HOUSE OF LORDS

Environment and Climate Change Committee

Uncorrected oral evidence: Methane

Wednesday 15 May 2024

10 am

Watch the meeting

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

Evidence Session No. 10 Heard in Public Questions 166 - 192

Witnesses

I: Justin Tomlinson MP, Minister of State, Department for Energy Security and Net Zero; Professor Paul Monks, Chief Scientific Adviser, Department for Energy Security and Net Zero; Robbie Moore MP, Parliamentary Under-Secretary of State for Water and Rural Growth, Department for Environment, Food and Rural Affairs; Karen Lepper, Deputy Director of Food Standards and Sustainability, Department for Environment Food and Rural Affairs.

Examination of witnesses

Justin Tomlinson MP, Professor Paul Monks, Robbie Moore MP and Karen Lepper.

Q166 **The Chair:** Good morning, everyone, and welcome to the Lords Environment and Climate Change Committee. This morning, we are taking evidence for our final session in our inquiry into methane. As is customary, this time, we have a complement of two Ministers, one from Defra and one from DESNZ. We are very grateful to you for making the time to be with us this morning.

I take this opportunity to remind everyone, both members and our Ministers, that we have a lot of ground to cover in this session. I will therefore be quite strict on time. We will have about five minutes per question and around 15 questions. I ask members and Ministers to keep their questions and answers succinct and to the point.

Before we move on to questions, there are some items of housekeeping that I have to go through. This session is being webcast live and will subsequently be made available to view via parliamentlive.tv and the parliamentary website. A transcript will be made public. Witnesses will have a chance to review the transcript beforehand and make any necessary amendments, with the agreement of the committee clerk.

I remind members that they should declare any relevant interests the first time they speak. Before I ask the first question, I refer to my own entry in the register of interests, as per the parliamentary website. I should mention that I am a director of Peers for the Planet, which is an unpaid position.

I have an opening question for the panel. The UK was a leading signatory to the global methane pledge at COP 26 in Glasgow. Among other things, that entailed committing collectively—that is, along with other signatories—to reducing global methane emissions by at least 30% by 2030, compared to 2020 levels. Furthermore, in 2023, the COP 28 agreement, which we worked hard to get accepted, called on parties to accelerate and substantially reduce non-carbon dioxide emissions, especially methane emissions, globally by 2033. So we have made a number of commitments.

However, as of now, unlike several fellow signatories, the UK has announced no clear cross-government delivery plan. Ministers, when do you intend to follow up on the methane memorandum and publish such a plan?

Justin Tomlinson MP: Good morning. First, I thank you for probably the warmest welcome I have ever had to a Select Committee in my various roles as a Minister. In my new role, this is, I think, my third Select Committee in three weeks. It is quite a steep learning curve, but here I am.

First, I just want to say that I am responsible for many areas with my net-zero hat on. Actually, our record around methane internationally

holds up incredibly strongly. Between 1990 and 2022, methane levels fell by 62%.

The Chair: We will come on to that.

Justin Tomlinson MP: I am coming on to it. We alone cannot achieve global targets; we need to work collectively. The UK was at the forefront of getting the global pledge on a reduction of 30% from 2020 to 2030. I know, through my international engagement, that the UK is seen as sharing best practice and inspiring other countries to step up. There are now something like 150 signatories to this global pledge.

We do have a plan. It is embedded in the carbon budget delivery plan, which has hundreds of policies covering all greenhouse gases, including methane; that is kept under very close review. We are expecting to contribute significantly to the global target, both domestically and through our international leadership and co-ordination of international efforts, to make sure that we can globally get to that 30% reduction over the decade.

The Chair: Is that in the public domain?

Justin Tomlinson MP: Yes. The carbon budget delivery plan, with its hundreds of policies, is.

The Chair: But that plan uses unquantified measures, does it not?

Justin Tomlinson MP: Yes.

Q167 **The Chair:** We will come on to that. What responsibilities do each of your departments have with regard to reducing methane emissions? How do you co-ordinate on those? I ask that because Defra's submission to the committee mentions that the carbon budget delivery plan sets out "a series of unquantified measures to achieve further emissions reductions". That is on page 3; it is a quote. Would it help your work to have statutory methane targets?

Robbie Moore MP: May I also thank everybody for their very warm welcome? This is my first Select Committee hearing, in front of a welcoming audience, so thank you very much for inviting me along.

All government departments work incredibly closely together. Defra certainly works incredibly closely with DESNZ on trying to ensure that, as a department, we are informing the agricultural community as best as we can and incentivising it both to be informed and to make the best decisions about reducing methane emissions. You are quite right that we do not monitor methane emissions specifically, but we do look at greenhouse gas emissions in relation to agricultural activities. That is something we are conscious of; we are working closely with a whole range of stakeholders to make sure that we have in place an incentivisation programme to ensure that the farming business community can take steps to reduce its methane emissions as best as it can.

Professor Paul Monks: If I could just add to what the Minister said there, it is not absolutely true to say that we do not monitor our methane emissions from agriculture. We have a number of monitoring emission verification programmes that supplement our inventory in that area, where we make an estimate on agriculture from bottom-up methods—that means number of cows versus how much cows emit, if you want the methodology—but we also have a number of atmospheric measurement programmes that allow us, through what are called top-down methods, to assess agricultural methane emissions. They are part of our carbon budget delivery plan. We are, I think, one of the only countries in the world to have that as part of our Climate Change Act carbon budget, with methane a part of that as well.

Q168 **Baroness Whitaker:** Good morning. Just on the question of co-ordination, all departments have some kind of a role in making zero carbon; some of course have specific roles. Is there a Cabinet committee to co-ordinate the whole lot? If not, what is the machinery?

Justin Tomlinson MP: My Secretary of State is personally held to account by very ambitious and challenging legal commitments. She therefore has the authority from the Prime Minister to hold each relevant department to account.

In my various ministerial roles, I have done lots of cross-government work. It is fair to say that the work in this area is very strong. The legally binding targets do not half focus minds and departments because, across the whole board of our different legally binding targets, emissions—whether carbon or methane—really do shine a light. That is one of the reasons why the UK is seen as an international leader. We are so transparent. We set in place things that allow us to be held to account. The Secretary of State is empowered to make sure that departments—

Baroness Whitaker: So it is not done through the Cabinet?

Justin Tomlinson MP: She is a member of the Cabinet and, through her authority, I chair many of those meetings. If a department were to be unhelpful, which they have not been, it would be escalated very quickly. When you have the support of your Secretary of State and Prime Minister behind you, it makes meetings a lot easier.

Professor Paul Monks: For clarity, we do have a Cabinet-level committee. I cannot remember what it is called. It has DESNZ in its name and is chaired by the Deputy Prime Minister. The effort shares that the Minister described, which are owned by the Secretary of State for the Department for Energy Security and Net Zero, are passed down to participating departments. They have to meet that effort share, and the Cabinet committee holds them to account. As the Minister said, he often goes to the committee for that. So we do have Cabinet committee-level scrutiny of our carbon budgets.

Justin Tomlinson MP: You absolutely have to. If one clink of the Government did not deliver, that would unravel all of ours because these

are very challenging targets. If you slip slightly, it will escalate very quickly.

Q169 **Lord Duncan of Springbank:** Last week, we took evidence that was very critical of the Government's methane mitigation measures. I wonder whether you have had a chance to look at that evidence, because it might be helpful to us if you could respond to it directly. Perhaps we can send it to you after this meeting, so that you can respond directly, because it is black and white between what they said last week and what you are saying now.

Justin Tomlinson MP: Was it in a specific area?

Lord Duncan of Springbank: Yes. They were talking mostly about some of the issues around oil and gas and were comparing you unfavourably with Norway, which has had regulations since the 1970s to reduce methane flaring and so on. The UK does not have that, and they raised a number of other issues. Rather than prolonging the discussion now, it would be worth sending you that evidence and those specific elements.

Justin Tomlinson MP: I suspect that we will cover oil and gas specifically in this meeting anyway.

Lord Duncan of Springbank: I accept that. The point I am making is that you have suggested that you are doing fine and that nothing more needs to be done, but they said quite the opposite.

Professor Paul Monks: If you look at methane emissions by G7 countries, since 1990, we have been in second place behind Germany, which has reduced by 62.4% and we have reduced by 62.1%. I do not think that is a sign of inaction; it is a sign of significant progress on methane.

Lord Duncan of Springbank: That is interesting, but it does not—

The Chair: We will be covering the oil and gas sector over three questions, so I hope to address that later.

Justin Tomlinson MP: I know where they are coming from and I suspect that it will be covered by those three questions but, if it is not, we will respond directly.

Q170 **The Chair:** On the international dimension of what we are doing, we have heard in evidence of various international collaborative efforts, shall we say, such as the Climate and Clean Air Coalition, the International Methane Emissions Observatory and the Global Methane Initiative. They are all centred on the global methane pledge. My understanding is that we do not really attend those meetings. Is that the case?

Justin Tomlinson MP: We support a variety of different meetings. I am sorry; so soon into the role, I do not know which specific ones we support. We also provide £2 million of funding to support developing countries specifically on methane-reducing issues. This comes back to the

global commitment to reduce methane by 30% between 2020 and 2030. We recognise that, in some countries, that is easier to do than in others. Therefore, additional support is being provided, both financially and in shared expertise.

As I have said, in my relatively short tenure in this role, I have been pleasantly surprised by just how much the UK is turned to for practical advice, such as on policy frameworks and the ability to unlock private investment to speed up the next generation. I am very happy to do that and support it. We led in helping set up this global pledge to which we have now seen 156 signatories.

The Chair: Indeed, and it is a huge success that we, together with the EU and the US, have achieved.

Justin Tomlinson MP: That is why Paul's point was so important about us currently sitting in second place. You cannot lead internationally unless you are demonstrating at your own front door.

The Chair: Mr Moore, could you also address this point quickly, before we move on to Lord Frost's question? Could you also address the point made in earlier evidence that the UK could really use a dedicated team of people who can help us collaborate internationally?

Robbie Moore MP: Speaking from a Defra perspective, we do a huge amount of collaborative work with other partners, internationally. We take a lead role with the Global Research Alliance on Agricultural Greenhouse Gases—a group of 57 nations including New Zealand, Australia and the US—which aims to share the work that we are doing on not only research collection but initiatives that we are rolling out on greenhouse gas reduction and specifically methane emissions.

We are also working with institutions here in the UK, such as Harper Adams University, the University of Reading and Queen's University, Belfast. We are using that information and the data provided to us on methane reduction as shared knowledge with other countries.

Q171 **The Chair:** In the session with Steven Hamburg from the EDF, we heard about financial support. I think those witnesses called it the methane finance sprint. We are real laggards in that, at about $2 million, when France and Germany contributed around $23 million and $21 million respectively. Also, we do not share and collaborate in our research efforts. We have huge expertise here. Steven Hamburg was at pains to emphasise that we are leaders in measurement and transparency, but we are not doing enough. I think the phrase he used was "leaning in"; we are just not leaning into this.

Justin Tomlinson MP: We do not recognise that. First, all our domestic monitoring measures are signed off by the UN. They are very stringent. We are one of only four countries that does not just estimate; we have a network of high towers that take samples of emissions to give us more accurate data. While the US and EU teams are leading on work to make sure that everybody catches up with us, we are feeding into that directly.

We are seen as leaders in this area, because having high-quality data derisks the decisions that we have to take. Whatever you do comes at great cost so, if you are going to retrofit or change things, you want to make sure that that is having an effective outcome. So I do not recognise that.

Robbie Moore MP: From a Defra perspective, we are one of the founding members of the Global Research Alliance, which we co-chair. That relates specifically to its livestock research group and specific concerns around methane emissions.

Q172 **Lord Frost:** I declare my interest as an unpaid trustee of the Global Warming Policy Foundation. As has already been said, methane emissions from this country have reduced a lot over the last 30 years or so, but progress has clearly slowed. We make this big progress and then take on another target in the global methane pledge, requiring further reductions. Economic theory suggests that those future marginal gains in methane will cost a lot more to achieve. What is the role of the Government in achieving those reductions?

Justin Tomlinson MP: That is a really good challenge. Just to be clear, from 1990 to 2022 we reduced by 62%. The current estimate is that we will reach a 68.7% reduction from 1990 levels by 2030. That would be a reduction of around 18.3% between 2020 and 2030.

Actually, the 30% was a collective global target, not one for each country. In some cases, we were decades ahead of some of our international partners, so we have already delivered. This is why the UK provides international co-ordinated work, either best practice or support around policy frameworks, unlocking private investment to make what are very expensive changes in many of these countries.

You are right: we have done a lot of this work already. That does not mean that we do not wish to progress. There are plans set out in the carbon budget delivery plan, but the UK is well ahead of schedule in this area.

Professor Paul Monks: There is an important context that we should consider here. When we talk about carbon budgets, we focus on methane, but there is also CO_2, nitrous oxide and the F gases. We have to take the whole suite and find out where the lowest-cost measures are to reduce those greenhouse gases. We look at methane through that lens of carbon reduction and cost, among the suite of other greenhouse gases that we are trying to reduce, as well.

Lord Frost: Have you done any cost-benefit work on that point and the trade-offs, either internally or externally?

Professor Paul Monks: We do marginal cost abatement curves for all our reductions of methane and other gases.

Justin Tomlinson MP: The Prime Minister has made it very clear that our approach has to be pragmatic and we need to take consumers and

businesses along with us. Ultimately, we need to deliver lower bills by having a more efficient energy system and no punitive impacts on consumers or businesses.

Lord Frost: I may be putting words into your mouth, Minister, but you implied that the 30% target perhaps ought not to bite as much for the UK, because we have already made big reductions and our effort should be on international information sharing, best practice and so on. We heard last week from a witness who said that the 30% target was too low, because so many countries are not part of the scheme, so it really ought to be 42% for those that are part of it. There are these very different perspectives. How much do you think the 30% really bites on the UK Government?

Professor Paul Monks: This goes back to the Minister's answer earlier. This is a global initiative, and we have to make 30% globally. We have to have a target that is achievable globally. That puts pressure on other countries. So, for example, we are working with Kazakhstan and Azerbaijan around reducing their targets as well. Again, my answer to that question would be the one that I gave earlier. You have to look at the methane emissions in the light of the whole basket of greenhouse gases that we are looking to reduce. The global methane pledge is taking our methane leadership and knowledge, and using it globally to accelerate countries to come alongside us in the area of methane.

The Chair: Lord Trees, did you want to come in at this point?

Lord Trees: Lord Frost has asked more or less what I was going to ask about the target, the challenging nature of it and what we have achieved already.

Q173 **Lord Grantchester:** I declare my interest in owning a dairy farm. I want to return to the roles of government. As you know, the government policy is changing towards environmental payments and incentives for farmers to improve. This question is directed at our two witnesses from Defra. In considering these new schemes, would it be helpful if methane was specifically targeted? Methane emissions were specifically targeted with a scheme under, for example, ELMS. At the moment there seem to be, yes, environmental schemes—

The Chair: Lord Grantchester, can we move on to Earl Russell's question and come back to that when we have a series of questions on agriculture?

Lord Grantchester: Absolutely, I am happy to park it there.

The Chair: It is an important question.

Q174 **Earl Russell:** My question is on the existing regulatory landscape for methane and to ask your opinion on whether you feel that that landscape is fit for purpose. I have three sub-questions related to regulation. This is the main question on regulation in terms of our evidence today. Can I ask you about the potential gaps and overlaps that exist in the regulatory

framework, about existing monitoring and enforcement powers, and whether you feel that they are sufficient and effective for the actions that you want to achieve? Finally, we asked about oil and gas. We asked OPRED to appear before our committee alongside the NSTA. It declined that opportunity to attend. So we wanted to ask you more questions about that and the reluctance to attend.

Justin Tomlinson MP: They are complex. You, in effect, have three bodies. You have the NSTA, which is responsible for the production side; OPRED, which is, in effect, us, responsible for the environmental side; and the Health and Safety Executive, is obviously responsible for general health and safety. I spent a period as the Health and Safety Minister. One of my high points was blowing something up on the High Peak mountains. This is a legacy of EU directives that felt it was better to separate production and the environment. There was a review carried out by Sir Ian Wood at the same time that the offshore safety directive was brought forward in 2013, which aligned. Back in 2013, this decided the way that it is. We live in a brave new world post Brexit. This is an area that we keep under review but we have not had specific concerns, so we are satisfied. It does not mean that that will be the case for ever if evidence comes forward that there is a better way of doing it.

Earl Russell: To your mind, are there potential gaps or areas of weakness? What would you do to improve enforcement, regulation and monitoring?

Professor Paul Monks: At the moment we do not feel that there is anything. We have written to the committee with a detailed response to the regulatory issues in respect of this. As the Minister says, we keep them under constant review. With respect to offshore oil and gas, there is a clear understanding that economic separation from the environmental is beneficial. You do not get read-across there. We have a number of fora that bring our regulators together to co-ordinate. HSE, OPRED and the NSTA—the North Sea Transition Authority—come together regularly to make sure that they are acting in a joined-up way. I think it is called a co-location forum.

Earl Russell: In their evidence, there was some confusion about them understanding the separation of their roles. Do you not feel that there is scope for further clarification?

Professor Paul Monks: If your Lordships find that that is something we should look at, we will take that under consideration. But from talking to the regulators, they do not seem to find any problem in operating the current system as it works. It seems to be delivering the outcomes, which is always the idea of regulation that you would expect in terms of safety, reduction of offshore emissions and the like. In a sense, it is working. It might not be the ideal system. I take no judgment on that. But it seems from the evidence we have to be working.

Justin Tomlinson MP: We are open-minded on this. Specifically on your point about OPRED not coming to give evidence, it is actually a

department within us. That is why I am here. It is not usual for it to sort of—

Earl Russell: To be fair, it said that it was well connected to you, so that was also in its evidence. But is something on which we will probably be minded to make a recommendation, I suspect.

Justin Tomlinson MP: We will happily keep this under review. We are not precious about it.

The Chair: In the evidence we heard, people were keen to point out that there were gaps in the regulatory framework—for example, on livestock. I know that it is measured to some extent but there is no continuous measurement. Environmental permitting regulations are fine so far as they apply to people but there are gaps. Not everyone comes under an EPR, and it is the case that you only monitor those that that come under your remit and frameworks. But there is a whole slew of emissions from methane that are not captured, not least because emission factors are historic, out of date and sometimes not transparent.

Justin Tomlinson MP: These are really important challenges. That is why we are not precious about whether there needs to be change in these areas. But this also then leans back into my point. Internationally, everybody estimates and, therefore, where there is a gap, there is a problem because your estimate is very much an estimate. That is why we are one of four countries that have gone that stage further to take real-time emissions data with our network of high towers that take those samples to give us more detail. So while we might not have picked it up in an estimate, if there is a gap, we will have got it in our real-time data and will continue to encourage internationally that others should follow suit.

That goes back to why we are leaning in heavily with our EU and US research. If we all collectively have better data, we can all make better decisions that ultimately deliver better value for consumers.

Professor Paul Monks: I can give you some reassurance about the timescales for this. We are working with a UKRI project called GEMMA, which takes the real-time measurements from the tall towers, adds it to satellite measurements of methane through things like GHGSat, sponsored by the UK Space Agency, to move away from, or actually increase the time resolution of our measurements. You make the point that inventory measurements are a year in post hoc through GEMMA, and projects like that run out of the National Physical Laboratory will increase the timescales available for understanding the variability of our methane emissions. So we take this area of greenhouse gas emissions monitoring regulation and variation monitoring ratification and verification—MRV—very, very seriously.

The Chair: We will come on to monitoring and verification.

Q175 **Lord Trees:** I declare an interest as a vet and I am interested in cows.

There seems to be a gap regarding fermentation emissions from cattle. We have heard a lot about regulation of waste, of fossil fuel extraction of slurry and manure on farms, which is only 15% of the livestock-associated emissions. The 85% is coming front-end from cows. I am not clear. There is no regulation of that but who is really promoting even the monitoring of that and ensuring the data is collected that would enable further regulation?

Robbie Moore MP: I can pick up on what we are doing to try to incentivise behaviour change within the agricultural sector. I know there are some further questions that specifically want to address what we are doing with livestock but things like, for example, the slurry infrastructure grant that that we have been putting more money into—

The Chair: I—

Robbie Moore MP: Do you want me to continue?

The Chair: Will you finish that point? We will have a whole section on agriculture.

Lord Trees: It is about the regulatory gap. Who does the front end of cows?

Robbie Moore MP: In terms of looking at the monitoring for the whole of the agricultural sector, that is exactly what we are doing. But we know that, back in 2020, 49% of methane emissions were coming specifically from agriculture, which is why we are wanting to incentivise behavioural change within farming businesses. The slurry infrastructure grant is a key element of that. Some £75 million was allocated to slurry infrastructure grants for new infrastructure to help with ageing assets, including capping of slurry infrastructure storage so that we are able to capture that methane. They are the sorts of steps whereby we want to try and influence behavioural change within farming businesses.

Professor Paul Monks: For clarity, what do you mean by regulating cows? Cows put out 200 to 400 litres of methane per day, depending on what grass they eat. In a sense, what regulation does one envisage? We know how much they emit. We have a pretty good idea of what they emit in our emission inventories, but we do not really regulate animals in terms of their emissions per se. We regulate them for health or other environmental impact reasons. I am sorry; I am missing the point of the regulation of cows. I am not trying to be difficult.

Lord Trees: I am not sure that we have heard a lot of evidence that we do accurately know what they produce. A lot of it is based on food consumption rather than the output. Correct us if we are wrong, but who helps to promote the measurement of that, first of all, and then promotes ways of mitigating or reducing it?

Professor Paul Monks: As you said, the way we do the emissions inventory is you look at the activity factor versus the emission factor. The activity factor is that our colleagues in Defra pretty much know every

cow, because they have to be registered under a national scheme. In some senses, that is not a particularly difficult number to know. The emission factor then is: how much does a cow, as you put it, produce in the front end? It is probably the other end that it comes out of, to be precise. We know what the emission factor is for that in terms of how much methane a cow produces. Therefore, in the emission inventory, you times the number of cows by the amount of methane they produce and you get a good idea of what the agricultural emissions of methane are—unless I am missing something in your question.

Lord Trees: Management practices vary hugely. Whether they are grass fed, intensively fed and so on has a huge impact, does it not?

Professor Paul Monks: Yes, but then again, we have some of that variability within our emission inventories. As to where our uncertainties are in the emission inventories, in fact, agricultural methane from cows is not one of the major uncertainties that we have. An uncertainty we are looking to reduce a little bit more is around the anaerobic digestion angle of the use of those products. We have a pretty good idea of what the primary emissions look like—scientifically speaking, that is.

Karen Lepper: In our carbon budget delivery plan we have some quantified and some unquantified measures. One of the unquantified measures is to consider the role of emissions targets to drive decarbonisation. For example, we could consider, like New Zealand and California, introducing split targets so that we target just methane. That proposal is at a very early stage, but it is in our carbon budget delivery plan.

The Chair: That sounds excellent. I think the committee would like to hear more about it. Maybe you could send something to us in writing on that.

Robbie Moore MP: We are certainly more than happy to do so.

Q176 **Lord Giddens:** Now I know what it feels like to lose my job, because you have basically answered the question I was set. Measurement is obviously fundamental: you cannot have good policy without accurate data. One of the things we have learned from previous discussions is that, like everything in this area, an enormous amount of innovation is going on, so even climate change is not wholly negative because there are a lot of positive things.

One of those is global co-ordination of satellite measurements. I have the evidence from Defra here on measurement—it is taking it very seriously—but you might want to say a bit more about international co-ordination. Steven Hamburg was mentioned. He was one of the innovators—the founder, really—of MethaneSAT, which will make a really fundamental difference, partly because it is linked to Google data. You might want to expand on that.

Justin Tomlinson MP: We have covered the majority of it, but I want to emphasise how proud I am that we are one of only four countries that

are measuring real-time emissions. We are very much leading the way. As I said, in the international engagement I have already had I expected some countries would, predominantly, turn to us for finance. Of course that happens, but more often than not it is around expertise on innovation more broadly. This Government have put £4.2 billion into additional research and innovation over a three-year period in these areas so the UK can be a forerunner on this, in terms of both soft power and the future high-tech jobs that we can deliver.

I am personally very proud of the exciting new stuff coming up with UKRI and the UK Space Agency, because both their headquarters are in my constituency. You would all be very welcome to come to see all the exciting developments in this area that will give us that much quicker data, so that we, the policymakers, can make better decisions rather than use out-of-date data. Every time we make a decision there is a potential for huge cost. If we are to deliver cheaper consumer bills we need a more efficient system, not a more expensive one.

Professor Paul Monks: If I can provide some reassurance, we are working quite heavily in the international context. We are part of the Integrated Carbon Observation System. We work through the World Meteorological Organization, which does a lot of standards and verification of these sort of measurements to make sure measurements are globally compatible. We want to make sure that when we measure one part per billion of methane it is the same one part per billion that is measured globally. You will know the very famous Mauna Loa series. Although that is CO_2, it is part of the same measurement system that we work with.

We also work through the European Space Agency on the same sort of problem: making sure satellite measurements of methane are accurate. We fund ground truthing, to be able to ensure we can take satellite column measurements, in which you are looking down through the atmosphere, and compare them with ground-based measurements. This is an active area. As the Minister said, UKRI has recognised this. The £12 million that has just gone into a programme called GEMMA out of the NPL again shows that the UK is leading the world in how to do greenhouse gas measurement, bring it together and invert it to get emissions from those measurements.

The Chair: The satellites—MethaneSAT and, we heard wonderful evidence from GHGSat—will be a game-changer in quantifying global emissions and pointing out larger sources. At the end of the day, though, it is the masts and monitoring on the ground that will follow up on that once we know where the problem lies. Once you have that data, will you do anything further to beef up your monitoring of on-the-ground emissions? The masts you spoke about will be crucial. Do we have enough? Are they all working? Those mundane questions are very important.

Justin Tomlinson MP: Yes, the ambition is to keep leading on this, which is why we are investing money into research and innovation: so

that we do not rest on our laurels about being only one in four countries. Although we want to bring everyone up to our standard globally, we want to continue to raise that standard ourselves.

Professor Paul Monks: To namecheck it again, GEMMA is doing exactly what you are asking. We are doing that evolution and trying to make a better system. The goal is to be able to pull apart the different methane sources—from agriculture, from waste, et cetera. You can do that by using the different meteorological footprints these tall towers have.

The Chair: Are they all working?

Professor Paul Monks: Currently, yes. We have been funding the programme for a number of years. To my knowledge, they are currently working.

The Chair: I would really like to have some further information and detail on that.

Professor Paul Monks: The Met Office delivers the programme. We can send you some of the details of that programme.

The Chair: Could you also send details of all other methods of measuring things on the ground and how robust you think that system is, because it will be crucial?

Justin Tomlinson MP: I can assure you that I had in brackets in my notes "Paul loves this". He will take great pride in sending you as much information as you would like on our monitoring mast network. You spoil him.

The Chair: The optical gas imaging cameras will be very important, but they need a real level of expertise to work them. Does that level of expertise exist within Defra?

Professor Paul Monks: The emissions cameras is an interesting question that comes later, on the question on methane leakage. We leave that to the people who are experts in using them, not necessarily the government departments. The HSE has a key role in leak detection, which is where those handheld methane detection cameras are. We are also developing a lot of stand-off capability to be able to do that. The NPL has a lidar, which is a radar for methane and the like, which can be used to detect things over a large spatial scale. We are really building up from that small scale to that big scale. Is it perfect? No, but are we moving quickly and are we a global leader? Yes.

Q177 **Baroness Bray of Coln:** Looking ahead, do the Government intend to include methane in border adjustment mechanisms or the emissions trading scheme, and what is your assessment of the opportunities, risks and obstacles in doing so?

Justin Tomlinson MP: First, it is a pleasure to see you, Baroness Bray. I have happy memories from our time on the Back Benches.

Baroness Bray of Coln: Indeed.

Justin Tomlinson MP: The principle of polluters paying for their emissions is something that we absolutely support. Methane is not currently included in that but we have indicated that we are reviewing this. We did a call for evidence that included oil and gas methane, and we are looking to do a consultation shortly to consult on specific proposals. To be clear, we support the principle that the polluter should pay.

The UK carbon border adjustment mechanism, which was published on 21 May, would follow suit if the ETS were expanded to methane. It would then be in scope so everything would be aligned. I hope that gives you an assurance on the direction of travel.

Baroness Bray of Coln: You say "if". Is there a big "if" there?

Justin Tomlinson MP: We have to go through those processes but underlining all of this is the "polluter pays" principle, which does not currently exist. We have done a review and will shortly consult on specific proposals. If you piece all those bits together, you can see where the endgame is.

The Chair: The CBAM will be really important in making sure both that our farmers have a fair and level playing field and that we are not importing emissions from abroad and from cheaper production methods. Is that something that will be built robustly into the UK's CBAM? Are you feeding into that?

Robbie Moore MP: My understanding is that we are having that level of engagement, absolutely. We recognise that it is important. As a department, we are having that cross-collaboration feeding into those requests so that we can enhance policy that is released from the department and that specifically supports the agricultural business sector.

The Chair: Will meat be covered—indeed, not just meat but other foodstuffs as well? Actually, let us concentrate just on meat; I must not wander from methane.

Robbie Moore MP: Meat is part of a package that is being reviewed and looked at but, at the moment, I am not in a position to comment further on whether it will be specifically included.

The Chair: We can ask you more questions when we come on to agriculture.

Q178 **Lord Frost:** Do the Government have any reservations at all about the principle of CBAMs given that, in effect, they introduce a set of new tariffs that did not exist before on the basis of a new principle? One can foresee them being extended over time to one area after another. The answers you gave earlier were based implicitly on the assumption that we want them and that it is a good direction of travel, I think, but that is at least arguable. I wonder whether the Government have thought about that.

Justin Tomlinson MP: The other way of looking at this is that they are trying to make sure that there is a level playing field. It goes back to the noble Baroness's powerful point about us ultimately not getting flooded by products that are not being held to account in the same way that we hold things to account. That actually helps us; that is how we view this.

Lord Frost: I do not want to prolong this bit of the discussion but that argument has always been an argument on trade policy and tariffs more generally. It is always used in practice as an excuse for putting in barriers and building in more protectionism.

Justin Tomlinson MP: There is probably nobody who knows more about this than yourself, so I will tread carefully. As things stand, we feel that this is potentially beneficial for us in terms of protecting—that is, along the lines of the powerful point that was made, to make sure that we do not get flooded. We are leading in this so it is us who have to gain rather than to lose.

Q179 **The Duke of Wellington:** As always, I declare my agricultural interests as in the register. This has been a very interesting discussion, as always. My questions revolve around the difficulty of measuring methane emissions on individual farms, of which we all are aware. Last week, we heard some very interesting evidence from Mr Steven Hamburg from the Environmental Defense Fund in America. He said, very clearly, "The waste from pasture-raised animals will not produce much methane … The moment you start having centralised and more intensified agriculture … you will have much more methane".

That is a clear point but I suspect that there are a lot of livestock farmers in this country who are not quite aware of the degree to which concentrating livestock in an enclosed environment, or a closed held environment, increases methane emissions enormously. Of course, it is difficult to capture a lot of that because, if you leave livestock in an unventilated space in order to capture the methane, you then have all sorts of disease problems. The whole area of how we educate, inform and guide farmers to reduce their emissions is clearly sensitive and difficult. Does Defra have any ideas about how to improve that? The average farmer will want to reduce their emissions if they are given clear guidance on how to do so.

Robbie Moore MP: Of course, as you rightly identify, reliable information is incredibly important. We recognise that. As I was saying earlier, we know that, back in 2020, about 49% of the measurables associated with methane emissions came specifically from agriculture at large. So it is a huge sector that needs to be addressed, and reliable information will help inform farming businesses on changing their behaviour.

Best practice is incredibly important. We are absolutely providing farming businesses with access to funded carbon audits and advice through the farming resilience fund. We are also undertaking a range of actions to increase the accuracy, consistency and availability of that level of farm

data in order to ensure that there is feedback coming from the likes of the farming resilience fund, which is providing that level of information and trying to reassure farming businesses that we understand, from a policy perspective, where we are rolling out our investment to incentivise behavioural change. The Food Data Transparency Partnership is an organisation that brings together those who are involved specifically in producing primarily meat, milk or whatever it may be, those who are elsewhere in the farm and food chain, the business sector, representation from stakeholders and government, to ensure that policy is being rolled out effectively.

The main point I want to make is that, as a department, we are engaging heavily in terms of trying to make sure that reliable information is distributed to the farming community. The Farming Minister, Mark Spencer, held the first task force on this back in March. It brought together the farming community, those who are involved in the retail sector and environmental stakeholders. We are making sure that we are informing farming businesses as best as we can with the data we have at the moment so that they can enhance their farming practices as best as they can.

The Duke of Wellington: Does any part of your policy rollout give financial incentives to farmers to reduce their methane emissions? Of course, the point was made earlier that one should look at not only methane but all the greenhouse gases. Nevertheless, as far as I am aware—Lord Grantchester touched on this earlier—there is no policy at the moment that concentrates on methane reduction in particular as part of a farming policy.

Robbie Moore MP: New technologies involved in reducing methane emissions are important. The specific programmes that Defra is rolling out include the farming innovation programme, the animal health and welfare pathway, and environmental land management schemes. Whether they are delivered through the sustainable farming incentive, the Countryside Stewardship scheme or landscape recovery projects, all of those contain elements that can help incentivise farmers to take on as good a practice as possible in order to try not only to enhance their business but to reduce their methane production.

The Chair: We will come on to some of those things later.

Robbie Moore MP: If we do, I will have more to add.

Q180 **Lord Trees:** In previous sessions, we heard quite a lot about new technologies for mitigating methane emissions from agriculture. What are the obstacles in implementing those, as regards things such as feed additives? We have heard about genetics, improved breeding, vaccinating against methanogenic bacteria, disease control and then improved waste handling, which has already been touched on. What are the barriers to doing more in terms of those mitigating measures?

Robbie Moore MP: You already mentioned feed additives through, for example, the Dairy Demonstrator project, which is being rolled out this year, and includes specifically work on methane-suppressing feed products on commercial dairy farms. The project is to test on farm methane through monitoring systems that will be put in place, and the ADOPT fund—the accelerating development of practices and technology fund, part of the farming innovation programme—has been rolled out this year. It will also look at methane-suppressing feed products.

On the point about trying to influence behavioural change within farming businesses, that is providing the confidence of the work being done around feed additives, which is why organisations like the Food Standards Agency and Food Standards Scotland are involved in making sure that feed additives that are able to be utilised, particularly within the dairy sector, for example, are safe to use and provides a level of confidence to farming businesses.

The other thing that has very much been welcomed by stakeholders is the precision breeding Act, which came out last year in 2023. I was in Berlin a couple of months ago at the Global Forum for Food and Agriculture, where many stakeholders from across Europe and beyond were referencing that piece of legislation and very much welcomed it, particularly the business community. So there are incentives that we are doing but there is also legislation.

I have touched already on the money that we are putting into slurry infrastructure grants as well, which is obviously trying to incentivise. We have had a good level of uptake between round 1 and round 2 in terms of the amount of applications that came in. This is specifically looking at new infrastructure that is going in, as well as capping slurry storage, so that we can capture methane released from slurry decomposing.

Q181 **The Chair:** I want to follow up on the breeding programmes that you mentioned. We heard from Tom Bradshaw of the NFU. He thinks that there is real promise in breeding selectively cows that do not produce so much methane, but it has to be incentivised because farmers are not paid for that at the moment. Is that something you are considering?

Robbie Moore MP: As I said, the precision breeding Act has been welcomed. The NFU have also welcomed it, which is good. We work closely with all stakeholders in terms of how that legislation was developed and moved through the House. Of course, when we are designing policy, we are, as I said, meeting all stakeholders to work out how, now we have the legislation in place, we can further incentivise farming businesses in the uptake, given the objectives of the precision breeding Act. That involves working not only with the likes of the NFU but other stakeholders on how we can make sure that we have the programme in place to achieve the objectives of the precision breeding Act. So that is being reviewed.

Lord Grantchester: You mentioned today the Dairy Demonstrator project and it is mentioned in a couple of times in your written

submission. We will not take up a lot of time now but I wondered whether you could write with further details of it, especially whether Karen could pick this up and clarify what it is trying to achieve. What targets are there and what do you think the result might be from the project? A bit more information would be very, very interesting to receive.

Robbie Moore MP: I am absolutely more than happy to write to you because the measurables that it is trying to achieve are set within the carbon budget delivery plan. So I am more than happy to provide further detail on that.

Q182 **The Earl of Leicester:** I think you have answered my first question about new technologies and mitigating agricultural methane. I am interested to understand how both departments view the use of GWP 100 versus alternative metrics such as GWP 20 and GWP*. As I understand it, GWP 100 is—I am being a little pejorative—the sort of 101 for measuring methane.

Professor Paul Monks: You are right. GWP 100 is the internationally recognised standard for that. It is reported through the UNFCCC. We report GWP 100 because of that international consistency question. You are also right to say that GWP 100 is not particularly good for methane. It is probably easy to cut to the chase of this and say that there is not a good metric for methane and CO_2 simultaneously because one is a long-lived gas and average lifetime of methane is 12.75 years, according to the last IPCC assessment.

Therefore, the question is how you have a metric that encompasses something that has hundreds of years' lifetime versus one that has a short lifetime. GWP* is one way of being able to do that. GTP—global temperature potential—moving away from forcing potentials, is another way in which we do that.

The answer to your question is that GWP 100 will be the international standard and we will stick with it because that is the way in which we have to report internationally. But in looking at the effect of different greenhouse gases, we will use the appropriate metrics in order to deliver an understanding and insight on that. GWP 20 does not really work for methane that well. It kind of does because it gives you a forcing factor that is 80 times more than CO_2, but that is because the CO_2 has a lifetime in excess of 100 years. In effect, GWP 100 is the appropriate metric for intervention and is the way in which we report and will carry on reporting internationally according to international standards. Does that make sense, or would you like me to talk very fast about metrics a little bit more?

Q183 **The Earl of Leicester:** No. We have we have discussed this in many other evidence sessions. I should like to ask a supplementary, though, to do with agriculture. To what extent do both departments understand the carbon methane cycle as it relates to the atmosphere, grass, soil and ruminants? How often does the importance of that get lost when we talk about its benefits for biodiversity because we are talking about climate

change? I perceive that the benefits of biodiversity of ruminants within the carbon cycle get lost.

Professor Paul Monks: That is a really good question. We consider things like soil carbon budgets within that. If we move to the area of biomass sustainability, for example, we look at that and are moving to a more enhanced framework that understands what in a net-zero world we call the externalities and looking for win-win.

I give you an example that you have not talked about in the methane area and is missing from the discussion, and is a Defra-DESNZ area: air quality. Reducing methane is both a win in climate change and in air quality because the global background ozone concentration, an air pollutant in cities, is actually controlled by the global methane level. We look at that join-up on air quality and climate change policies between the two departments, particularly when they are win-win. We are taking more of a systems view between the departments.

We now have a systems tool in order to avoid unintended consequences of, for example, negative impacts on biodiversity from net-zero policies. That is part of what it is called now our net=zero systems tool. We and Defra both use that tool to do that. We are taking into account more and more through our systems tools work the externalities of it. In a way, you could argue that we need to get out of the carbon tunnel in departments. We are getting out of the carbon tunnel and making sure that we understand the systems view of any net-zero change.

The Earl of Leicester: Mr Moore, I believe you are also the joint Minister for Natural England. Do you have anything to say on this?

Robbie Moore MP: I am not, actually. That is Lord Douglas-Miller, who oversees Natural England.

The Earl of Leicester: Oh. I suppose I just wanted to ensure that Ministers were aware of biodiversity aspect of this, and not have, as Professor Monks has said, just tunnel vision within carbon.

Robbie Moore MP: As a department, we want to make sure that, when we are rolling out a strategy—one document that is often referenced is our land use framework, as the department knows that land is a finite resource and no one is making any more of it—it looks specifically at getting the right balance between food production, energy security, biodiversity offsetting, net zero and making sure that we are meeting our environmental considerations.

The land use framework has not yet been released because, when the new Secretary of State came into position and I was made a new Minister back in November last year, we wanted to make sure that food security is absolutely at the heart of it when it is released. A lot of good work has been done by officials in the background, but food security has to be at the core of that and we are making sure that it cross-checks with those biodiversity requirements and environmental considerations.

The Chair: The land use framework was due last year, 2023. It did not appear and we still have not seen it, half way through 2024. It is crucial for the reasons that you gave. The Office for Environmental Protection has brought this up continually and we must have it if we are going to meet our nature biodiversity targets and determine how we parcel out and treat land. It is really important and farmers need that certainty, yet we are still waiting for it. They need a lot of certainty, which the ELMS should provide, yet we are still waiting for it. They are under pressure and methane is a small part of the pressure that they are under. I urge you to take that message back to the department; I know you will say that it is coming.

Robbie Moore MP: Let me provide some further reassurance. We went through a further round of stakeholder engagements just this month, when we had those who are heavily involved in the farming sector and environmental stakeholders around the table with all the Ministers within Defra who have been involved in this. We want to make sure that, when it is released, food security is absolutely at the heart of it. There is a recognition that those environmental considerations—net zero and biodiversity offsetting—are considered as part of that framework.

We were not comfortable with releasing it without all Ministers being happy that food security is absolutely at its core. That is why we have recently gone through a further round of engagement with key stakeholders from the farming community. The absolute aspiration is to make sure that it is put into the public domain as soon as possible.

The Chair: We are going to move on to Lord Ravensdale, but can come back to agriculture at the end, if we have some time, to ask any questions that have not been answered. I know I have a couple.

Q184 **Lord Ravensdale:** I start by declaring my engineering interests in the register and that I am a director of Peers for the Planet.

I will start with a supplementary to the Earl of Leicester's question on metrics. Professor Monks, you said earlier on the cost-benefit of interventions that you look at methane through the lens of the other gases. You also mentioned issues with metrics and that there is no single good metric for methane. I want to dig into how you do that cost-benefit analysis in the round, when there are issues with a lack of a single good metric for methane.

Professor Paul Monks: The answer remains the same. Our international element is to report through GWP 100. Individually, we do marginal abatement cost curves, which give the individual intervention vis-à-vis the cost against the counterfactual. So you say, "How much is it going to cost me to do that? How much carbon do I get from that? What's the cost against the counterfactual?"

Bringing those two together, we know the difference in the forcing factors between methane and CO_2. In general, we know that you get a greater value from a methane measure in the shorter term. You will look at the cost framework, but you will be aware of where that sits in the forcing

framework, as well. That is the way that the interrelationship between the two plays. So methane measures tend to be favoured, in some senses, because they are quicker to act and you get a greater forcing element from them. The cost and the forcing talk to each other in the decision-making.

Lord Ravensdale: Are you still using GWP 100 as the overarching metric for those analyses?

Professor Paul Monks: We have to, yes.

Q185 **Lord Ravensdale:** I have a more general question on oil and gas. We have heard a lot about the target for the cessation of routine flaring and venting by 2030 and some of the issues and opportunities around that date. I would like to probe some of the delivery risks you see around that 2030 target and what steps the Government are taking to ensure that they are in hand.

Justin Tomlinson MP: To be clear, NSTA expects zero routine flaring and venting by 2030. Flaring and venting should be reduced to the lowest possible level. Finally, all new developments should have zero routine flaring and venting, as a given.

The challenges in this are in the many old installations that we have. There are two factors that they have to weigh up. The first is the safety element. This is a part of running older rigs safely and completely upgrading those rigs is significantly expensive. If they are due to close close to 2030, it may not make economic sense to make those changes; therefore, they would bring forward the closure. So we then have to weigh up two factors: our energy security and; if the closure were brought forward, it would increase imports. The wider environmental impacts of importing what would have been produced in UK territory are far greater. So we are looking at this very carefully, but the percentage is less than 1%.

What is exciting is that we are confident that we are going to do this and the UK is a leader on this. But we must not lose sight of the wider benefits around decarbonisation of the infrastructure. I have an exciting visit to look at how floating wind turbines would be able to electrify a rig directly and how that will make significant gains in our tackling of greenhouse emissions.

Lord Ravensdale: You are aware of the recommendations from the Skidmore review and the Environmental Audit Committee on potentially bringing that date forward. What discussions have you had with the industry on whether there is that opportunity?

Justin Tomlinson MP: We have set out our expectations and they are crystal clear for all new developments. This is against a backdrop in which we are expecting a decline of around 7% of resources from this field anyway, which is roughly double the global targets. This is a declining mature source of energy but, for now, it is an important part of our wider energy mix while we continue to scale up renewables. As you

know, they have gone from 7% to 47% since 2010. Therefore, we are looking specifically at those very old rigs that otherwise would have had a close closure date.

The Chris Skidmore report says absolutely zero at 2030. As I said, bringing forward some of those closures—it could be six months or a year—would not make sense. We have to weigh that up against both our UK energy security production and the far bigger impact of that then being replaced by more environmentally damaging imports.

The Chair: Would CBAM not make sure that importing cheaper fuel does not happen?

Professor Paul Monks: CBAM looks at the intensity of upstream oil and gas production as part of its mechanism, so it would look at that. I am not sure whether it would reduce it, however.

The Chair: It is an important point.

Lord Trees: We understand that both venting and flaring are required for safety reasons. However, we have heard, disturbingly, that there is a financial incentive for venting to liberate the methane at no penalty, whereas if you light and burn the methane, you will produce a CO_2 emission for which there may be a cost penalty associated. First, is this true? Secondly, would it shift people to more venting than flaring?

Justin Tomlinson MP: We are not aware of that, so we will write back to you.

Lord Trees: That would be very helpful.

Q186 **Lord Grantchester:** We come now to leak detection and repair. We have heard a lot about how several states in the US are conducting regular inspections, either monthly or quarterly. What is the general guiding routine for UK oil and gas operators on detection? Should it be enhanced?

Justin Tomlinson MP: This is led by HSE, which is all over this. Further advancements are being explored by the industry and regulations via OEUK's methane action plan working group. It is an area that we take very seriously, but it is an absolute given and is a focus of the Health and Safety Executive.

Lord Grantchester: Are there timing issues that could be improved by conducting checks more regularly?

Professor Paul Monks: It is a pretty well-regulated market as it is. HSE rules, particularly for offshore, are quite stringent on the operators to detect and repair. As you may imagine, you do not really want methane leaks on an offshore rig. We could talk about HSE and onshore, with the replacement of the iron mains. That has had a great benefit in reducing the amount of leaks from the onshore system.

Justin Tomlinson MP: That is switching from iron to plastic.

Lord Grantchester: I just wondered whether the regime is tight enough.

Justin Tomlinson MP: We feel that it is but, as with all things, if new evidence comes to light it is under review.

The Chair: Why should leak detection and repair not be made compulsory? It seems a fairly low-hanging fruit.

Justin Tomlinson MP: It is, in effect, by the strict regulation of HSE. You would not be able to operate if you are not operating in a safe environment.

The Chair: Are routine detection, maintenance and repair carried out?

Professor Paul Monks: Yes. There has to be to keep your operating licence. It will be under the terms of the operating licence.

Justin Tomlinson MP: As Paul highlighted, if you get this wrong on an oil rig it would be catastrophic, so it is very tight.

The Chair: Is it compulsory or mandated that all venting and flaring should be reported? How is that monitored and enforced?

Professor Paul Monks: Government policy on venting and flaring is through the NSTA. We also make an estimate of it in our emission entries; that is where the 1% number comes from. If you look at the wider picture of greenhouse gas budgets, although venting and flaring seems a very visible measure it is actually a relatively small element of our overall methane budgets.

The Chair: It is cost-effective.

Professor Paul Monks: That is why the 2030 guideline is there—to phase it out. You have to give the industry a reasonable time to respond to it. That is the balance we are looking at.

Justin Tomlinson MP: The industry does accept this.

The Chair: I will move on to Lord Duncan, because he brought up the question about Norway and our comparison to its performance on this issue.

Q187 **Lord Duncan of Springbank:** Again, the question has broadly been answered, but it struck me, from looking at the substantial reductions in methane from 1990—they are substantial; there is no question of that—that they begin to all but flatline from about 2012 onwards. The significant reductions are over.

I was just looking at the National Atmospheric Emissions Inventory, which gives three principal events for bringing the emissions down: increased methane recovery systems; reduction in coal mining activity; and improvements in the gas distribution network. If there has been no substantive decrease since about 2012, what notable events can we anticipate hereafter to bring down those emissions, which are quite

clearly the tough ones? The other emissions have come down, so the ones that are left are the difficult ones. If I read the same document in five years' time, what notable event will this Government have delivered to bring down those stubborn emissions, which have broadly flatlined for the better part of 15 years?

Justin Tomlinson MP: You are right to highlight that. As I said, to a certain extent this is a reflection of the fact that we were so quick out of the blocks. Ultimately, the expectation is that we will have reduced methane by the end of this decade by 68.7%, based on 1990 levels. We are pretty close to doing what we can reasonably do in our area, subject to new innovation coming online.

Robbie Moore MP: We hope that the incentivisation programmes we are doing from an agricultural perspective will have an effect. However, we are conscious that, whether it is livestock production, beef, dairy or whatever you are trying to do, it is sometimes about trying to get the balance right. We are also conscious that changing your method of producing beef or milk from less pasture to more in-house, or the other way around, may have positive impacts in reducing methane production but it may have other consequences on water quality or the like. From Defra's perspective, we are trying to put as much reliable information out there as possible and continue that level of stakeholder engagement so that we can get the balance right between reducing methane and having positive consequences.

Justin Tomlinson MP: This is why us leaning in on the global challenge, whether to provide financial support or to share best practice, is so important. That is where, collectively, the gains are to be made now, because we were ahead of the curve in this area. If we can bring others with us collectively that will make improvements globally.

Lord Duncan of Springbank: That is true up to a point, but if you consider the decline of the coal industry as a means of reducing methane emissions, not many other countries will be following that because we have done it. It is simply a given that we are moving away from coal and so forth. The real challenge for the UK Government and leadership is to remove the stubborn emissions, because that is where the skills, talent, expertise, knowledge, science and so on are at their strongest and where the UK can chip away at these stubborn emissions. I would not want this committee to take from those remarks that you believe that you have done as much as you can on those and they are a benchmark.

Robbie Moore MP: Let me move away from agriculture to look at food waste, for example.

The Chair: Let us stick with oil and gas; we will come to waste later.

Justin Tomlinson MP: Specifically on oil and gas, we will continue replacing the iron pipelines, which had their issues around leakage and therefore had an impact, with plastic. We have already set out our clear direction of travel around flaring and venting, and continued innovation in

those areas. It is a relatively small element of it, but that is because we had brought forward so much of this work early doors.

Lord Duncan of Springbank: One point I would make, not to contradict the Chair at all, is that the stubborn ones really are in agriculture and land use; they are not really in the oil and gas sector. The ones that need to be addressed will be in that area.

Karen Lepper: You are exactly right on the need to do more in agriculture, which is why we have programmes on methane-suppressing feed products—we are working closely with the industry to see how we can push that through—and, as the NFU mentioned, on gene editing.

Q188 **The Chair:** I want to take us back to oil and gas. We do have a good record. However, it is a fact that we are not as good as our partners in Europe by some way. Globally, we have a good record. It also has to be mentioned, and I would like you to address this, that methane emissions from the oil and gas sector—and from other sectors, but let us talk just about oil and gas—are underreported, according to the IEA. Princeton University has done some research on this, and we have some other sources that would say this. That is because the emission factors used are in many cases very old and in some cases not transparent. We just do not know which emission factors are being applied.

Professor Paul Monks: On the point about the UK oil and gas industry, I do not recognise the characterisation that you give. What we talk about is the carbon intensity of that industry. The global level is to be less than 0.2% of that intensity target. We are at 0.17% and we are estimated to go down to 0.15% in 2025, so we are well below the 0.2% carbon intensity target. In some of these sectors, much of the question, when we talk about embedded carbon at least, is the carbon intensity of your oil and gas. Using UK oil and gas is actually a low carbon-intensity solution to that. So I do not recognise the characterisation of the UK oil and gas industry as particularly carbon-intensive.

The Chair: No. I am just saying that you have not addressed the specific point, Professor Monks, which is that there is real concern that the emissions are underreported from the oil and gas sector.

Professor Paul Monks: Again, I do not know what the evidence for that is.

The Chair: I cited the IEA, which is very clear on that, as is the research from Princeton University.

Professor Paul Monks: Oh, right, it is the Princeton University stuff—that paper. It is an infamous paper on the subject. We have analysed it very carefully. It is about the oil and gas industry's carbon intensity. We do not recognise many of the assumptions made in the Princeton work around the intensity of oil and gas. They do not tally with our own numbers and analysis on that. We would be happy to provide you with a lengthy critique of the Princeton work.

The Chair: Let me just say that the IEA is on the same page as Princeton University.

Q189 **Earl Russell:** Could I ask you a quick supplementary on monitoring in the international sphere? Some of the world's biggest methane leaks come from other countries' oil and gas. Obviously, new satellite technology will be a complete game-changer. People will not be able to hide these things any more. We have one of the best oil and gas industries in the world. In terms of the UK leaning in, has the UK given consideration to combining our monitoring technology and our oil and gas expertise to help when these things are detected—that is, a rapid reaction to try to deal with them?

Justin Tomlinson MP: We will certainly be offering it up, absolutely. This is where our international leadership comes in, in terms of us leaning in to support global efforts. The better the data, the easier it is to identify where the issues that need to be addressed are. You can then target your limited resources so that you do not unnecessarily waste resources and impact consumers and businesses—100%.

Q190 **Earl Russell:** I turn to the effective regulation of waste and waste management. Obviously, it is relevant to us in our inquiry here if we find that organic matter is being dumped illegally. According to the Government's own statistics, 18% of all waste ends up being handled illegally. We saw a 13% increase in large-scale fly-tipping between 2021 and 2022. The Government's own statistics also show a gap of £150 million in the landfill tax allocation. What is being done to try to tackle and crack down on the rise in the illegal dumping of waste? Have you made any kind of estimation of how much methane might be being emitted from waste that is of an illegal nature?

Robbie Moore MP: Thank you for your question. All of us get incredibly frustrated with the amount of illegal waste-dumping that goes on, with fly-tipping and so on. As a constituency MP, I get my fair share of correspondence coming in on that; it is incredibly frustrating to see. As a Government, we are absolutely ramping up the amount of enforcement powers that we give to the Environment Agency, along with funding that is being allocated.

Earl Russell: Specifically, what is the Environment Agency's budget for this?

Robbie Moore MP: We have increased the Environment Agency's budget by £10 million a year specifically to look at and explore the illegal dumping of waste—and not only that. When it comes to smaller measures to do with fly-tipping, we have increased the maximum on-the-spot fines from £600 to £1,000.

Earl Russell: Prosecutions are down, are they not?

Robbie Moore MP: We have given local authorities the power to ring-fence the funds that they collect through fly-tipping, specifically in order to allocate more enforcement and to ring-fence those funds for cleaning-

up measures. We have also created the Joint Unit for Waste Crime, which was launched in January 2020, to tackle serious crime and the organised illegal dumping of waste in the sector. It has worked with 102 different partner organisations and engaged in 175 multiagency days of action; that has resulted in 51 associated arrests by other agencies so far.

We have seen a reduction in the amount of fly-tipping that has taken place since 2020 but we are conscious that any fly-tipping should not happen. That is why we have increased the amount of money that is going to the Environment Agency.

Earl Russell: At the same time, large-scale, industrial, criminalised, organised fly-tipping is on the increase. That is a particular worry, is it not, because it is a criminal enterprise. Whether it is 18% or, as some people have estimated, 25% of all waste that is handled illegally, this is an issue that requires ongoing work.

Robbie Moore MP: Absolutely. No illegal dumping or fly-tipping should take place.

Earl Russell: Is that a government target?

The Chair: We need to move on and keep things relevant to methane, not just fly-tipping.

Robbie Moore MP: I did want to pick up on the issue of methane; I will allow my colleague to come in if he wishes.

On the illegal dumping of waste, by the very nature of how methane is produced through anaerobic breakdown, if organic waste is dumped and then effectively sealed, methane is produced as part of that anaerobic breakdown. From fly-tipping or illegal dumping of waste, we do not necessarily see a direct link to methane being released. There will be circumstances where it takes place, depending on how long organic waste may have been dumped and potentially put in a scenario where a capping type of situation has taken place, with harder fly-tipping materials being dumped on top of organic waste. But it is not necessarily resulting in methane being released specifically from the illegal dumping of waste.

Q191 **The Earl of Leicester:** My apologies. I neglected earlier to mention my interests, predominantly agricultural, as laid out in the register. I have a simple question. When do the Government plan to introduce the statutory instrument to create separate collection of organic and landfill waste?

Robbie Moore MP: That statutory instrument will be laid this month and follows the announcement that we made last week on simpler recycling measures, which is a welcome and a good measure. It creates much more cohesion and clarity across all local authority areas. This measure is effectively having a minimum of a three-bin collection, one for residual waste, one for dry recyclables and one for organic waste. As part of the statutory instrument that will be laid this month, there will be certain timeframes associated with that.

By 31 March next year, all large businesses will have to have their waste collected through those three principal main waste collection streams. For domestic properties, that will take effect on 31 March 2026, and then 31 March 2027 for microbusinesses. Specifically in relation to organic waste, we are expecting food waste to be collected free of charge. All local authorities will have to provide a free weekly collection for food waste. Residual waste will have to be collected fortnightly. This has a positive impact in terms of methane emissions because we know that if organic waste is then ending up in landfill, that is effectively creating and contributing towards methane emissions. By disposing of food waste and organic waste appropriately through having the simpler recycling measures come into place, that is helping us reduce our methane emissions as well.

The Earl of Leicester: Is it His Majesty's Government's assessment that these dates are actually achievable?

Robbie Moore MP: We have done a huge amount of engagement with all stakeholders—local authorities, businesses, representatives from households as part of a huge piece in terms of developing the simpler recycling legislation being brought forward. We feel that we have struck the balance right in terms of the speed at which we want to go and making it workable in terms of meeting those dates. So yes.

The Chair: Could I clarify the date when the statutory instrument will be laid stating that it will apply to each local authority?

Robbie Moore MP: It will be laid this month.

The Chair: What will be the date by which local authorities have to meet those targets?

Robbie Moore MP: It is 31 March 2025 for large businesses, 31 March 2026 for residential properties and 31 March 2027 for small microbusinesses.

Q192 **Lord Ravensdale:** We have heard from some of our witnesses earlier on in the inquiry about energy from waste and are aware that the renewables obligation scheme is due to end on a 2027 timescale. What plans do the Government have to support energy from waste after that period? Are you considering CfDs or other mechanisms? Are there any?

Justin Tomlinson MP: You are right. The renewables obligation scheme comes to an end in 2027. We are not expected to extend it in its current format because the initial objectives, the priorities, have now changed. But we and Defra are exploring all options, particularly around the ability for methane capture. That is an active discussion but I cannot give you a specific update other than this is a live issue.

Lord Ravensdale: Can you say anything about the kind of options that you are you are considering?

Justin Tomlinson MP: It is focusing on the role of capturing methane.

Lord Ravensdale: Are you considering any specific financial mechanisms?

Justin Tomlinson MP: We are not in a position yet but we know that this is a live issue because it will come to an end in 2027.

The Chair: It is 11.30 am on the dot. I could go further but it will frustrate people. It has been a fascinating session. Ministers, we are very appreciative of you giving your time so generously. I am particularly thankful to you, Justin Tomlinson. You have hit the ground running extremely well and it was a hard act to follow. Thank you, Professor Monks and Karen Lepper.