been waiting for over half an hour. Harry, were you looking to come in?

Mr Harvey: Yes, Chair. Conall, Dean and Sarah, thank you for that interesting, sensible and realistic presentation.

I have one wee question. You said that, if we went from 100% net zero to 82% — that is, going from 2045 to 2050 — the overall difference would be 0.79%. Is that what you said?

Mr Donnelly: Colin Breen said that the additional benefit of reduced emissions would be 0.73%.

Mr Harvey: If that were the case, the number of agri-workers that net zero would displace or effect and the reduction in production would be colossal for that minimal amount, would it not?

Mr Donnelly: That is right. As I said, we may have further information on the exact impact. We have commissioned an impact assessment, Harry, but we have not got it yet.

Mr Harvey: That impact assessment needs to be seen for that small amount. That is good, and I look forward to seeing it.

The Chairperson (Mr McAleer): Philip, do you want to make a proposal before we move on?

Mr McGuigan: The evidence today has been interesting. On Harry's point, it would be important for any impact assessment to take account of the impact of climate change with no mitigations on the industry. I understand that the conversation about the Bill is predicated on the outcome of the Conference of the Parties (COP26). I imagine that there will be much stricter requirements on all nations across the globe as a result not just of that but of consumer demand. Impact assessments need to factor in consumer demand. A few months ago, the supermarkets on these islands took a stand against Brazil, in particular, on some of its products. Places such as here that may have been ahead of the curve on some environmental and climate change practices will be able to meet a growing consumer demand as time goes on. I wanted to make that point.

My specific questions have been asked by other members. My key point, Chair, is on the subject of methane. I was surprised at some of the evidence that we have heard on methane. Methane needs to be tackled. It does not last as long as carbon in the atmosphere, but it is more potent. When we talk about global warming and the fact that we are almost at the 1.5°C threshold, reducing the temperature is key. My understanding is that methane is particularly potent for global warming. From a cursory glance, I found a UN report from about a month ago that says exactly that. I suggest that we detail the Assembly Research and Information Service (RaISe) to do specific research on the issue and the impact of methane and that we get evidence from additional experts. It is important that we get things right and that we are up to date with the science on methane. In light of what we have heard today, that would be important work for the Committee.

The Chairperson (Mr McAleer): Thank you, Philip, for that suggestion.

We will have to rally on to the next session. The Dairy Council representative is waiting. Conall, Sarah and Dean, we appreciate your taking the time to meet us this morning. It has been a comprehensive session, and you have provided us with a lot of food for thought. Thank you for that. We will be in touch with you again.