HOUSE OF LORDS

Environment and Climate Change Committee

Uncorrected oral evidence: Methane

Wednesday 24 April 2024

9.45 am

Watch the meeting

Members present: Baroness Sheehan (The Chair); Baroness Bakewell; Baroness Bray of Coln; Lord Duncan of Springbank; Lord Frost; Lord Giddens; Lord Grantchester; The Earl of Leicester; Lord Ravensdale; Earl Russell; Lord Trees; The Duke of Wellington; Baroness Whitaker.

Evidence Session No. 5 Heard in Public Questions 84 - 98

Witnesses

I: Martin Lines, Chief Executive Officer, Nature Friendly Farming Network; Tom Bradshaw, President, National Farmers Union (NFU).

Examination of witnesses

Martin Lines and Tom Bradshaw.

Q84 **The Chair:** Good morning everyone. Welcome to the House of Lords Environment and Climate Change Select Committee. This morning we are taking evidence for session 5 of our inquiry into methane. This will be our second section on agriculture. It will be split into two parts. The first panel of witnesses will be farmer representative bodies and in the second hour we will hear from representatives of the Environment Agency. I warmly welcome our panel of expert witnesses today. Thank you very much for making the time to be with us.

I remind all attendees that the session is webcast live and will subsequently be made available to view via Parliament Live TV and the parliamentary website. Also, a transcript will be taken and made public. Witnesses will have the chance to review it and made any necessary amendments, with the agreement of the committee clerk.

Members should declare any relevant interests the first time they speak. Can our panellists now introduce themselves?

Tom Bradshaw: Good morning. It is a privilege to be here. I am the NFU president, representing 46,000 members across England and Wales.

Martin Lines: I am a farmer in Cambridgeshire and chief executive of the Nature Friendly Farming Network, a network of farmers across the whole of the UK.

The Chair: Thank you. I refer to my register of interests as per the parliamentary website, and I am a director of Peers for the Planet, which is an unpaid role.

My opening question is: what level of awareness is there of methane emissions from livestock in agriculture among farmers and landowners? In your responses, could you also cover where they get their information and who is responsible for getting that information to them?

Tom Bradshaw: I suggest that there is a growing level of awareness. There are still a lot of questions about the science. That is an area that many farmers are asking about—"Where is the evidence that supports these processes, these decisions?" That is probably a question which we will get into in more detail.

When we look at the responsibilities, as a member organisation we have an ability to communicate with our members about this. However, there is definitely a role for our levy body, the AHDB, and for government policy. The Government's net-zero strategy highlights that the ELMS policy will be a key part of the delivery mechanism. At the moment there are areas which could be significantly improved within the ELMS policy which would help that baselining and that level of understanding. I am a big believer that if, as farmers, we are not measuring it, we are probably

not managing it. The first step on this journey is how we get farmers engaged in the process. A big part of that will be a real role for policy to incentivise the baselining and ensure that the information collected is as accurate as possible.

The Chair: So where do they currently get their information and who is responsible for getting it to them? Are we saying that they need evidence about basic climate change or the efficacy of some of the remedies that they are hearing about?

Tom Bradshaw: If you start with climate change, there are still some, as there are in wider society, who do not necessarily believe that it is happening. I would say that climate change is one of the biggest threats that the industry faces, so we must recognise that farming has a key role to play in how we mitigate it.

When I talk about metrics, there is a big debate about whether GWP100 or GWP* should be the methodology that is utilised. We are really trying to stop global warming. The warming impact of the emissions is what becomes the really important part and, if we are not careful, we could end up utilising the wrong metric and end up 15, 20 or 30 years down the line not having solved the issues that we are trying to deal with. That does not suit anybody. Therefore, the use of the correct metrics is essential.

As to where farmers are currently getting their information, there is such a split. Some will be using social media platforms, some will be hearing the news, some will be engaged with their levy body. But absolute clarity around what is expected from the farming industry will drive that mindset change.

Some have been investing in their soil management and different systems of farming. Others are far more dubious about the impacts of that. The science in carbon storage is unknown and is another key part of this transition. I know that we are focused on methane, but absolute clarity from a policy perspective about what is expected from farmers and the metrics and data that they need to provide is key.

The Chair: Just picking up on the GWP100 and the GWP*, there seems to be an awful lot of confusion. It would help to clarify that. If we were to move to GWP* it would put a huge amount more emphasis on earlier action on methane.

Tom Bradshaw: We call for dual accounting because we believe that GWP100 misrepresents the role of methane. However, if you move to GWP*, the short-term benefits of reducing methane are amplified.

On warming, as long as we are not increasing the methane in the atmosphere from the livestock units, there is no net contribution to warming, because it is a biogenic process and looking at that process is essential, because there are potentially some really perverse outcomes if we are simply driven by single metrics, particularly for our grazing

livestock. We could end up moving to systems that are very intensive if we look at single metrics and use the wrong measurement, rather than at more holistic management systems and the role of grazing livestock.

The Chair: Excellent, thank you.

Martin Lines: Thank you. As Tom has explained, the understanding is very varied and it depends on your system. Are you an intensive system that is focused a lot on livestock production, or an extensive grazing system dependent on your location in the country? Across the UK, we are seeing government policy drift in different directions and seeing different targets as different Governments set different implementation targets. That makes it very complicated for many farmers to understand a clear narrative of what they need to do and where they need to go.

Many supply chains are now encouraging their producers, particularly in the diary sector, to increase additives and use new products to reduce methane emissions but, again, farmers are unsure of the science. How it was measured in a lab is very different from how it is done on a farm and in a field. What are the complications or unexpected consequences of adding additives into feed where you are mainly eating grass? If you are adding feed into an enclosed herd that is fed only a combined ration, that is more stable.

Many farms are looking at using livestock in a more extensive system, particularly on an arable system where they are going to be taken and put into the fields to eat grazing cover crops and green manures. So it is very complicated and farmers are very disillusioned about what they need to do.

The evidence says that methane from livestock emissions never went up between 2008 and 2018. We already have a baseline, so are we trying to focus on the right thing? Are we not looking at the overall carbon reduction within the system?

The Chair: Where are you getting that figure from?

Martin Lines: I can give you the briefing paper later.

Many farmers are getting it from their feed agents, from their vet med supply chain and much of it from the wider industry. As stakeholders, we have a role to communicate clear messaging on why these measures are important. Also, we forget about changing diet slightly and reducing meat consumption overall and where that meat comes from globally to feed the UK diet.

The Chair: You are a membership organisation—do you formally disseminate information such as this to your members?

Martin Lines: Yes.

Q85 **The Duke of Wellington:** I apologise for arriving late, I did not realise we were starting earlier. I declare my agricultural interests as detailed in

the register.

My small question is based on what I have just heard about the additives that can be put into animal feed to reduce methane—and I understand that it is difficult to do this in extensive grazing systems. Can they be in the form of a lick that one puts out on a hill or in a meadow so that the animal will go and lick the tub in the way that they do for other essential minerals that are added to feed?

Martin Lines: They possibly could, but you need to give the right amount of mineral to the right animal so it has to be in their diet in a combined way. Some animals will not lick the block and some will. It is about making sure you get the right amount to the right animal at the right rate.

The Chair: Thank you.

Q86 **Lord Trees:** Thank you, witnesses, for giving us your time. To what extent do methane emissions vary between beef and dairy enterprises and between different ways of handling slurry and manure and so on? Are different approaches necessary in those situations? Can you also outline to us what methane reduction practices are currently in place across these different areas of farming?

Tom Bradshaw: There is huge variability within each of those sectors, so you cannot necessarily suggest beef production has a different impact to dairy production. There are hugely different feed intakes and more than one output when you are looking at dairy. You have milk as well as, potentially, a meat product.

So there are different outputs. In dairy, you have everything from the fully housed system to the very extensive system. You have exactly the same within beef production. So it is very difficult to generalise and say that any one system has a lower impact.

However members decide that they want to farm, the best will do the job incredibly well, whereas the poorer performers will have a much higher carbon footprint per unit of output. The variation between top quartile and bottom quartile producers in those systems is very dramatic. So the lessons learned from within those systems could have huge implications.

When we focus on what we are doing already, one of the things that we have not been doing is selective breeding genetics for methane reduction. That is an area of real interest. I met Beef + Lamb New Zealand two or three years ago and in New Zealand they have already reduced methane emissions by 10% through genetics alone. So genetic development will drive some of this forward as we start genetically selecting for lower methane output.

I have already mentioned single metrics and we have to be very careful there. It may be that there are outcomes which are not desired for the other traits we are choosing those genetics for. It is going to be complicated, but there is a lot that can be done with breeding.

We must also look at some of the very "boring" aspects that drive productivity and efficiency, because I think disease eradication is absolutely essential.

The Chair: We will have technology as a fuller question later, so I think the different methods of reducing methane emissions among livestock will be covered then. Can we just concentrate on the extent that methane emissions vary across the different sectors, as Lord Trees asked?

Tom Bradshaw: There is huge variability within the sector.

The Chair: I will go back to Lord Trees. I do not wish to hijack his question on slurry management.

Lord Trees: Can you say a bit about slurry management and waste? Although we have talked about that quite a lot in this committee, I am interested in the reduction practices you currently are using and where you see the potential to improve.

Tom Bradshaw: There are some very interesting slurry management techniques. Some of the methane capture techniques can be used to turn it into energy and electricity and companies are doing that. But if 15% to 20% of emissions come from the slurry store, the majority comes from the front end of the cow, rather than the back end.

There is no doubt that there are benefits there and this is a neat part of a circular system. If we can incentivise the adoption of methane capture, it becomes really interesting as a driver of this circular system. I think further technologies can be adopted there.

It really comes from the drive for efficiency, with whichever system of production you have chosen. We could have multiple dairy farmers here who would swear blind that they are right but they will be doing completely opposite things within their farming systems. Some will be completely grazing-based—5,500 to 6,000 litres—while others may be fully housed at 12,500 to 13,000 litres. The fully housed system can capture all the methane. You can scrub the air and do a lot within that system. So trying to focus on systems is very dangerous.

Martin Lines: Livestock systems are very diverse across the UK in size and shape and form. Looking at the management and the additive side, Scotland is not going to do anything until 2027 within its farming schemes about encouraging additives. But we can have a really easy win now as research shows that better slurry management and reducing methane emissions by as much as 80% will give a 4% quick reduction.

We need to be investing in the right areas in farms and managing our slurry better with acidification, better storage, better animal waste and biogas. A contribution will be greatly achieved by investment into the right areas. If we can get action now, we are not waiting to see what the additives and other measures can do.

I caution that we do not know what the additives do to the slurry, the soil or the manure when it comes out of the back end. Will it improve things or will it make things worse? The research has been done at the front end and on the gut but not on the effect on what is coming out of the back end of the animal and how we manage that manure.

The Chair: So we need more research?

Martin Lines: Yes, but on the farm, in field systems, not in labs. We have to get this understanding, so farmers will then take it up and understand it rather than seeing it as a lab-based process.

Q87 **Lord Frost:** I declare my interest as usual as an unpaid trustee of the Global Warming Policy Foundation.

You began to hint at this in the first answer, but to what extent do you think that farmers and landowners see methane reduction as a priority compared with everything else on their plate? What do you think they are hearing from government on this subject? Is the messaging working or effective?

Tom Bradshaw: Starting with the second part, no, it is not effective. I would not say that there is a clear, strategic priority within current policy that really drives an understanding of the emissions within your farm business. There is a big gap there that should be filled and we are calling for it to be filled.

Baselining where we are now is essential in order to demonstrate how we have improved and where we have got to. There is a big gap in government policy at the moment. I am just trying to think back to the first part of your question.

Lord Frost: It was to what extent farmers and landowners see methane reduction as a priority compared with everything else.

Tom Bradshaw: Where it is seen as a priority, it is because it has been driven by the processor. There are examples within the milk supply chain in particular, and more recently some of the linked beef production systems, where the meat process has an involvement through the supply chain. There are examples where there are incentives for reduction towards net zero. Some are more methane-specific, but generally it is net zero as a whole. Obviously, methane has a role within that but, where there is a better understand, it is because it has been incentivised through the supply chain. However, at a government level there is a clear gap.

Martin Lines: Many farmers are not incentivised at all to worry about it. They are concentrating on keeping their business profitable in a changing climate which is becoming increasingly challenging. There are no measures or matrix that they have to report on, so why value it? It is only when the supply chain comes in and asks for measures, matrices and encouragement. We need to see that reward come from the supply chain as well. Additional costs are being put on the producer, but there is

no value for mitigating the scope 3 and other emissions that the supply chain will take responsibility for.

Unless we measure it, we do not know what we are doing. Unless there is a price to it, we will not value it. As a farmer, why should I take additional costs or burdens on to me for society to benefit? We all want to do good things, but I've got a business to run. Many farmers are saying, "At the moment I'm not worried about it, I'm going to try to keep my business running".

Q88 **Lord Frost:** Moving on from this a bit, to the extent that farmers do think about these questions—and I totally understand why they might not—are the solutions likely to be technological, in one form or another? Are farmers worried that we may end up with solutions such as insisting on dietary change, actual reduction of numbers of livestock—the sorts of things that have provoked protests elsewhere in Europe? Is that at the back of their minds, do you think?

Martin Lines: Are we focusing on the right thing? Are we having tunnel vision that methane is the only thing that we should focus on, rather than all the other things that farm businesses have the opportunity to support? Methane is a short-term gas. It is really potent, and we must think about where it comes from, but livestock is not the only thing which is emitting that gas. If we only focus on that, there may be unintended consequences that cause harm in other areas, for biodiversity, climate and other things. We need to look at the whole picture and that is where farmers may get engaged, where they look at it in the round and think about how they drive their whole business forward and reduce all their emissions.

Methane has some short-term wins, but we need those long-term goals and should not divert attention away from reducing our carbon emissions and sequestering carbon within our farm landscape. Farmers have a huge opportunity to deliver solutions for the climate and for biodiversity through food production on their landscape. We need to ensure that is always joined up.

Tom Bradshaw: There is a real danger that we end up in a place where we export our production overseas. I have a huge concern about this. An "out of sight, out of mind" approach is not acceptable. Climate change and global warming are global by nature and not something that we can solve as an island, but we could make ourselves believe that we are living in a green and pleasant land while having simply exported those emissions to other parts of the world.

Therefore, trade policy has a critical role to play in this. The threat to livestock numbers is because we may well be undermined by some of our trade deals rather than because we are not efficient producers. We know that the Climate Change Committee articulates that our red meat production is less than 50% of the global average when it comes to carbon footprint. That is something which we can do very well. Even if there is dietary change here in the UK, that does not mean that we

should produce less. It means that we should look to export that to countries that value the traceability and provenance of British production.

Without our carbon border adjustment mechanism—at the moment those imports do not carry that carbon footprint with them—that is a real danger to UK agriculture and livestock agriculture.

The Duke of Wellington: The exchange has been most interesting, but I still worry that agriculture has not really contributed to global warming over the last 200 years, in terms of methane emissions, compared with industrialisation, landfill and all the other elements of development of human society. Has the NFU ever done any research on the historical levels of methane emitted by British agriculture 200 years ago versus the present state?

Tom Bradshaw: No. The research that we have is based more on government statistics around livestock units. With the fall in livestock herds, which peaked in the 1970s, at the moment "UK Agriculture PLC" is not a net contributor to warming.

That does not mean that we cannot do better or that we cannot mitigate our impact, but, when you look at the historic numbers of livestock units that we had, we are far lower now. Particularly with the GWP* metric, there is not a contribution towards warming today from our livestock because of the short-lived cycle of methane.

The Chair: Could we have a reference to that data?

Tom Bradshaw: We can definitely provide that.

The Chair: It would be essential to have that. Thank you.

Martin Lines: We need to look at the UK context and the global context. The UK context is that we have been fairly stable for a number of years. We have actually seen a decline in numbers overall while everyone else's impacts are going up.

Q89 **Lord Duncan of Springbank:** You mentioned that a level playing field would be affected if you ended up outsourcing production overseas. We often hear talk of a carbon border tariff or tax. There is no reason why you could not have a methane border tariff too. Would you support that to level the playing field?

Tom Bradshaw: You are referring, I think, to a split-gas approach, separating methane out, as they have done in New Zealand. There comes a point where we must put our money where our mouth is. If we believe the evidence that we are in that top quartile of production globally, why would we not end up supporting something like that?

However, I go back to this point that single metrics are very dangerous. They could drive us to a system of production that is not what our customer wants. There are examples in our poultry sector, which are not relevant to methane, where we go to a different system of production

which has a 21% higher carbon footprint yet is perceived to be higher welfare. What does our customer want, and do we give them the choice, or is it that climate change is so important that the decision must be taken to go for the lowest footprint for that production system?

When we get on to wider biodiversity, methane probably would lead us to an intensification, particularly with the science of carbon sequestration not fully understood. You could end up moving more and more intensive, but what does that then do for some of our bird species? Grazing livestock has a role to play in providing that habitat, which we risk forgetting.

Martin Lines: I fully support level playing fields and carbon border and biodiversity tariffs. Why are we importing products and causing harm in other places while championing the standards that we have here? If it is that important, legislate for it so we all play an equal game, wherever the product comes from. We could also have an export opportunity then, because we have some products which have a better standard than those from other places. If we are to eat a diet of high standards, let us celebrate that and make it an opportunity for farmers as well as a challenge.

Q90 **The Earl of Leicester:** Good morning, panel. My interests on the register are that I am a landowner and farmer in Norfolk, with a suckler beef herd and some sheep.

What both of you are saying is very interesting. A lot of this is confirming what we heard last week from people like Professor Frame in New Zealand on genetics and Professor John Gilliland of ADHB, from Northern Ireland. I asked my own herdsman what he thought of methane. He is a Yorkshireman who has dealt with cows all his life and is brilliant on welfare. He said, "Yes, we are beginning to get an understanding of it, but what can we do with an extensive herd that is outside for eight months of the year and inside and, for animal health reasons, in a nice, fairly well-ventilated shed that will not be able to collect methane"?

I think that I know the answer to this question already, but what information is reported by farmers and landowners about methane reduction practices? I suspect that on the livestock front it is probably not a great deal. The artificial nitrogen fertiliser that you use on your land you can get from the manufacturers who are using the Haber–Bosch system.

What information are farmers reporting back, who collects it and for what purpose? Martin, you have near-enough answered this question.

Martin Lines: There is no collection. Some people have interests and supply chains are starting to look at the theoretical science—in a lab it works this way so in a farm it will work that way—but that is not grounded and the whole system is not approached from the farmer's point of view. What is the value to a farmer of collecting that data?

Tom Bradshaw: At the moment, it is completely voluntary until the point where your supply chain demands that information from you. There

is a very large dairy co-operative that has been collecting this information for several years now, but not specifically around methane. It is much more around carbon in general, rather than specifically around methane.

The Chair: We are talking specifically around methane.

Tom Bradshaw: There may be elements within there where they are asking for information, but it is much more broadly the system of production. This comes back to some core principles, where farmers need to trust the ownership of the data. There needs to be harmonisation of the calculators so that there is belief and trust in the information that is collected, because you could use different calculators today and get different answers, which is again very strange. There is an industry solution required for that data ownership and the need for the development of a data storage system. There are some very early-stage conversations taking place there but probably a role within that for government as well.

We must remember that farming is made up of a lot of small businesses. If we are not careful, we will simply provide this information up the supply chain and lose any hope of capturing any value from it. The pressure on our farmers today, the profitability, is incredibly challenging. Unless there is value captured out of this, it will make food production in this country very difficult, so we need to look at how we can recognise and realise the value from reducing our emissions, which we all have the ambition to do.

The Earl of Leicester: Methane is a short-lived gas. If we have the same numbers of livestock in this country, which is broadly where we are, with the circular system of methane in the carbon cycle atmosphere—cow, grass, soil and back up again—are our methane emissions from livestock steady, do they remain the same?

Tom Bradshaw: As long as our livestock units are stable, then yes. And as I have already, said, they have fallen. That is not to say that we cannot improve and drive efficiency but, as to whether they are contributing to warming, if they are stable, then no.

Martin Lines: We also have to ask whether we need to keep the livestock numbers the same. Arable systems need manure. Fertiliser is better out of the bum than the bag. We need to put the fertiliser back in the field, from livestock and from ourselves. Much livestock has moved to the west and will have to move back to the east—or the manures will. We need to think about how we handle it and the numbers. We are seeing significantly more sheep in East Anglia this year than there have been for years. So they will move about, but it is about not disadvantaging other businesses.

The Earl of Leicester: You both made the point very eloquently that biodiversity gets lost in this argument of methane and carbon production.

Martin Lines: You have to look at it as a whole, at what that animal's role is in the landscape and the priorities that it delivers for biodiversity. If we are having flood meadows and other things, how do we use an animal as a management tool as well as a food production tool?

Q91 **Lord Giddens:** Which new methane reduction technologies are most technically feasible at this point that are low-cost and market-ready? Are there any risks or unintended negative consequences associated with technologies and practices such as feed additives and slurry management?

Martin Lines: A number of products online have shown benefits in a lab situation, but there has been no real evidence on the farm of whether it works. It will disadvantage pasture-based systems. Many people want livestock systems to be using the landscape and it will drive intensification, because it has got to go into a total feed ration. The right amount must be put in for all animals. I have not seen any scientific evidence of what it really delivers properly on a farm-scale system, just a lot of evidence of what it should do, but we do not capture it on a farm.

On unintended consequences, I cannot yet find any research on what it does to the slurries, what it does for the dung beetles and everything else, the biodiversity where the manure ends up. We need to think not only of what we put in the front end but what comes out of the back end and what the unintended consequences of those products are.

Lord Giddens: I am glad to hear you mention unintended consequences, as they are really important in life generally. We have to think of those, of course, but it is hard because by definition you might not know the unintended consequences.

Martin Lines: We will not know those consequences for years. Many of these products will not be coming online for a number of years. There are other things that we could be doing to reduce methane emissions from other areas, within slurry and other industries, which could have speedy action now. We have got to accept that methane is a circular gas, so let us tackle what we can now, at pace.

Lord Giddens: Exactly, pace and scope. We have to cover the whole country.

Tom Bradshaw: When it comes to methane additives, some will be made available in the marketplace, but I agree with everything that Martin said about the need for science and evidence of any longer-term consequences. We must be careful not to see them as a silver bullet that is ready and coming to save us today. There is a challenge there.

I take us back to some of the really good animal husbandry points that we will overlook if we are not careful. Disease eradication is a crucial part of how we reduce the emissions from our livestock systems. I am particularly thinking about things like bovine TB, but then we have bluetongue disease. Will there be a vaccination available, who will pay for it, how will it be rolled out? Making sure that we recognise that there are

things already within our control which will drive the efficiency of the sector or have alternative consequences will mitigate methane. Using those to the best of our ability is essential in enabling us to reduce our methane emissions.

Genetics is another area. We are already seeing people looking at driving genetic development to mitigate the effects of methane production. These are things which should not have any negative impact on production but will reduce the footprint of those livestock units. These are things that are within scope already and do not necessarily need scientific solutions.

Lord Giddens: Farming is well placed, because it has changed fundamentally in the last 30 or so years. Large numbers of people used to work in farming. Now only a tiny proportion do. That is all because of mechanisation, so farming is not really traditional, it is very geared to technologies, which might create a positive environment for further innovation, which would help with these wider issues and benefit farmers too. I find it amazing. Most of the population through the whole of human history worked in farming. Now only about 1% or 2% do. I find that completely extraordinary. It is a basis of mechanisation and learning, so farming is far from being the static thing that people portray.

Tom Bradshaw: We have had key performance indicators that we have been selecting our genetics for, but methane has not been one of them. We have seen huge genetic improvements over the past 20 or 30 years, but not selecting for methane itself. That is what the New Zealanders have started doing. They have started to see some real progress because they are using genetics. As we start to select for methane as a key performance indicator, that will drive the change.

Q92 **Baroness Whitaker:** I want to explore the reasons why farmers do not implement methane reduction measures. Both Mr Bradshaw and Mr Lines have mentioned a lack of clarity in expectations of farmers and a lack of authoritative, clear education. Is it possible that, even if those two were improved—it would be interesting to hear how you think they might be improved—some farmers would still not be able to cope? What is the range of barriers?

Martin Lines: It is about understanding what we are measuring, what the value to farmers is, why they should really care about methane—many do—and what the effect is on their business, because they are running businesses. It is also about clarity across the UK. Schemes are happening in Northern Ireland and Scotland that are driving different outcomes through different incentivisation payments. In Northern Ireland, a headage payment is made to shorten the slaughter date from 30 months to 24 or 26 months. Intensification is increased to reduce the period of methane emissions. We also have a headage payment scheme coming in in Scotland to incentivise additives. We need a level playing field that works for all farmers across the UK, but it is about having that measure that needs to become a standardised process so that all farmers value it, care about it and deliver it. However, it should not be a cost that

is put just on farmers. Farmers are having to carry ever more regulation and cost, and it should be balanced up through the supply chain. It is for all of us to benefit from; costs should not be pushed just on the farmer.

Tom Bradshaw: There is not that clear incentive. The mindset change would be, "How do we put a value on methane?" You do that by incentivising the adoption of reporting. It will not just be methane but carbon in general, but if we start to incentivise the use of that carbon calculator, we start putting a value on why farmers should be interested in this. There will still be questions about the science. Those are questions that we need to clear up, and there is no simple answer, but the science is essential. If there is a challenge and there is not trust in that science, trying to take those in the industry to a place where they believe this is the correct action will be very difficult. The science becomes essential. The science of carbon sequestration cannot be delinked from methane, because the role of the ruminant in sequestering carbon is essential. We need to understand that link, otherwise there is a real danger that we think just about methane and not about the circular system, which is a crucial part of it. It goes back to incentivising the adoption or the reporting of that data, and that should be driven by government.

Baroness Whitaker: "Incentive" sounds to me as if you are referring to government action. Can you say exactly what you think the Government ought to do to address those barriers? Perhaps you could extend "government" to the sector partnerships that it works with. I presume that the NFU puts out a lot of information. Even if farmers are a bit jaded with government instructions, I am sure they pay attention to what the NFU and the other sector organisations say. It is about the whole picture. What should these incentives be and how should they be communicated?

Tom Bradshaw: Let us be frank: when I talk about incentives, I mean cash. We have a legislated net-zero target of 2050. Within the legislation, ELMS is referenced as a key delivery mechanism. I still believe that policy within ELMS is not clearly targeted at net zero. If we are going to deliver these ambitions, we need to understand where our baseline is as quickly as possible. I would be paying farms, as they are going to do in Scotland and, I think, in Northern Ireland, for the adoption and use of carbon calculators. We then need a central database that is trusted by farmers to utilise and store that data. Then we can start to really make progress, because we are managing the issues and identifying where we can improve. For me, it is about the baselining of carbon within the business, and methane will play a critical role within that.

Martin Lines: This is not just for the Westminster Government, as the UK and England, but for the devolved nations. It is about having a standardised measure and framework, and work across all Governments. It is also about local government, supply chains and other actors. The supply chain needs to take some responsibility within this and add some value. Government has a good role to play in putting in place a legislative framework, measures and matrices, plus some incentives, but it will not

be able to pay for everything. We need the supply chain and the consumer to contribute towards those measures that farmers are going to deliver. If not, there will not be enough cash there to do it.

It is about making sure that government across the UK puts in the right standardised framework and measurements and incentivises farmers, through cash for some of it. But also, if we measure it, we can get reward for it, or we can make changes. Many farmers are not doing carbon calculations; they are not thinking about their carbon and methane emissions. We could put that into a framework and energise the whole industry to think about its emissions and drive in the right directions with a matrix of measurements that we can benchmark one another on. It then becomes like what we do for crop yields and livestock management, with targets for improvement that the whole sector across the board, including government, can champion and deliver.

Baroness Whitaker: That sounds good. We have learned that, last October, Defra said that it planned to incentivise the uptake of high-efficiency products—I suppose that is mainly feedstock—once suitable products entered the market; I think that some are already on the market. Have you heard anything about Defra's plans?

Tom Bradshaw: The Minister had a round table about this some six weeks ago. I was not at it, but action is definitely taking place around how this could be adopted.

Baroness Whitaker: Were any timelines provided to you?

Tom Bradshaw: No, as I said, I was not at the round table, but I know that there was such a round table.

To come back on a previous comment made by Martin, one thing we need to understand is whether the private sector is going to reward the reduction of carbon, or do we think it is going to be the public sector? Or is it some of each? Understanding where those incentives are going to come from and where those levers are going to be pulled is essential in driving the reduction.

The Chair: I think we have moved comprehensively on to the questions still to come. Let us move on to Baroness Bakewell and then Lord Duncan. We are up against the clock.

Q93 **Baroness Bakewell:** I can see Lord Duncan is waving. What are the barriers? How do the Government incentivise farmers and landowners to adopt these procedures? We mentioned money, but there has to be more than that. We have spoken about different schemes in Ireland and Scotland. Do people know what is happening in other parts of the country? Is there a co-ordinated document that sets out the options that people have when they are invited to contribute to this strategy?

Tom Bradshaw: A co-ordinated framework across the devolved countries would really help. If you are meat processor, you do not buy from one side of the border; you buy from both sides. You will therefore

want to understand what your whole supply chain is doing; you want to understand what is happening not just in Scotland or Northern Ireland but in England and Wales. A co-ordinated framework will be essential. If it is not delivered at a government level, it will be done at a processor level and then there will be duplication.

Baroness Bakewell: Who would you hold responsible for that?

Tom Bradshaw: There is a role for the English Government to work with the devolved nations to develop that framework. We are doing it with the farming unions—we are having frequent conversations—but there is a role for UK government to look at how that framework can be developed.

Martin Lines: I think it has to sit with the UK Government. That is the overarching government and regulation that we have across the UK. And we have got to have all devolved Governments in line. As farmers, we need to see what the equalness is across. We are now seeing disadvantages for some, depending on whether they are north or south of the Scottish border. Yet those livestock are going into the same market and the same supply chain. It becomes very disadvantaged for different farmers, so it is about that standardisation and having a standardised measure, reporting and value to methane that is recorded.

Baroness Bakewell: What is the barrier to that happening?

Martin Lines: Not standardising across all devolved nations. We are seeing policy change because agriculture Acts are different in each part of the UK and their priorities are slightly different. Some of that is through politics, because Governments want to shape things differently and the narratives around that, but we should just say, within these Houses, that we have a UK framework and that is what needs to be delivered.

Tom Bradshaw: We must respect devolution too, though; it is very dangerous not to. Agricultural policy is devolved and we must recognise that. It is easy for us to sit here and say that there needs to be an overarching framework, but that becomes more difficult because of the devolved nature of agricultural policy, and it is dangerous not to respect devolution.

Baroness Bakewell: Do you anticipate running into barriers to such a policy?

Tom Bradshaw: Yes, because—

Baroness Bakewell: Farmers are very independent. Will they resist it?

Tom Bradshaw: We have already moved at very different paces. The big barrier is that each devolved country is moving in a different direction and at a different pace. Trying to get back on the same track could be very difficult.

The Chair: I have two supplementary questions—from Lord Duncan first, then Lord Grantchester. Please keep questions and responses brief.

Q94 **Lord Duncan of Springbank:** My question relates to the previous question. Mr Lines said that ELMS was not directly linked to the net-zero objective. Have you confronted government with that statement? If so, how has it responded?

Tom Bradshaw: It might have been me who said that. Yes, we have referenced it. There are elements within ELMS. There are soil actions which have an element of carbon storage, but there is no reporting mechanism in place for that and no standardisation of the calculators. We have raised this on numerous occasions. I now believe that Defra recognises that it needs to deliver something here and we are as confident as we have been that there will be policy development in this area pretty rapidly.

Martin Lines: It goes across all those ELMS actions and in the devolved countries. Farmers want to know why they are being encouraged to do those actions and how they will benefit from them. There is no join-up of an ELMS action to a climate, methane or biodiversity action.

We need to be able to see our role and our contribution as farmers in delivering national goals and being incentivised to change our businesses and our practices.

Q95 **Lord Grantchester:** Very often, up the supply chain, different processors up to the retail level will try to capture market advantage by insisting that their famers do something extra which other competing brands are not doing. That brings in the question of farm assurance standards, which the NFU is very strong on.

How far is the NFU progressing farm assurance standards in the methane activities of farms, so that they can be consistent and valued across the supply chain?

Tom Bradshaw: This goes back to a slightly different challenge. In the long run, could farm assurance play a role? If we understand how that data will be stored, where it will be and who is going to have access to it, and make sure that it is genuinely owned by the farmer, maybe there is a role there in the future.

The science of it is still essential to get the trust of the farming industry, making sure that they understand and trust that science and that there is the harmonisation of the calculators. There are many steps to take before we are in a place where we can do this.

However, there is also a danger that, if we do not do this, and we let other countries tell their story better than the UK tells its story—I am thinking about the Irish or the New Zealanders—we could lose market share because we are not stepping up and telling the story of UK farming. We must make sure that we do not let competitive nations tell their story of livestock production better than we are willing to tell ours. There is a need for it, but the accuracy of that information is fundamental.

Martin Lines: Many supply chains are now starting to incentivise action on the ground, data recording and adding premiums, but there is no

premium in the marketplace for those things. There is a need to think about what the role is of farm assurance. Originally, farmers were told that it was adding premium to their produce and that they would see a market return, but really it is about making sure that we are meeting legislative requirements and demonstrating that we are doing best practice. We need to understand what the value is for farmers to do farm assurance, in whichever labelling scheme or incentivisation it is done.

The Chair: Can we move on to the question from Earl Russell? We are right up against the clock.

Q96 **Earl Russell:** Can I ask you about the processes and mechanisms that the Government have to continue to support farmers and landowners with the implementation and adoption of new technologies and land practices? Is there something more or different that the Government should or could be doing to continue to support farmers and landowners in the longer term?

Tom Bradshaw: It is essential that all the actions that are incentivised by government are science and evidence-based. At the moment, there is a danger that some of them are not being driven by science and evidence but more by the belief in what they will deliver, rather than the evidence of what they will deliver.

I am a big believer that public money for public goods can work, but the public will want to see a value for the investment that they are putting into that public money for public goods. If we do not have the science and the evidence that underpins that, it will be very difficult to justify that public investment. It needs to be underpinned with science and evidence. There is probably a greater need for better understanding of the impact of these actions on a farm rather than in a lab. It is very difficult to say at the moment, "This action, which is being incentivised by government, will have this outcome". Trying to link them then, particularly to methane reduction, is a policy which at the moment does not exist.

Martin Lines: The Government have a toolbox—through the Agriculture Act in England and through ELMS, and the devolved nations are redesigning their schemes. They have the toolbox, but it is about what they want to incentivise. What are the measures, what are the matrices? It is also about making sure that the farmer understands why those questions are being asked. Farmers are being asked to change practices in many ways. There is a huge transformation in farming at the moment, but what are we being rewarded for and why does it matter to the nation and to the public? If it is public money for public goods, we need that transparency in measures and matrices.

We can champion that. It would be a benefit to the industry to say how quickly we can get there if the incentives are in the right place.

Earl Russell: How do we get this trust in place? How do we get to the point where we have farm-based knowledge? What are the impediments?

Martin Lines: There is a lot of really good stuff happening on the ground, with peer-to-peer learning clusters, AHDB and other bodies coming in with good advice and support, but it is about having a standard. What are we meant to be recording, and who to? What is best practice to deliver the best outcomes? Once we have that framework, give farmers the energy and they will get on with it. Give them the framework and the incentive and they really do change and want to get on with it.

Earl Russell: It is that causal connection.

Q97 **Lord Ravensdale:** I declare my engineering interests as set out in the register.

You brought up selective breeding as an attractive option from a technological point of view. Tom, you mentioned New Zealand and the practice over there. Clearly, the concern there is that this could negatively impact other desired characteristics. Is there any evidence from how that has been implemented in other countries to date of whether there is that negative impact on other characteristics such as improved production?

Tom Bradshaw: You could say that there is always the risk of a negative impact when you start looking at selecting for single KPIs. It is no different from single metrics. However, the New Zealanders would say that this is a suite of options. You get a balance scorecard, if you like—a profile—for a genetic animal, and then you get a KPI scoring. Methane is one of those weightings.

It then comes into the weighting of the whole animal, so you would make sure that you are not selecting purely on methane, because then you would end up with very perverse outcomes. As part of that genetic scorecard, methane would be just one of the criteria.

Baroness Whitaker: Mr Bradshaw mentioned private sector incentives to assist methane reduction. It would be very helpful if you could give us a note of examples or ideas of what such incentives might be.

Tom Bradshaw: We can follow up, because there are some processes which have done this. We also then think about this broader private capital market with its ESG commitments.

Q98 **The Chair:** I have one final question. Slurry may be a low-hanging fruit in tackling methane emissions on farms. Slurry storage requires equipment and infrastructure. Defra tells us in its 2022 report that investment in slurry management has not kept pace with increases in the sizes of farms or with the changes to supply chains. Why is that and what happens to the slurry that is not safely stored?

Martin Lines: Definitely the infrastructure and the investment in it have not kept pace with the growing size, and there is a lot of ageing infrastructure that will need significant costs, planning permissions and other bits. Particularly with environmental regulation within catchments, it is becoming challenging. There may be a need for some to move

manures out and look at their process, not just build a new store that covers it. Many farms are not up to the standards that we already have, let alone going further.

Unfortunately, much of that slurry gets used as a waste product, not a nutrient or energy product, so it is spread at the wrong times and in the wrong places. That is an unintended consequence. The tank is full and they do not want to let it run down the drain, so they need to get it out. This needs combined investment from government and others to make sure that delivers the right outcomes. Investment in slurry handling and storage is a long-term gain.

How can we bring in private green finance and other things that could join this up to get a return on the investment in maximising methane reduction and tackling other environmental harms through that investment process? The EA has been given more powers and resources to get on more farms, to help farmers understand what they should be doing. In that knowledge thing there is a role for many of our organisations—to make sure that those farmers understand what the legal requirements are now and where they should be prioritised in their farming investment.

The Chair: So monetising that carbon capture in a confined space, like slurry management, is something that the Government could incentive more greatly.

Tom Bradshaw: There is a fundamental challenge here. The supply chain and therefore the customer have not picked up the true cost of production. The externalities within the system are not being priced into the cost of production methodologies.

The Chair: Absolutely.

Tom Bradshaw: Again, this comes back to "Who is going to pay for this?" Are we saying that the price of milk on the shelf does not generate the investment required to deal with all these issues, or is it the public sector that is going to pick this up? It is essential to recognise that at the moment, there is no true cost accounting that picks up all these external parts of the supply chain. So there is a role there to try to understand who we expect to pay for this.

The Chair: Thank you both very much. We really appreciate your contributions.