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Environment, Climate Change and Land Reform Committee

Tuesday 19 January 2021

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The Scottish Parliament
Pàrlamaid na h-Alba

Tuesday 19 January 2021

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ENVIRONMENT, CLIMATE CHANGE AND LAND REFORM COMMITTEE

1st Meeting 2021, Session 5

CONVENER

*Gillian Martin (Aberdeenshire East) (SNP)

DEPUTY CONVENER

*Finlay Carson (Galloway and West Dumfries) (Con)

COMMITTEE MEMBERS

*Claudia Beamish (South Scotland) (Lab)
*Angus MacDonald (Falkirk East) (SNP)
*Mark Ruskell (Mid Scotland and Fife) (Green)
*Liz Smith (Mid Scotland and Fife) (Con)
*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Dr John Armstrong (Marine Scotland Science)
Ben Dipper (Scottish Government)
Simon Gill (Scottish Government)
Helena Gray (Scottish Government)
Dr Fiona Harrison (Scottish Government)
Sasha Maguire (Scottish Government)
Keith Main (Marine Scotland)
Greg Symons (Scottish Government)

CLERK TO THE COMMITTEE

Lynn Tullis

LOCATION

Virtual Meeting

Scottish Parliament

Environment, Climate Change and Land Reform Committee

Tuesday 19 January 2021

[The Convener opened the meeting at 09:15]

Climate Change Plan

The Convener (Gillian Martin): Good morning. I welcome everyone to the first meeting of the Environment, Climate Change and Land Reform Committee in 2021.

In December 2020, the committee agreed to hold evidence sessions on the Scottish Government's updated climate change plan. We begin today with our first evidence session on that plan, during which we will hear from Scottish Government officials.

I welcome Helena Gray, deputy director, climate change; Greg Symons, climate change plan team leader; Sasha Maguire, senior economic adviser; Ben Dipper, head of biodiversity and land quality, natural resources division; Dr Fiona Harrison, deputy director, land use and land reform; Simon Gill, head of whole system and technical policy; and Matt Grady, head of behaviours and engagement. Good morning to you all—it is great to see so many of our Government specialists in front of us.

I will put all our questions through Helena Gray, who can delegate as she deems appropriate, rather than my having to remember who is the expert in what.

I will ask Helena two broad questions. What assumptions have you made around where we are in relation to the 2020 figures? In particular, why has the land use, land use change and forestry sector changed from being a large carbon sink to being a carbon source? I would like to delve into where we are and what we can expect in terms of land use emissions. [*Interruption*.]

I cannot hear Helena. I wonder whether there is an issue with her microphone or whether she has plugged in headphones—putting in headphones after we have done our sound check can sometimes be a problem. [*Interruption*.] We are still not hearing her. Could someone else take that question in the meantime? Perhaps Greg Symons would like to jump in until we get Helena's sound sorted out. I see Sasha Maguire volunteering.

Sasha Maguire (Scottish Government): I will cover what is going on with the land use sector and why it is switching from being a sink to being a source.

The United Kingdom Government has committed to the United Nations to implement the Intergovernmental Panel on Climate Change wetland supplement as part of upcoming changes to the UK emissions inventory. The wetland supplement will have particular effects, especially for Scotland. It will bring a range of peatland processes into the UK inventory and, by implication, into the Scottish inventory, which will result in the baseline level of Scotland's emissions being revised significantly upwards.

Basically, we are taking account of a new set of information that is being brought into the UK inventory, which will result in the envelope or set of emissions being revised. We have anticipated those changes in how we have gone about the plan in relation to the targets and the emission envelopes that we set out in the plan. The changes will happen in the near future and we are already anticipating them—we have built that increase in emissions into our planning.

The Convener: I might need you to clarify some of that. Is the crux of it that the way that things are measured is being changed? I am sorry if I am being a little bit dim.

Sasha Maguire: It is not so much about how things are measured; it is about what is included and what is excluded from the accounts. A new category of emissions is being brought into the accounting system, and that is what we are taking account of here.

The Convener: Okay. On the broader question of your assumptions about where we are in relation to the 2020 figures, am I right to say that the previous figures on emissions were for 2018, which is the current baseline? What assumptions are you making in relation to the 2020 figures? What are you working from?

Sasha Maguire: In our modelling and in the envelopes that we have produced, the 2020 figures that we use are based on the target level of emissions that we need to achieve in 2020. The figures that we use in our 2020 envelopes and so on are based on the target level. They are not an estimate of our expectations for 2020. We do not know that yet—we will not know it until next year. The modelling and the envelopes are based on what we need to achieve and what we believe is the best way to go about reaching the targets.

The Convener: I have a question about land use emissions. In the plan, you show emissions declining and then increasing from 2026 to 2032. Will you explain why it is set out like that?

Sasha Maguire: Sure. The land use sector comprises two big things. There is a big sink in the

forestry estate, if we consider carbon sequestration, and then we have a big emitter, which is the degraded peatlands. That is the new bit that is being added to the inventory. At the start of the period, although those two things are not exactly in balance, they are more or less in balance. There is a big sink and a big bunch of emissions.

We then project forward, using the UK Government's projections and expectations around the trajectory. The modelling is done for the UK Government by the UK Centre for Ecology and Hydrology. It plans out a pathway for Scotland, which we use as the baseline for our planning. There is a rising trajectory as a result of the modelling that the CEH has done for the UK Government.

Pushing the other way, we have the policies that the Scottish Government is bringing in around additional tree planting, peatland restoration and so on. We have the rising baseline and then we have the policies that are mitigating that, which push the curve down. Because those policies are slow acting—it takes a while for a tree to sequester carbon, and so on—the trajectory continues to rise during the period of the plan. If we look at the trajectory over a longer period, we can see that the policy actions start to bend the curve back down. That is the basic story of what is happening.

The Convener: Okay—thank you for that. While we try to get Helena Gray back, Greg Symons has agreed to be the delegator, so we will put all questions through him. I hand over to my colleague Stewart Stevenson.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): I will not ask about the policies on wetlands, because Finlay Carson will come to that later. However, I want to ask about how they are included in the inventory. What baseline is being used for peatlands? I imagine that it is 1990, but it could be 1995. I presume that adding our peatlands in at this stage will capture the adverse things that we did with them in the period from 1990 until we started to take a different view of matters.

I just want to be clear as to whether that assumption is correct and the inclusion of that information is adversely affecting the current numbers. I hasten to add that we want it to be included.

The Convener: Can Sasha Maguire come back on that?

Sasha Maguire: Yes. The baseline for our target calculations is 1990.

Stewart Stevenson: Okay.

The Convener: Can you continue with your next line of questioning, Mr Stevenson?

Stewart Stevenson: Yes, convener. My assumption—it is based only on the witnesses' job titles—is that this question might be for Matt Grady.

I want to talk about what we have learned from the changes in behaviours that have been associated with Covid-19. For example, we know that, broadly speaking, people are travelling less. That is good news, but it is also bad news, because they are travelling more in private cars, which has a big carbon footprint, and not so much on public transport, which has a small carbon footprint.

What engagement has there been with stakeholders and the general public in developing the new plan in the context of those changed behaviours as a result of Covid-19? What steps will you take to capture some of the benefits of those changes from a climate change point of view?

The Convener: We will go to Greg Symons first.

Greg Symons (Scottish Government): Helena Gray's connection should be back up and functioning now, convener, if you want to come back to her.

To answer Stewart Stevenson's questions, the impact of the virus has been far reaching and devastating and has led to changes in how all of us live our lives. The pandemic has reinforced our recognition of the devastating impact that unplanned shifts can have on our economy and our health and wellbeing. The importance of a just transition is a strong theme running through the climate change plan update, which demonstrates our commitment to ensuring that the transition does not have an unfair impact on particular groups and that everyone can experience the benefits that will come from net zero.

The pandemic has shown the impact of one emergency on our society, and it reinforces the need for drastic and urgent action in response to the climate emergency. There have been some positives from the pandemic as well. For example, we have seen some drastic changes to our travelling habits; there has been a decrease in food waste; and many of us have experienced a greater proximity to nature.

With regard to how we have brought the public along with us and tested our assumptions, the committee may remember the big climate conversation, which happened in November 2019. That was about setting a baseline for us when we were originally working on the climate change plan update, before it had to be postponed. We held

three stakeholder events involving approximately 200 stakeholders to test some of our visions and to create visions for the future, looking to 2032 and 2045. Those are still relevant and have made it into the plan.

Following the pandemic, we wanted to test some of the outputs from the big climate conversation, so we used a private company to reach out to a representative sample of the Scottish population. We went out to 1,000 people and asked them specific questions about the importance, and their perceptions, of climate change. Most respondents—79 per cent—said that climate change is an immediate and urgent problem. Through that survey, we were also able to test some of our actions for a green recovery. That information—the results from the survey of 1,000 people—was published as an accompanying document to the CCP.

Stewart Stevenson: Thank you. I will now defer to Claudia Beamish.

Claudia Beamish (South Scotland) (Lab): I have a quick supplementary question. It is very encouraging to hear Greg Symons highlight what the climate change update says about engagement and just transition. Were any parts of the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 not applied to the CCPU, due to its being an update? Could one of the witnesses explain how a just transition has been assessed in relation to the climate change plan update?

09:30

The Convener: Let us see whether we can get Helena Gray now, for testing purposes. She can defer to her colleagues if she needs to.

Helena Gray (Scottish Government): Can you hear me now?

The Convener: We can—wonderful. Welcome.

Helena Gray: I am so sorry about that. I tested everything earlier.

On how the 2019 act was applied, the document is, as Ms Beamish says, an update to the climate change plan, so it was not laid in accordance with section 35 of the Climate Change (Scotland) Act 2009. As a consequence, it is not a statutory document in that sense. Nonetheless, the update is to be read alongside the statutory 2018 plan, so it acts as a bridge between the previous and current statutory frameworks in so far as it includes policies and proposals that have been designed to meet the updated targets.

On how the just transition was embedded in the climate change plan update, you will have seen that one of the core themes in the document is how the just transition is being taken forward. It is fair to say that the just transition is embedded throughout, with a focus on jobs, on impacts and on understanding the updated plan's implications. We took on board the recommendations of the interim report of the just transition commission, which was published earlier in 2020. We look forward to the commission's final report later this year, which we will give further thought to.

Claudia Beamish: Thank you.

The Convener: I have a quick question. How were the sectors that are referenced in the update decided on?

Helena Gray: Because the climate change plan update is an update, we felt that it was important to maintain the seven sectors that were set out in the 2018 climate change plan, to allow a read-across of the two documents.

The one exception to that is that the climate change plan update includes a new chapter on negative emissions technologies. The chapter pulls together negative emissions from technological sources, which are a relatively new and evolving field. There is the potential to deliver negative emissions across several sectors, so we thought that it was important to pull that out into one chapter, to allow the climate change plan update to clearly articulate the role of negative emissions technologies.

The Convener: Thank you—that is helpful. Mark Ruskell has questions on the methodology that was used.

Mark Ruskell (Mid Scotland and Fife) (Green): I have a number of questions about the TIMES model but, given the time restrictions this morning, the committee will put some of them in writing to you.

There is, however, a broader question about TIMES. It is obviously an energy model and committee members have had various thoughts about it before. In this context, it seems to have struggled to produce a clear pathway to meeting the 2030 emissions reduction target of 75 per cent. As a result, you have needed to consider adding additional abatement and effort to what TIMES did manage to quantify. Can you say a bit about the thinking or the methodology behind that, particularly about how you treated the agriculture and industry sectors in relation to the additional abatement that you are requiring sectors to undertake?

Helena Gray: Sasha Maguire, shall I pass that one to you?

Sasha Maguire: Yes, thank you. I will give you a quick summary of our approach to developing the envelopes. We ran the TIMES model, which gave us our foundation, and then applied

significant additional constraint to it based on our concerns, particularly those about the potential for carbon leakage in the industrial sector. We imposed a more managed pathway on the industrial sector than the TIMES model would have chosen, given its freedom. The result of that more managed pathway for the industrial sector is in essence the slowing down of the pace of decarbonisation in the industrial sector compared to what TIMES would have produced.

The TIMES model did not manage to find a pathway based on the technologies that it is input with; it did not find a pathway to meeting the target during the planned period. As a result, we needed to find a way of allocating additional effort to sectors to make up that shortfall. We did that in a relatively simple way. We took a pro rata approach and divided up the additional effort that is required in each year of the plan according to the proportion of emissions reduction for which each sector was responsible in that year. We basically prorated the additional effort that is required.

There are two exceptions to that. Obviously, we did not apply any of that additional effort to the industrial sector, because it has that more managed pathway, nor did we apply any to the agriculture sector. As we explain in the plan, the additional effort that would have gone to the agriculture sector has been allocated to the land use sector.

That is a brief overview of what we did and how we got to where we are. I will stop there.

Mark Ruskell: Thank you for that. How do you make a judgment about carbon leakage or offshoring? Who informs those judgments? How are they arrived at?

I will give you an example. Sweden has quite a strong industry-led carbon reduction plan and their industry seems to be going above and beyond the ETS reductions that are required each year because they see a space for, let us say their steel industry, to move into. Where does the assumption come from that going beyond the ETS reductions will lead to an industry deciding to go offshore and go somewhere else? Where would they go to?

I am interested in where that thinking comes from because that assumption makes quite a big difference to the plan.

Sasha Maguire: It does make a big difference. I am possibly not expert enough to go fully into the detail on that but I guess that the judgment that we came to was that there are risks to the industrial sector if it becomes less competitive on a cost basis, and that Scottish industries would become less competitive if they were required to decarbonise at a faster pace than their competitors within the European Union or even within the UK as a whole. We made the judgment in order to ensure that we do not end up in the slightly pointless situation in which emissions are just happening elsewhere.

The most appropriate way to manage that risk is to track the anticipated new UK emissions trading system. Thereafter, for the later part of the period, from 2025 onwards, we will follow the way in which we have interpreted the advice of the Climate Change Committee, which has also recognised those risks and acknowledged that carbon leakage is a serious concern that we need to manage.

Mark Ruskell: I am still struggling to work out who defines that risk, because you are talking about the economic risk of investment going overseas. Who defines that? The TIMES model does not define that.

Sasha Maguire: No, it has not been defined in the TIMES model in that way. The judgment has been made by experts and by people in the relevant policy teams in the Scottish Government.

Mark Ruskell: Is that judgment based on, for example, conversations or economic analyses? Where does the assumption come from?

Sasha Maguire: As I said, I am probably at the limit of my expertise on the precise evidence base that underpins it. I would need to come back to you on that.

The Convener: Helena Gray wants to come in.

Helena Gray: Thank you, convener. As Sasha Maguire said, the decision to look after the industry envelope has been calculated to support the level of decarbonisation that avoids carbon leakage and to ensure that global emissions overall are not simply offshored. Therefore, the implication is that emissions will be reduced at an appropriate pace to protect jobs and output in Scotland's key industries, reducing the risk of Scottish sites operating at a competitive disadvantage. The key thing is not to put Scottish jobs at a competitive disadvantage. Of course, the rate of decarbonisation could be faster than that and, through other policies, we look to support industry's transition to net zero carbon. However, it is about ensuring that our competitiveness is not overly disadvantaged. It is a judgment call. If our policies were more stringent than those of other countries, it might create that disadvantage. Does that help at all?

The Convener: Mark, can I bring in Finlay Carson, who has a supplementary question on that?

Mark Ruskell: Yes.

The Convener: I will come back to you, Mark, if you want to ask anything else.

Finlay Carson (Galloway and West Dumfries) (Con): I am quite concerned that we have not had a straight answer to Mark Ruskell's question. We are talking about offshoring with regard to not just the economic impact and how that might work out, but the carbon impact. If we see Scottish industries becoming uneconomic and some of that work potentially offshored, and with that a potential increase in carbon, where does that feature in all this?

Helena Gray: I am sorry, but I am not quite sure that I understood that question. My connection broke up a little. Please could you repeat it?

Finlay Carson: Yes, certainly. Mark Ruskell was talking specifically about the economic arguments, who looks at those and how those calculations feature in this, and it appears that we do not really know. I am also concerned about whether any calculations are being made about the increased carbon from offshoring and potentially losing some industries from Scotland. Is that featured in the plan?

Helena Gray: It is important to remember that TIMES is just a model; we put in constraints and then look at their implications. We put a constraint in the model that, in effect, looked to protect against and prevent carbon leakage. I do not have the economic studies that informed that to hand, but if the committee would welcome further information on those, we can come back to you.

It is important to note that the CCC has recognised that industry is a hard-to-treat sector, but there are, obviously, avenues through which emissions can be reduced to lower levels. It is on that basis—from looking at some of the CCC analysis—that the post-2025 trajectory for industry in the updated climate change plan has been based.

I am happy to revert to the committee with a bit more detail on that, if you would find that helpful.

09:45

The Convener: I think that we will write to you on some of the detail of the TIMES model. We have a few more questions about that, but we probably do not have enough time to go into it in the live session.

Liz Smith has questions about how the sectors work and the policies that relate to decisions that are made in each sector.

Liz Smith (Mid Scotland and Fife) (Con): [*Inaudible*.]—it would be very helpful if we could have more detail about the criteria on which the policy judgments have been made through the network and exactly how decisions have been arrived at, because that is a huge area of concern that we obviously need to target.

That brings me nicely to my questions, which are about the different sectors. Obviously, there has been reasonable and quite encouraging progress in some sectors, but it is very far from being the case that there has been such progress in other sectors; in fact, there is considerable concern that they are not moving fast enough at all. Why are some sectors finding it so hard to agree what their ambitions ought to be? I will come to the policies around that later. What are some of the challenges for the sectors that are not doing so well?

Helena Gray: Shall I send that question to Sasha Maguire?

Sasha Maguire: To be honest, I am not sure that I have the answer. Is the question why some sectors are finding it easier than others to decarbonise? Is that the gist of—[*Inaudible*.]

Liz Smith: If you look at the evidence that we have, you will see that some sectors have made pretty good progress on that, but that is not the case for other sectors—transport, for example. If we are driving policy at specific areas, we need to understand what criteria are being used in order to facilitate that policy, and what is holding some people back from being able to obtain their ambitious target. I am interested in finding out exactly why some sectors are really not making the progress that we would like and expect.

Sasha Maguire: I suppose that there is a distinction between how we have gone about deciding what effort sectors should make and the more backwards-looking question of why some sectors have performed better than others, which is possibly more what you are asking about. We are probably a bit more in the space of the first question, in thinking about what will happen going forward.

On the backwards-looking question, there will be such a variety of contexts and sector-specific issues that I struggle a bit to pick out what a top five or a top 10 would be. Over the past 10, 20 or 30 years, we have definitely seen that a lot of the decarbonisation has been driven by changes in the electricity sector. In a sense, that is not easy, but it has been easier than the challenges that we face now. Big, lumpy decisions have been made—they have not necessarily been decisions for the Scottish Government to make—on the operation of coal plants, for example. That has led to a lot of the decarbonisation that we have seen up until now.

Looking forward, we have far more challenging issues, as you have identified. That is exactly what we are dealing with in the plan. We have policies that try to tackle the challenges in the transport sector and policies to tackle some of the thorny issues around how we decarbonise the domestic

sector—heating and so on. There are a lot of sector-specific challenges, which have slowed down our progress until now. We now have a fantastic set of policies in the plan that try to unlock those challenges and move things forward.

Perhaps the best way to answer your question about what the challenges are is to look through the policies that are now in the plan, because they are responding to exactly those challenges. That was a bit of a vague and generic answer to your question; does it help at all?

Liz Smith: Not entirely, if I may say so. What I am trying to get at is that, if we are scrutinising the Scottish government's policies, which is our job, and how sectors are aligning themselves to the climate change plan, the most important thing is that the plan can be delivered. Therefore, it is critical that the relevant information is put before us—the facts about how it is translating into progress in the different sectors.

If we read the climate change plan, particularly the overview, there is an expectation that there will be certain challenges in the different sectors. As we know, some sectors are incredibly diverse, agriculture being one. What I am driving at is whether there are policies that we need to put in place to help the sectors that are not performing as well just now—I come back to transport. What do we need to do in order to ensure that those sectors can meet the ambitious targets that they have been set?

If we are going to make the plan work, that is surely part of the political process. We need to understand where the hurdles and barriers are that are not allowing those sectors to make the greatest progress. I am asking you where the challenges are that we can address. What are they and what do we have to do about them?

The Convener: Helena Gray has offered to answer that.

Helena Gray: The key thing is a recognition that the sectors are very different and that the challenges faced by those sectors are very different. Another thing that the climate change plan update pulls out is that there is a relationship between the sectors. We cannot take them in isolation; there are lots of cross-cutting issues.

If I understand you correctly, the question is about where the biggest challenges are in the sectors and what policies will address those challenges. My response is that there are significant challenges across all the sectors. The targets are very challenging and therefore the envelopes and pathways that have been set are very challenging.

The climate change plan update sets out all the policies and proposals that we think are required to meet those envelopes and challenges across all the sectors. Like Sasha Maguire, I am not sure that I can pull out or focus on one specific challenge. All the envelopes are challenging and that is what the policy response in the climate change plan update seeks to set out.

Liz Smith: Is there general agreement within each of the sectors about the targets that have been set or are you detecting any push back?

Helena Gray: I am not detecting push back, but there is general agreement that the envelopes are ambitious and that the policy response is therefore ambitious as well.

Liz Smith: Thank you.

The Convener: You say that you do not want to pick out any particular sector and drill down into it, which I can understand. There is lots in the update, and it would be unfair to pick one thing. However, given the really stretching target of a 75 per cent emissions reduction target by 2030, which is not that far away, can you give any indication of where the priority will be? Where is there more opportunity in the short term to reach that 75 per cent reduction, given the technologies that we currently have?

Helena Gray: It is about action across all the policy areas and sectors. I could not single out one that will make the biggest impact.

The Convener: Given the technology that we have at the moment, where do you see the potential? I am not asking you to pick just one sector. With the technologies that we have, in which sectors do you see gains happening in the drive towards the 2030 targets? Is it in the transport sector or in domestic heat? Do those areas have the technology, the decisions and the behavioural possibilities?

Helena Gray: Technological innovation will impact across the board. One of the themes coming out of the climate change plan update is the need for technological innovation and to learn by doing. A push across all the sectors will be important in driving the change that is required.

The Convener: Okay. I return to my colleagues. Liz Smith, were you happy with that? Did you cover both of your themes?

Liz Smith: Yes, convener. I may come back in on theme 7 or 8.

The Convener: Mark Ruskell has some questions about the policies and proposals.

Mark Ruskell: I suppose that the question goes back to the TIMES model. You have policies—firm ones, most of which were in the existing climate change plan—and new proposals that are coming in through the update, and work has gone into quantifying what those will do. Do the new

proposals clearly match the additional abatement effort that you have built into particular sectors? I know that the work has not gone through the TIMES model, but is it built from the bottom up? Are you saying, "Here is the proposal. We will come back to you with more detail about when it will be developed and how much money it will cost, but this is explicitly what it will do in terms of meeting the additional effort that is required to meet the 2030 target"?

Helena Gray: I will take that question. The overall consistency of each sector's policy package, with the envelopes, has been based on the judgment of the key teams. The policies and proposals in the climate change plan update provide a strong foundation and set the pathway towards 2032, but it has not been possible to conduct emissions assessments of every policy and proposal. The challenge is that it is not an exact science. There are still significant uncertainties. Some of the policies are at an earlier stage of development, which makes them harder to model, so it has not been possible to do that assessment. The update follows the same process as the 2018 climate change plan.

One of the key themes or points that I would emphasise from the climate change plan update is that it notes that it is very much an iterative process. We need to learn by doing and by adopting an approach that embeds flexibility and adaptability and that brings in lessons from monitoring and evaluation. The more we do that, the more we will build up the evidence base on the impact of the policies and be able to refine and reflect as necessary. At this point, unfortunately, it is not possible to do the modelling that I think you are asking about. It is based more on judgment, and we will continue to refine and reflect as we monitor and evaluate the impact of policies.

10:00

Mark Ruskell: That point is more about the detail that feeds in and perhaps the more short-term stuff. In my understanding, climate change will drastically change the way in which the world works and society functions. Where do you see big system changes taking place? I struggle to see where those are when considering the different sectors. With vehicles, we might reduce the mileage a bit but mostly it will be about switching to different types of fuel; with regard to land use, we will still eat the same amount of meat—[*Inaudible*.]—the industry and we will make changes only at the pace of the emissions trading scheme. There is incremental stuff in the plan but I do not see the big shift that will change the way in which society works and produce a big reduction in emissions. Do you think that a big shift is necessary, and, if so, can you point to where you think it might emerge in the next 10 or 15 years?

Helena Gray: As I said previously, one of the key things is that all sectors and policy areas really push and are ambitious across the piece. With regard to some of the big changes, the really big shift that has been highlighted is the decarbonisation of domestic heat. Also, immediate steps have been taken and funding has been provided to encourage a focus on technology and innovation.

The climate change plan update points to really significant aspirations around land use change and significant commitments around peatland and forestry. Ambitious policies and proposals are being put in place across all sectors. Again, I probably would not highlight just one, because it is important to take them across the piece. It is about how it all cumulatively adds up and has a collective drive forward.

The Convener: This is probably a good point at which to go to Claudia Beamish, who will expand on this line of questioning on the balance of effort between policies and proposals.

Claudia Beamish: This is a complex area. We have received a helpful summary table of where new and boosted policies and proposals are in place. I will use electricity as an example. The first part of the table shows that there are 12 new policies and proposals and three boosted ones. The second part of the table shows that only some of those are actual policies. The table says that a significant number of the new or boosted policies and proposals are new proposals rather than policies. For electricity, 11 out of 12 are just proposals. How will they therefore be implemented, in view of what our convener highlighted about the stretching target of a 75 per cent reduction by 2030? Is it possible to explore that point further with one of you? I am interested in your comments.

Helena Gray: I will answer that first, and then I will invite Simon Gill to comment. I emphasise that the number of policies and proposals in each sector does not equate to effort. A policy or proposal that is captured as a single thing might be a big and significant one. For example, in the 2018 plan, we boosted a policy on peatlands, increasing the figure to 20,000 hectares. That was counted as a single policy, but it is a significant one.

It is important to recognise that the various sectors are starting from different points and that they face very different challenges and opportunities. On electricity, in particular, one of the challenges is about competence. A lot of policy that relates to electricity is reserved, which limits what the Scottish Government can do in the

space. That is possibly what is having an impact there.

I invite Simon Gill to comment.

Simon Gill (Scottish Government): The point that Helena Gray makes about the reserved nature of much of electricity policy is really important. The Scottish Government does what it can within devolved competence—we look at things relating to timing and consenting, for example. However, a lot of the things that need to change in order for us to continue the progress that we have made on electricity decarbonisation in Scotland involve a number of institutions at the UK or Great Britain level. They include the UK Government, Ofgem, which is the GB regulator of energy networks and systems, and National Grid, which is the electricity system operator.

The actions that we are taking to try to influence electricity policy involve engaging with those institutions and trying to push them to think in the right direction, which will help with Scottish decarbonisation. By their nature, those actions are less definite in relation to what we set out as our policies. We depend on the decisions that those institutions make and on our responding to them and trying to influence them. For that reason, as the SPICe paper sets out, the actions tend to look more like proposals compared with the more definite policies that you can see in some other areas.

Claudia Beamish: That is helpful. I thank you both. I understand what you say about reserved issues and the challenges that they bring. However, we need to consider the balance between policies and proposals, and I highlight again the very stretching 2030 target. In which areas are there new policies in the climate change plan update that will give confidence not just to the committee in its scrutiny but to the general public and help us to see where we are going?

Helena Gray: The tables at the back of the update are really helpful in outlining which policies are new. We have tried to be as open as possible about what is being boosted—in those areas, we are looking at accelerating effort across the sectors, maybe bringing timescales forward in order to do things more quickly or increasing the reach or the scale—and which policies are new since the 2018 climate change plan update. You might recall that a significant number of policies around the green recovery, which is also at the heart of the update, were announced in the programme for government, and there are also policies that are new to the climate change plan.

As I said, I would not highlight or pick out just one or two items. I encourage others to look in detail at the tables, which set out which policies are new or are being boosted. There are a range of them across all the sectors. I think that there are over 100 new or boosted policies since the 2018 plan, which reflects the breadth of the proposals in the climate change plan update.

Claudia Beamish: Can I just press you—sorry, convener.

The Convener: I was going to bring in Liz Smith, but ask your supplementary and then I will bring her in.

Claudia Beamish: Thank you, convener. Ms Gray, I understand what you say about there being a lot of new policies. Can you perhaps give us some reassurance by highlighting two or three of the ones that you think will be the most effective—[*Inaudible*.]

Helena Gray: I might ask my colleagues to come in on that question as well, in case they have other ideas.

As I said before, I think that the proposals around domestic heat and buildings will be key, and there is an important opportunity now to make progress on those. On transport, I think that the reduction in car kilometre mileage will also be key. The other policies that I would pull together are around innovation and technology, which is a common theme for me. I would highlight the investments that have been made in a number of areas of technological innovation and the impacts of those investments.

It is also important to note that the climate change plan update looks to set a clear direction and, therefore, to note the knock-on implications of the market signals that the climate change plan update sends in its statement of intent—that is, the impact that those can have on the overall market response in the push to the net zero transition.

Liz Smith: Obviously—[*Inaudible*.]—priorities is the green recovery plan. In that context, do you think that there are any areas in which Scottish Government policies are at odds with the policies in the climate change plan, first, in terms of the substance of those policies and, secondly, in terms of the timescale for implementation?

Helena Gray: I think that the climate change plan update is a really strategic, cross-cutting, economy-wide document. There was a genuinely cross-Government effort in pulling it together, and the number of officials who are in this meeting helps to illustrate that. I cannot think of anything that runs contrary to the climate change plan update being embedded in our much wider policy approach.

Liz Smith: What about the second part of the question, about timescales? Even if you are confident that the policies of the Scottish Government and the climate change plan are

relatively well aligned, do you have any concerns at all about the timescale for implementation?

Helena Gray: Again, I do not think so. The climate change plan update stresses that we need to move at pace across all the sectors and areas and that there is a degree of ambition for that. I think that that is captured in the climate change plan update. I cannot think of anything that feels as though it runs contrary to that.

Liz Smith: So, you are putting on the record that you believe we will be able to meet the climate change targets as proposed.

Helena Gray: That is a very different question. I believe that the policies that are set here are ambitious, but I also believe that there are significant uncertainties, such as the pace of technological change, the actions that the UK Government takes and the actions that individuals take.

What we have here is an ambitious set of policies and proposals that puts us on the right pathway, but—as I have said before—we need to reflect, monitor, evaluate and learn by doing. All of that needs to happen, and the journey will be an iterative process. We will come back to the plan again in the not-too-distant future, when we have to prepare our next full statutory climate change plan. I am putting on the record that we have a set of policies and proposals that puts us on that pathway, but we need to continue to reflect and refine as we go forward.

10:15

Liz Smith: Can you confirm that you are also putting on the record that there is no incoherence between the Scottish Government's policies and the climate change plan?

Helena Gray: I cannot think of any examples of incoherence at present. There are obviously a lot of challenges and difficulties that still need to be worked through. It is a complex area, and there will be interdependencies and relationships that I have perhaps not even contemplated or thought of yet. At this point in time, however, I cannot immediately think of any examples of incoherence.

As I have said, it is an incredibly challenging and complex environment. The climate change plan update pulls out the complexities and interdependencies in this area. As I said at the outset, we have taken a sectoral approach, but we have also included a chapter that talks about the need for a co-ordinated approach, because there are so many complexities and interdependencies. We are still learning about and looking at those, which is contributing to the need for an iterative approach at this point. I do not think that anybody has all the answers yet.

The Convener: Before we move to questions on peatlands from Finlay Carson, I will allow Claudia Beamish to come back in with a quick question.

Claudia Beamish: Thank you, convener. I want to tease out a bit more of what Helena Gray said, which was helpful. Our committee—[*Inaudible*.]—actually said in our—[*Inaudible*.]—report:

"We need to tackle the implementation gap, where solutions have already been identified but not applied, and deal with the issue of policy incoherence".

To take a stark example from transport, a sector that has to deal with challenges in finding ways forward, there is a clash between the possibilities for road building and the need to deal with emissions. Have you identified that sort of policy incoherence in that area or elsewhere? It needs to be addressed as we go forward.

Helena Gray: I do not think that there is incoherence with regard to road building and our net zero ambitions, and Chris Stark of the CCC has said the same. Continued investment in our road network is important to support communities and businesses across Scotland, and the current national transport strategy makes it clear that

"We will not build infrastructure to cater for forecast unconstrained increases in traffic volumes"

and that, as part of a range of actions, we need to

"manage demand and reduce the need to travel by unsustainable modes".

The sustainable investment hierarchy is embedded in the second strategic transport projects review, which is considering investment plans. The review will also cover strategic road and rail networks and national infrastructure investment to support active travel and island connectivity. I do not think that there is any inconsistency there. Road infrastructure and maintenance is still important, and, as I said, Chris Stark might also have said that.

The Convener: Finlay Carson has questions about peatland and land use.

Finlay Carson: Peatland and peat extraction policies are very much in the public eye and being talked about. I know that the cabinet secretary was pleased about a much-lauded announcement of multiyear funding for peatland restoration, but only half of the target of 50,000 hectares of peatland restoration by 2020 has been reached. I also know that, in the past two years, we have managed only 6,000 hectares annually. Modelling suggests that, to deliver on the 2032 emissions envelope, annual peatland restoration would need to be far higher than the annual target of 20,000 hectares. The new policies and proposals do not seem to be strong enough to deliver that. Are the policies and proposals strong enough to deliver what will be a

huge step change in delivering the estimated hectares that are required to reach that emissions envelope?

Helena Gray: I ask Ben Dipper to answer that question, please.

Ben Dipper (Scottish Government): I am happy to try to answer that question.

Finlay Carson is absolutely right. The challenge for peatland restoration and forestry in the LULUCF sector in the plan update is significant, and delivering the envelopes that are in the update implies significant changes beyond the existing targets, which were already stretching. The current target for peatland restoration is around 20,000 hectares a year. Finlay Carson is right. In the past three years, we have probably achieved around 5,500 hectares a year. For obvious reasons, given what has been happening since the start of 2020, that year was an exception.

Peatland restoration is a new sector. Compared with forestry, it is an emerging industry, which has started from a fairly recent base. In effect, the Scottish Government started to fund the activity in 2012. We have collectively achieved around 25,000 hectares of peatland restoration in eight years. We are now looking to achieve around that amount annually, so the challenge is significant.

The policies, proposals and updates are focused in the main on trying to tune the engine, on trying to optimise the delivery framework that we currently have in place and get it working properly, and on maintaining a focus on the target of 20,000 hectares a year. A lot of the policies are to do with working with partners across the sector to identify what barriers currently exist in the industry.

Finlay Carson mentioned multiyear funding. That is a key policy that has unlocked a number of the other problems that are embedded in the sector around, for example, contractors supplying confidence, skills and training.

The cabinet secretary convened a peatland summit on 14 December, which was shortly before the update was published. We worked with a whole range of bodies—landowners, managers, contractors, delivery bodies and the third sector—to start to unpick some of the problems that have been around for a while. In the context of the new plan update, we now really need to get that machine motoring and get things running better to increase delivery and efficiency.

In parallel with that, the outputs of the summit that I mentioned will inform a review of peatland restoration governance, which we are also embarking on with our current delivery partners. That is all about increasing the efficiency of the operation and streamlining application and funding processes.

We have just instigated permitted development rights for peatland restoration to ease that process through colleagues in planning. We want to expand the number of delivery partners that we have, underpin the provision of training to support the development of green jobs and skills in the rural economy, and increase the number of boots on the ground—the number of people out there working with landowners and land managers—to work on the hearts and minds challenges that we face in delivering the transformational changes that we will need in land use to meet the envelopes in the climate change plan update. We are therefore undertaking a whole range of actions that are about process and about getting the thing moving better than it is at the moment.

Parallel with that, there is also a sense that this is not just about peatland restoration on existing peatland. The plan talks about the need to bring in other sectors, such as agriculture. That is predicated on the fact that the savings that you can gain from restoring peatland on different types of land are not the same. For example, restoring peatland on cropland that is made up of peaty soils saves around 38 tonnes of carbon equivalent per hectare. However, if you restore an already degraded peat bog, you may be looking at around 2 tonnes of carbon or CO_2 equivalent per hectare.

That underlines the need to start to build in other types of peatland restoration on other types of land, including some agricultural land. The update is quite open about that. Although the targets are stretching in terms of raw hectares, we will see an evolution over time as those other land use change conversions start to feed in. We might see that fewer hectares need to be restored, but also that we are restoring the types of land use that will deliver the maximum savings.

In time, I think there will be a shift. The monitoring framework in the update makes reference to that shift away from a focus purely on hectares to a focus on emissions from different types of land. There was quite a lot in that, so I will pause there.

Finlay Carson: My concern is that, rather than looking at what was actually achievable, the target figure was set just to balance the books. It is all very well being ambitious—everybody wants to be ambitious—but we have to be realistic as well.

At the moment, we are restoring only 5,500 hectares, but the target was 20,000 hectares. Was the target of 20,000 hectares target set simply to try to balance the books with the emissions envelope? How realistic is it that we will hit the target of 20,000 hectares? Will we have to go way beyond that, as the modelling shows?

I am quite concerned that we are plucking figures for peatland restoration out of the air rather than looking for achievable targets and, given the current performance, they are not achievable. Over what timescales will the new policies and proposals be developed so that we can see whether the peatland restoration targets are achievable?

Ben Dipper: It is fair to say that the range of different policies will take effect in different timeframes. As others have said in the conversation that preceded this, a whole range of different policies will go forward at different speeds.

Our priority is to focus on the process and the delivery mechanism that we have at the moment, and on overhauling the delivery structures that we have and the way that bodies work together to get the thing running better. We will get that to a better place and then be more able to respond to the challenges of increasing restoration even beyond the current target.

The shift away from hectares towards the saving on greenhouse gas emissions per hectare might ease the pressure on the hectare target as we move forward. The agriculture policy, for example, will also start to feed in.

In relation to the proposals that will be set out in the update, if they have the effect that we assume that they will and we can overcome some of the barriers—the sector is very much up for the challenge—I am confident that we will significantly lift the amount of restoration that we can achieve in quite short order, certainly across a two or three-year timeframe if we work with delivery partners.

For example, one of the main delivery partners is the peatland action project, which we fund; it is looking at significantly increasing the amount of restoration that it can do into double digits. We will then bring along other partners, such as the national parks, Forestry and Land Scotland and some of the big third sector organisations. We will definitely increase the amount that we can do, which is the whole aim of this.

However, it will take time. We accept that there is a challenge and that it is ambitious. We are doing what we can to address the structural issues—if you like—in order to get the thing working better and in a better place so that it can respond to increasing challenges as they emerge over time.

Those changes will evolve alongside changes happening in other sectors, such as forestry and agriculture. How we use land and what drives that going forward is a complex mix, as others have said. I might let others come in on the question about the envelopes and meeting the targets.

10:30

Finlay Carson: I am aware of the time constraints, so I will move on to strategic land use and land use change. The draft climate change plan update is clear that there will be a need for large-scale land use change.

Two mechanisms are discussed in the plan, and it is hoped that these will be implemented. The first is regional land use partnerships and frameworks. There is still some way to go to make it clear exactly how they will work and be funded. There is concern in the agricultural sector that the way forward is unclear. The second mechanism is future rural policy. In the past, Chris Stark has been quite critical of the Scottish Government's pace in bringing forward agricultural policies. The policy mechanisms that will be needed to deliver land use change to the extent needed will be huge. The plan is clear that we need large-scale change, but have those land use changes been modelled? Have we looked at the impact of changes in agriculture? Have we looked at the tree planting plans and at whether we have the right approach? Having the right tree in the right place is really important. Do we need to look at policies to plant more native broadleaf species, rather than the cash crops that we see on the plantations at the moment? Have land use changes been modelled, and when are we likely to see regional land use partnerships and agricultural policies take those on board?

Helena Gray: May I ask Fiona Harrison to take the lead on that?

Dr Fiona Harrison (Scottish Government): Hello, can you hear me?

The Convener: Yes, we can.

Dr Harrison: I have been having trouble hearing, but I think that I got that question. As others have said, it is complicated and big and lots of factors need to be taken into account. The climate change plan update acknowledges that we need more.

We have done some modelling on the areas, as Ben Dipper suggested. We need to be cautious in that we are not going to have a model that spits out the answer of what we need to do, because land is owned by lots of different people and communities need to have their say. That is one of the reasons why we are taking the approach of regional land use partnerships—to bring landowners and communities with us in making decisions about their regional landscapes.

I hope that we will shortly be able to announce the areas that we will be working on with the pilot regional land use partnerships to tease out some of the nuts and bolts of balancing national level targets with local and landowners' choice. We

have a lot more to do, and that might involve layering some of the mapping that FLS and NatureScot have to inform us on the best places for large-scale land use change.

Finlay Carson: Finally, the potential impact of large-scale land use change on food production is important to local communities and agricultural communities. If we are not producing food in the quantities or at the prices that are acceptable, there might be a risk of offshoring emissions from imported food. How is that taken into consideration in getting the balance right?

Dr Harrison: The Scottish Government is clear that the Scotland is a producer of high-quality food. Even in the CCC advice, there is no suggestion that we should be any less dependent on our domestic supplies. That is something that we want to avoid. As we talked about earlier, modelling offshoring is difficult because there is a lot of consumer choice involved. We are certainly clear that food production will continue in Scotland, and not just for domestic consumption. Food is a high-value product that we also export.

The Convener: Mark Ruskell has a short supplementary question.

Mark Ruskell: The CCC highlighted consumer trends showing slight reductions in dairy and red meat. Have you looked at that and how it can be supported, especially as the healthy eating guidance suggests that we are all eating far too much meat at the moment?

Greg Symons: The Scottish Government has a long-standing commitment to the concept and the reality of achieving our vision of Scotland as a good food nation. As the committee will know, the good food nation ambitions cut across the five key areas of health, social justice, knowledge, environmental sustainability, and prosperity. We are working hard to make a real and positive difference to the lives of the people of Scotland, including by ensuring the sustainability of our food industry.

Work is being done to achieve our commitments as set out in the programme for government, including working with businesses, the public, and the third sector, and to develop guidance encouraging people to eat more locally produced, sustainable and healthy food. That also supports the aims of tackling climate change alongside the development of the local food strategy for Scotland.

In addition, the Scottish Government has long supported the need for a healthy diet. Food Standards Scotland has a well-established set of guidelines on how to achieve that, including healthy levels of consumption of red meat and dairy products, and a marked increase in the consumption of fruit and vegetables in the average Scottish diet. Interestingly, there has been a significant increase in fruit and vegetable growing in Scotland in recent years. There has been a 26 per cent increase in vegetable growing and a 17 per cent increase in fruit growing.

Through buying high-quality, local Scottish produce, including red meat and dairy produce, we can work with our food production sector to ensure that it is produced in a sustainable manner and avoid offshoring.

The Scottish Government also provides support through the climate challenge fund; in 2019-20, one third of projects focused on food or producing food.

The Convener: Thank you, but we must move on. We have a couple of other areas to cover.

Angus MacDonald (Falkirk East) (SNP): I am conscious of the time, convener, but I will turn specifically to waste and the circular economy. The draft CCPU states that the concept of a circular economy is relevant to all sectors and to public procurement. Where would you say the key opportunities are to integrate circular economy principles across different sectors such as construction, agriculture, energy, or procurement?

Greg Symons: Analysis has been undertaken to identify the priority areas and to try to embed the circular economy principles within the wider green recovery. From that, six priorities have been identified which, as you have highlighted, include construction, agriculture and the bio-economy, and energy and renewables, alongside procurement, plastics, and skills and education. Work is on-going to identify specific opportunities for each of those priorities, which will be captured in associated work plans.

The examples around the circular economy are widespread and far reaching. In the onshore wind sector, for example, we will be looking at reprocessing turbine blades at their end of life, infrastructure renewal associated with that and suchlike. As you rightly say, public procurement can be very influential in this sphere, so we will look at the best use of public procurement to support the green recovery and our wider climate change and circular economy ambitions.

Angus MacDonald: We know that the 2025 targets for waste and recycling are similar in the draft climate change plan update and the 2018 CCP. However, the banning of landfilling of biodegradable municipal waste has unfortunately been delayed until 2025, which has raised concerns among stakeholders that there might be an increase in reliance on incineration. What are the key things that need to happen to ensure that the delayed target date of 2025 is met and that waste is not simply diverted to incineration?

Greg Symons: The Scottish Government remains fully committed to ending the practice of sending biodegradable municipal waste to landfill by 2025. We are making progress towards that. Official statistics show that the amount of that waste that is sent to landfill decreased by nearly a third between 2018 and 2019, so we have exceeded the EU targets. It also meant that 2019 saw the lowest level of whole-life carbon impacts of Scotland's household waste since official records began.

In line with the CCC's recommendation that disposal of certain biodegradable waste streams to landfill should be banned by 2025, we have set a date of 31 December 2025 in legislation, but we expect significant progress to be made ahead of that date. Work is on-going with the waste sector, local authorities and the Convention of Scottish Local Authorities to identify any challenges and the required solutions to support full compliance ahead of 2025. The work that had to be delayed during the pandemic has since been restarted.

The Convener: We need to move on. Mark Ruskell has questions on negative emissions technologies.

Mark Ruskell: You have highlighted NETs and carbon capture and storage technology as being part of a major new chapter in the climate change plan. You estimate that about a quarter of Scotland's emissions can be reduced through that technology. There are a lot of dependencies there, with hydrogen and blue hydrogen, and there are obviously risks, as well. What is the contingency plan if you do not see the roll-out of CCS at the level that you are predicting? Do you have any estimates of the private and public sector investment that will be needed to deliver the roll-out that you are identifying?

Helena Gray: Simon Gill will take the lead on that question.

Simon Gill: As you say, the negative emissions sector has become a major part of the climate change plan update and it is responsible for a significant fraction of the emissions reductions by 2032. To make sure that we talk about the right aspect, I will explain that negative emissions technologies remove carbon from the atmosphere across their life cycle and include things that combine carbon capture and long-term storage with processes and ways in which we extract carbon from the atmosphere. Out to 2032, the main ways in which that might happen are through the growth of biomass for bioenergy crops or direct air capture. Those are the technologies that we talked about. We need to think about a bundle of technologies, not just the CCS infrastructure on the end.

10:45

You are right to highlight the fact that there are risks and uncertainties relating to what might happen in that space. It is an ambition that needs a strong focus on it if we are to deliver the levels of emissions reductions that we are talking about by 2030 and 2032. The key area of risk, from a Scottish perspective, is the fact that, as in some other areas, a lot of the decisions about things that need to change are reserved to the UK Government.

The two sectors in which this is most likely to happen in the next decade or so are industry and electricity. We might look at things that are to do with electricity generation, for example, such as bioenergy carbon capture and storage power stations, which burn biomass in a power station that is connected to a CCS infrastructure. The ways of supporting that involve everything from the structure and design of the electricity market and the support mechanisms that go with it, to the equivalents of contracts for difference that are used today, the lengths of contracts that are available in the electricity market, and the level of confidence that that market—which is very much managed—can give to developers in order to bring forward investment on that side.

Revenue and income can also be developed for such projects in terms of the value that they create through removal of carbon from the atmosphere. That will depend on such things as how the replacement of the ETS develops, which will be taken forward by the UK Government, the Scottish Government and the other devolved Administrations. That group of Governments has flagged the fact that the replacement to the EU ETS needs to consider how to deal with NETs and negative emissions. Those decisions have not yet been made, and that poses a risk that needs to be dealt with reasonably quickly to enable us to give developers the confidence to bring forward projects, make the investments and get things developed and operational by the end of the decade, or by 2032.

You also asked what the back-up plan is. We have tried to make it clear in the climate change plan update that we are aware of the uncertainties. We need to make urgent progress, but we also need to keep track of how we are doing. We need to make sure that projects come forward in the next few years and that we start to see specifically where the projects are going to be, what applications they are going to be using, who is developing them and who is putting up the investment for them. We need to be confident that, where those projects involve the use of bioenergy resources, the scale of that use is compatible with many of the other sectors—particularly land use, where we are talking about bioenergy resources

that might be grown in Scotland—as well as with a wider, international, sustainable market in bioenergy. We need to consider that, and we have laid out the fact that we will set up a bioenergy expert working group to ensure that the evidence base, over this year and next year, is built up very strongly to support that.

We try to say that, through that monitoring—through keeping close track of the progress that we make over the next couple of years—by the time we do the next full climate change plan, we will be very clear over which sectors and locations the NETs are going to be delivered in. Assuming that they have come forward in the way we hope they will, we can then put those negative emissions back into the sector envelopes. I think that Helena Gray said earlier that, when we look at the next climate change plan update and the statutory requirements relating to it, we can look to move back towards the original seven sectors.

We can also take stock, in the next couple of years, of whether we have made the progress that is needed and, if we have not made progress as fast as we would have hoped, whether we need to reallocate the emissions that are currently listed as negative emissions to other sectors.

I will stop there to see whether I have answered your key points.

The Convener: We will have to wind up, because we have run over time. There are a number of things that we have not got to. We will follow up in writing to Helena Gray on some of them, particularly to dig in to some of the answers that have been given to supplementary questions. Thank you for your time this morning.

10:49

Meeting suspended.

10:55

On resuming—

Subordinate Legislation

Conservation of Salmon (Scotland) Amendment Regulations 2020 (SSI 2020/416)

The Convener: Our second agenda item is to take evidence from Scottish Government officials on the amendment regulations. I welcome Keith Main, the policy manager for salmon and recreational fisheries for Marine Scotland, and Dr John Armstrong, director of the freshwater fisheries laboratory for Marine Scotland science. I believe that you would like to take us through the implications of the regulations first. After that, if members have any questions for our two guests, please use the chat box.

Keith Main (Marine Scotland): Thank you, convener. I start by offering apologies from Dr Antje Branding, who is the head of the salmon and recreational fisheries team. Unfortunately, Antje is unwell. Otherwise, she would have been here to talk about not just the regulations but wider issues. I do not cover everything that Antje covers as head of the team, but we will try to answer general questions as best we can. I hope that we can do that today but, if we cannot, we will certainly follow up as quickly as possible.

I will make a couple of general points that Antje wanted to make. One, inevitably, is to mention the implications of the pandemic for fishing and angling, as it has affected us, in the past year. When the first lockdown happened last March, angling was one of those activities that just stopped because of the various prohibitions. We were able to work with the sector and develop guidance that allowed an easing of restrictions on angling to a certain extent from the end of May. However, we are conscious that some fishing effectively stopped from March, through April and May and that spring fishing is a big activity for anglers.

The pandemic also had an impact on our work, of course. People on the team—on the policy side and the science side—have been involved in dealing with the implications of Covid-19 and working with the sector to develop guidance on what can be done. Some of our science colleagues have been seconded to the central effort, and we have not been able to engage with the sector as much as we would like. Therefore, some things that we talked about when we spoke to the committee last year have inevitably been delayed.

We are picking those up again now. For example, last year, we talked to the committee

about our plans for developing our wild salmon strategy, which was a commitment in the 2019 programme for government. Inevitably, that work was delayed, but we have now started it. We have a strategic advisory group in place, which has met twice, and it remains Antje's hope that, by spring, we will have published a high-level strategic document, working with stakeholders in the sector to give us a direction for the next few years in helping to protect, conserve and develop wild salmon in Scotland.

Beyond that, we will work on more focused implementation plans to address all the pressures—or as many as we can—that act on salmon. That work has started, and we will probably talk about some of the other work during the evidence session.

11:00

For the committee's interest, up until last year, through the EU, Scotland and the UK were members of NASCO, the North Atlantic Salmon Conservation Organisation. Members might remember that it was one of the sponsors of the international year of the salmon in 2019. Events were held, including a parliamentary event in January 2020. With the exit from the EU, we had confirmation last month that the UK is now a party to NASCO in its own right. We are working closely with our colleagues in England, Wales and Northern Ireland to see how we take that forward. We are finalising our implementation plans for the next five years in line with NASCO's requirements. We hope that we will have quite a strong voice in NASCO now and that that will help us to press forward on some of the UK's and Scotland's priorities on issues such as the mortality of salmon at sea. I say that just for background information.

On the regulations, this is the sixth year of the salmon conservation regulations. You might recall that they were introduced in 2016 and did two things, mainly. One was to put a prohibition on retaining any salmon that are caught in coastal waters, which was effectively a ban on the netting of salmon at sea. That prohibition continues because of the state of the salmon population, which has not allowed us to consider easing that prohibition yet. The second thing that was introduced was an annual assessment of the 173 salmon rivers, as we have now assessed there to be, and their tributaries across Scotland. We decide on a year-to-year basis where it remains sustainable to catch and retain salmon and where salmon must be returned to the water if they are caught.

John Armstrong might say more about this but, last year, my colleagues completed the appraisal based on 2019 catch data. In summer 2020, from late August and through September, we consulted as required by legislation, seeking representations on the proposed grades. We had just 21 responses and representations this year from individuals and organisations, compared to 39 in each of the past two years and 170-odd in the year before that, when the regulations were quite new. Some people were supportive of the gradings and other people made similar comments and raised the same issues. However, as a result of the consultation, we agreed to make two changes to the proposed grades. In both cases, we raised the grading from grade 3, which is a mandatory catch-and-release grading, to grade 2. That was done for the River Clyde and for the Soval estate, which is part of the River Creed system.

I know that the committee has papers on this, but the overall figures show that grades 1, 2 and 3 have the same numbers, although there are inevitably some ups and downs for individual rivers. We have engaged and continue to engage with the stakeholders and some of those making representations. However, we believed that the evidence and representations that we had allowed us to go ahead and make the regulations that you now have in front of you. They were made on 3 December and I hope that they will come into force on 1 April in time for the full salmon fishing season. We hope that we have a full season this year.

The Convener: Thank you. Before I hand over to my colleagues, I have a question on one point. You said that the prohibition on salmon netting in coastal waters has been in place since 2016. Is there any evidence yet about the impact of that on the salmon population?

Keith Main: I will ask John Armstrong to talk about the actual numbers. What I have seen from a policy point of view is that there have been no big changes in the numbers. However, if we had continued to allow coastal netting, that would have further reduced the number of salmon returning to our waters. It is maybe worth saying that colleagues in England originally planned a phased prohibition of coastal netting and fixed netting on coasts that would not have come in until 2022, but they advanced that and most, if not all, coastal netting is now prohibited in England. We are interested to see whether there is an impact from prohibiting the nets that previously operated off the north-east of England. As I understand it, the salmon come that way into the eastern rivers and those nets were at one time taking a lot of salmon.

I ask John Armstrong whether we have specific evidence on that.

Dr John Armstrong (Marine Scotland Science): Undoubtedly, more fish will be entering the rivers and some of those will have been caught. However, there are a large number of

pressures on salmon and it is those pressures combined that result in the numbers of returning fish. Trying to tease out the effects of one pressure on its own is difficult, although one can do it theoretically. In the case of coastal netting, we can estimate from past data how many fish would have been caught by the nets and calculate what proportion of those fish we would expect to be caught. We could therefore come up with a modelled figure of the impacts of stopping netting. However, that is not enough to show a difference in the declining trend in broad catches.

The Convener: I appreciate that it is more complex than that.

Claudia Beamish has some questions.

Claudia Beamish: It has obviously been a difficult year for anglers and for the development of the science in relation to the gradings. However, I am pleased that, as salmon is a protected species under the EU habitats directive, it has been highlighted that there will continue to be the best possible protection for salmon on the same basis even though we have now left the EU. Have there been any developments in the granularity, as it was called in previous years, of the scientific evidence? If so, can you highlight those for us?

Dr Armstrong: You are correct that it has been a difficult year, which is because of Covid and some staffing issues. Indeed, one of our modellers was transferred over to calculate the R values as part of the Covid response, and we have clearly given that a priority. We therefore have not achieved the rate of development that we would have expected. We have published part of the work on fecundity, but we have not advanced the other publications as we had intended to. There has been more analysis of the juvenile assessment that we have discussed previously, but there is still work to be done to see whether that can be integrated with the adult modelling in a meaningful way. Progress has therefore been slow.

Claudia Beamish: That is understandable. Sorry—I see that Keith Main wants to comment.

Keith Main: As a general answer, what John Armstrong said is right. However, committee members might remember that, in the generality of the annual assessment that we do, we have given a commitment to stakeholders and the committee that we would not make significant changes for three years to the way in which we assess the annual status of salmon.

Some of the work that we have been developing on juvenile assessment would have been more advanced. Our aim would have been to take a view on whether to make changes to the assessment for the set of regulations for the 2022 fishings. In fact, Covid and the sorts of things that John Armstrong was talking about mean that that will probably not be done at least for next year. We will see what can and needs to be done, but we want to have proper discussions with people in the sector to make sure that we are heading in the right direction.

To go back to Claudia Beamish's point about the EU habitats directive, ministers have made it clear that we want to continue with its principles. We have a number of special areas of conservation for salmon around the country and, more generally, as I discussed, we have international commitments through NASCO to protect salmon. The species is in crisis right across the northern hemisphere and we are looking to continue working with European and international partners on the path that we are on now. I cannot see that we will make significant changes to that commitment.

Claudia Beamish: That is helpful.

I have a specific question from a regional perspective that builds on the discussions about coastal netting in relation to the instrument. I have been approached by the haaf netters on the Solway, who responded to your consultation. Will you highlight whether, and if so how, their concerns have been taken into account and what the response has been? The particular concern was about the different impact—in their perception, if I understand it correctly—on mortality from catch and release from their methods, in which a fish is kept in the water, although that is just one aspect of it.

Keith Main: Does John Armstrong want to talk about mortality or will I talk about the policy?

Dr Armstrong: I can talk briefly about mortality. Mortality due to catch and release is an issue that we discussed briefly last year and I said that I would get back to the committee on it. We have a PhD student looking at the consequences of catch and release at the moment and at different components of it. I hope that that work will report next year, which will give us a fuller answer.

It is certainly the best situation for fish to keep them in the water. It is when they are removed from water that the risk of mortality increases substantially. If haaf netting can be conducted without taking fish out of the water, that will certainly be beneficial for the salmon. However, my understanding, which Keith Main can enlarge on, is that haaf netting is catch and release only at the moment, so it is important that that method is adapted, if possible, to minimise the impact on the fish.

Keith Main: That is right. The reason why we classify the haaf netters in the Solway as a catch-and-release fishery is that they are in effect what we term a mixed-stock fishery. When the salmon

come into the estuary, they are heading for a number of rivers—the Annan, the Nith, the Eden and the border Esk. At the point where the haaf netters are catching the fish, we cannot say which rivers they are going to. Most of those rivers are grade 3 rivers and on a precautionary basis we therefore want the fish to get to the river.

The haaf netters were the first people I met when I started this job and I understand their concerns and the historic nature of fishing in the Solway with a haaf net. They have asked whether, because at least some level of mortality is assumed from rod-and-line fishing, they can have a kill licence to that level for their fishery. However, our position is for the mortality level to be zero in any unsustainable fishery and, therefore, giving that sort of kill licence would not be appropriate. That has been our position for a long time.

The haaf netters make the point that theirs is a historic fishery and one that is not practised anywhere else in Scotland. My answer to that is that we are not stopping the fishing: the haaf netters can fish for and can catch and retain sea trout or any other species that they catch in those nets.

11:15

Some members might recall that ministers made a contribution towards developing educational and tourist information to preserve the heritage of the haaf netters. We are not discussing whether they can catch salmon but whether they can kill them. The fisheries in the rivers that feed the Solway are so unsustainable that we have concluded that we cannot currently allow catch and kill.

I mentioned the Eden and the border Esk on the English side of the border. In the past two years, our colleagues in the Environment Agency have introduced mandatory catch and release for salmon in all those rivers on that side of the border. Before that, anglers and netsmen were allowed to catch fish on the English side of the Solway firth. That is no longer the case, which also reflects the continuing downward trend in fish.

Finlay Carson: I have some questions on the same subject. There were initially some flaws in the methodology, which had to be changed. That is one of the reasons for our being keen to speak to you every year when the Scottish statutory instrument is brought in and to review the regulations. We were far more satisfied with the evidence on which the river grading was subsequently based. I welcome that.

Am I correct in thinking that I heard—please put me right if I misheard this—that no scientific research was done on what the impact of coastal netting was and that it was just assumed that taking any fish out of the water would have an impact? Can you assure me that research has been done on the issue and that it was found that what was taken out through coastal netting by commercial fisheries had a significant impact? Are there any plans to do more work on that if there is no such scientific evidence?

Dr Armstrong: Extensive work has been done on coastal netting. Indeed, a few years ago, we conducted a large acoustic tracking study to update our understanding of the impacts of netting. We tagged fish at a site at Armadale on the north coast with little acoustic transmitters that give out pings of ultrasound. We had a network of receivers on a wide range of rivers around the coast, and we monitored the returns of those fish that had been tagged at Armadale to rivers around Scotland. We also looked at the genetics of the fish, which enabled us to work out which regions those fish had come to, so we knew what the impact of that particular net fishery would have been on a range of rivers and we could scope out the number and range of fish. It was quite an intensive piece of research.

That built on many decades of research as part of which smolts have been tagged with tiny tags as they go out. That research showed us where those smolts were captured in different nets around Scotland. There is a substantial data set that is presented in two Marine Scotland science reports, which are freely available. We can send those to you after the meeting so that you have the detail of the information that is available.

Finlay Carson: I have a follow-up question. Given the data that you have, there is no level of commercial netting—for example, on the Cree, Urr, Annan or Nith estuaries—that can be sustainable, which is why it is prohibited. On that basis, the issue of compensation for the loss of those commercial fisheries has always been contentious. Are there any plans to review the compensation—or lack of it—to the commercial netters on those estuaries?

Dr Armstrong: In order to explain, I will expand a little on the science. The main fact that has come out of the research into coastal netting is that netting stations tend to impact a wide range of rivers. So many rivers are now in a poor conservation status that it is likely that almost every netting station will impact a grade 3 river, because it is intercepting fish that are heading to distant rivers. That is the nub of the issue when it comes to impacts and why coastal netting cannot continue on a scientific basis.

I will hand over to Keith Main to talk about the compensation issues.

Keith Main: Before I talk about compensation, I point out that although we are talking about coastal netting, which is from vessels, there are

still a few netting operations around a few rivers that involve in-river nets. People are allowed to put out nets and catch fish in a number of areas where the river has been classified as a grade 1 or 2 sustainable fishery. When they do so, they must tag fish under carcass tagging regulations. We offer them tags each year, so that there is an audit trail and people can track fish that have been caught and are perhaps being passed on or sold. There are very few such operations, but they are all in river.

The coastal netting prohibition was brought in in 2016; we committed to review it after three years, and compensation was paid to the netting operators for that first three-year period. After the review, ministers decided that it was appropriate to continue the prohibition and that it should remain open-ended. We have been in discussions with the netting operations since that time.

Members might recall that the netsmen's organisation sought a judicial review of the way in which the Scottish Government was seeking to calculate and offer compensation to them for loss of business. I cannot remember the exact dates but, around this time last year, the judicial review found that the Scottish Government's position was, in effect, correct and supported the principle of the offers that we were making. In spring last year, we went back to each operation, explained our position again, offered to recalculate compensation on historical catch data that they could provide and made offers of compensation on that basis.

We have now made final settlements with all but three of the operators. Letters will be going to those three—or perhaps four—in the next week to say that we wish to get that settled. One or two operators are still trying to negotiate further on the amount of compensation. We simply have not heard from the other one or two for a while, so we are chasing that up. We hope to get the final compensation payments made.

Those payments are not for the fishery as such; we are not buying the fishery, so anybody who has the right to fish off the coast will retain that, but we have offered compensation in lieu of a projected 10 years' catches. That is the offer that we have made and, in most cases, have paid.

If—we keep our fingers crossed—Atlantic salmon makes a major comeback in the next five years and we decide that fishing has become sustainable again and that is extended into the coastal waters, it remains open for those netting operations to restart without any penalty on the compensation.

However, we wanted to make a long-term offer to allow operators time to adjust their businesses and make transitional arrangements. Some—[*Inaudible*.]—and other fish, too, but we wanted to make a long-term offer to give them time to change—[*Inaudible*.].

The Convener: This must be your final question, Mr Carson, then we will move on to Liz Smith.

Finlay Carson: Is the compensation based on the raw product, which is the fish that were caught, or is the compensation for the opportunity that has been lost to add value to the product that was caught? Particularly along the Solway, operators were catching fish and smoking them, which added value to them. Is the compensation based on how many kilos of fish were caught or on the opportunity that has been lost to add value?

Keith Main: To be honest, I do not know the fine detail of that. However, I can certainly find out and write to let you know. That was looked at carefully by us, the operators' legal representatives and the judicial review. I would hate to give you information that was wrong, so we will write to you on that.

The Convener: We go to Liz Smith for a final question.

Liz Smith: I am simply seeking confirmation. Three years ago, there was an issue about the data that was used for the categorisation of rivers, particularly at grades 2 and 3. Has the controversy about that been resolved? I think that you are aware that I represent constituents based around the River Earn who are in the angling clubs of Comrie and Kinkell Bridge. In 2017, they were vociferous in arguing that the Marine Scotland data was not as accurate as it could have been. That is not particularly relevant to the current SSI, but the issue of data is and its accuracy is even more important. Can you assure me that we have now resolved the difficulties that we encountered in 2017—as you will know, those were raised at the committee—to do with the methodologies used to measure fish catch?

Keith Main: John Armstrong will talk about data, but I can tell you that we continue to correspond with angling clubs on the River Earn. They have written to us again this year, and the fisheries director for the Tay district is also in correspondence with us and has regular discussions with us about the data. I understand the point that—

Liz Smith: Can you just confirm that the issue has not yet been resolved?

Keith Main: We have not persuaded the clubs that our methodology is the correct way in which to go. I think that some people are not going to agree with us on that. However, John Armstrong will talk about the robustness of the data. We work on the basis of data that is provided to us by clubs and

district salmon fishery boards, and we endeavour to make it as accurate and complete as possible every year. The model does all sorts of things that I do not pretend to understand fully, but we believe that we have a robust methodology. John, do you want to go further on that?

Dr Armstrong: Sure. There is always room for improving ecological-based models. We are trying to capture complicated and variable systems in a way that can be used to make management judgments. There are undoubtedly many uncertainties that can never be fully dealt with. However, we use the best available information in a structure that we have consulted on extensively and continue to refine. For example, we are working increasingly with scientists in England and Wales to see how we can bring together some of the data sets that they have on their key rivers and, by the same token, they can use some of the Scottish data to add increased weight to decisions. For example, one can have stock recruitment curves from a range of different types of river, which reduces the uncertainty in the estimates.

11:30

We have thought about the comments that constituents on the Earn have made. We have looked at how we can modify the models to account for fish coming in late in the year, for example, and we have made adjustments as we have gone along.

We continue to upgrade the models and we will continue to get better data. We have had to put a hold on the work on the Ayr fish counter, which, as I think we mentioned the last time we appeared before the committee, is the next counter that we are developing as part of a network that we hope to grow. We intend to continue that work in the coming year and to get more fish counters in. That, too, will reduce the uncertainty in the models.

I have no doubt that there will be people who want to see improvements. We will seek to make improvements; that will be an on-going process.

The Convener: Thank you both for your time this morning and for answering all our questions. I hope that the next time we see you it will be in person.

Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (Scotland) (Amendment) Regulations 2020 (SSI 2020/434)

The Convener: We move on to agenda item 3, which is consideration of a negative instrument. Do members have any comments to make on the instrument?

As no one has any comments to make, I confirm that the committee has no recommendations to make on the instrument.

European Union (Withdrawal) Act 2018

International Waste Shipments (Amendment) (EU Exit) Regulations 2021

11:31

The Convener: Agenda item 4 is consideration of a notification from the Scottish Government in relation to consent to a United Kingdom statutory instrument. Members will recall that there is an agreed protocol between the Scottish Government and the Parliament in relation to instruments made by the UK Government under the European Union (Withdrawal) Act 2018 that relate to proposals that are within the legislative competence of the Scottish Parliament. The Scottish Government and Parliament have agreed on a UK-wide approach to statutory instruments. The committee raised queries with the Scottish Government in advance of the meeting, and we have received a response.

Do members have any comments to make?

As no one has any comments to make, are members content that we write to the Scottish Government to confirm that the committee is content for consent to be given to the UK SI that is referred to in the notification?

I see that everyone is content. That is agreed to unanimously. Thank you very much.

The committee will meet twice next week: on Monday 25 January, when we will consider statutory instruments, including the draft Land Reform (Scotland) Act 2016 (Register of Persons Holding a Controlled Interest in Land) (Scotland) Regulations 2021 and the draft Animal Welfare (Licensing of Activities Involving Animals) (Scotland) Regulations 2021; and on Tuesday 26 January, when the committee will continue to take evidence on the updated climate change plan.

That concludes the public part of our meeting today.

11:33

Meeting continued in private until 12:06.

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